R E P O R T R E S U M E S

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AN ANALYSIS OF HIGH SCHOOL VOCATIONAL AGRICULTURE FROM EVALUATIONS OF GRADUATES IN THE PANHANDLE-PLAINS AREA OF TEXAS.

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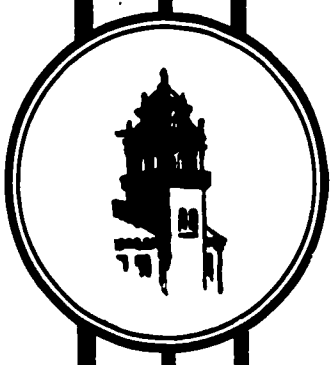
PUB DATE JUL 64

EDRS PRICE MF-$0.25 HC-$2.24 56P.

DESCRIPTORS- FARMERS, OFF FARM AGRICULTURAL OCCUPATIONS, *PROGRAM EVALUATION, *VOCATIONAL AGRICULTURE, LEADERSHIP TRAINING, HIGH SCHOOL GRADUATES, SUPERVISED FARM PRACTICE, *VOCATIONAL FOLLOWUP, COLLEGE ATTENDANCE, PARENTAL BACKGROUND, *OCCUPATIONAL CHOICE, TEXAS, FUTURE FARMERS OF AMERICA, FFA DEGREE, LUBBOCK

QUESTIONNAIRES WERE SENT TO 1,201 OF THE 1,540 GRADUATES FROM A REPRESENTATIVE SAMPLE OF 52 OF THE 89 HIGH SCHOOLS IN THE AREA WHO HAD COMPLETED 1 OR MORE YEARS IN VOCATIONAL AGRICULTURE AND WHO GRADUATED IN 1953, 1954, AND 1955 TO DETERMINE (1) THEIR CURRENT OCCUPATION, (2) FACTORS RELATED TO THEIR OCCUPATIONAL CHOICE, (3) WHETHER THEY HAD ATTENDED COLLEGE, (4) THEIR EVALUATION OF COURSE AREAS, (5) THEIR EVALUATION OF SUBJECT-MATTER AREAS, AND (6) THEIR EVALUATION OF VOCATIONAL AGRICULTURE AND FUTURE FARMERS OF AMERICA (FFA) ACTIVITIES. OF THE 846 WHO RESPONDED, 28.4 PERCENT WERE FARM OPERATORS, 15.7 PERCENT WERE EMPLOYED IN FARM-RELATED OCCUPATIONS, 49.5 PERCENT HAD ENTERED NONAGRICULTURAL EMPLOYMENT, AND 6.4 PERCENT WERE IN MILITARY SERVICE. OVER 56 PERCENT OF THE GRADUATES WHOSE FATHERS WERE FARM OPERATORS ENTERED AGRICULTURAL OCCUPATIONS, COMPARED WITH 18.9 PERCENT WHOSE FATHERS WERE IN NONAGRICULTURAL OCCUPATIONS. A GRADUATE WAS MORE LIKELY TO BECOME A FARM OPERATOR AS THE NUMBER OF YEARS HE HAD STUDIED VOCATIONAL AGRICULTURE INCREASED. APPROXIMATELY THREE-FIFTHS HAD ATTENDED COLLEGE, AND ONE-HALF OF THESE HAD RECEIVED A DEGREE. OF THE FARM OPERATORS, 40 PERCENT WISHED THEY COULD HAVE SUBSTITUTED MANAGEMENT OR AGRIBUSINESS EXPERIENCE FOR SUPERVISED FARM PROGRAMS IN HIGH SCHOOL. FFA LEADERSHIP TRAINING WAS RATED HIGH BY THOSE IN AGRICULTURAL FIELDS. (MS)



Studies in Agricultural Education

An Analysis of High School Vocational Agriculture from Evaluations of Graduates in the Panhandle - Plains Area of Texas

Agricultural Education Department
Texas Technological College
Lubbock, Texas

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July, 1964

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INTRODUCTION

High school curricula should be constantly evaluated to assist school personnel in developing courses according to the needs of the students. It is a known fact that technological innovations have caused job obsolescence while creating new job opportunities. This fact is true in vocational agriculture as well as in other areas. Consequently, information is needed to determine if present programs are being improved, and new courses are being added, to prepare students for the jobs available.

In agriculture, both advances in technology and changes in the organizational structure have provided incentive to increase the size of farms, thereby decreasing the number of farmers required to produce the food and fiber for our nation. Simultaneously, there is an increasing demand for employees with training in agriculture who understand the problems associated with distribution, processing, packaging, and marketing agricultural products.

To meet these demands, new programs are needed, and it is believed that the first step in such a development is to evaluate the students' vocational agriculture training with respect to their occupations. This particular study was developed for this purpose. It was designed to determine (1) the graduates' occupation, (2) factors related to occupational choices, (3) college attendance, (4) evaluation of high school course areas, (5) evaluation of vocational agriculture subject matter units, and (6) evaluation of vocational agriculture and Future Farmers of America (FFA) activities. The findings determined from this study should be especially beneficial to the teachers in Vocational Agriculture Area I of Texas, since the last follow-up study of graduates in this area

was conducted in 1939.

The objectives of this study were as follows:

1. To determine the present occupational status of West Texas high school graduates of 1953, 1954 and 1955, who had completed one or more years of vocational agriculture.
2. To determine the factors related to occupational choices of graduates.
3. To evaluate the high school course areas as related to occupations of the graduates.
4. To evaluate the vocational agricuiture program as related to occupations of the graduates.
5. To determine possible changes that could be made in vocational agriculture in order to fulfill the needs of male high school graduates in West Texas.

METHOD OF PROCEDURE

A questionnaire was designed to obtain the information concerning the high school graduates' occupations and how they evaluated their vocational agriculture training. The years of vocational agriculture completed and the scholastic rank of the graduates were obtained from the high school permanent records.

The questionnaires were mailed to the high school graduates who had completed one or more years of vocational agriculture and who were graduated in 1953, 1954, or 1955. This period was selected as it allowed the graduates sufficient time to complete college, return from the military services, and become established in an occupation.

To obtain a representative sample, 52 high schools were selected from the 89 high schools in Vocational Agriculture Area I that had a vocational agriculture department during the 1953-1955 period. Area I consists of 33 counties that include the Panhandle of Texas. The high schools were divided into the following three groups according to the mean high school enrollments for the 1953-1955 periods: (1) below 130 enrollment, (2) 130 to 250 enrollment, and (3) above 250 enrollment. To obtain an equal number of graduates from the three groups, a random sample of 24 high schools was selected from the smaller sized schools, 17 from the medium sized schools, and 11 from the larger sized schools. Sufficient addresses of the graduates were secured from 45 of the 52 high schools.

The cooperation and hard work of the administrators and vocational agriculture teachers of the following high schools made this study possible:

Amherst
Anton
Booker
Bovina
Childress
Claude
Cooper
Crosbyton
Dalhart
Darrouzette
Dimmitt
Estelline
Farwell
Floydada
Friona
Groom
Gruver
Hart
Hereford
Idalou
Kress
Levelland
Littlefield
Lubbock
Matador
Muleshoe
Pampa
Panhandle
Patton Springs
Plainview
Quail
Ralls
Ropes
Silverton
Smyer
Spearman
Springlake
Spur
Stratford
Sundown
Texline
Three Way
Tulia
Vega
Whiteface

A total of 1540 graduates from the 45 high schools completed one or years of vocational agriculture and were graduated in 1953, 1954, and 1955. Eighteen individuals of this group were deceased at the time of the study. The vocational agriculture teachers obtained the addresses of 1201 graduates, or 78.9 percent of the total living graduates. The questionnaire was pretested by mailing it to 20 graduates who had received some vocational agriculture training in a high school that was not included in the random sample of schools. The revised questionnaire, a cover letter that explained the importance of the research, and a return envelope were mailed to the 1201 graduates. Fifty-two percent (625) of the graduates returned the questionnaire within ten days. Those who did not return the questionnaire were mailed another questionnaire and cover letter. Nineteen and seven-tenths percent (236) of the graduates complied by returning the questionnaire on the follow-up mailing. ifteen of the 861 questionnaires returned were incomplete and were not used. The 846 questionnaires used represented 70.4 percent of the graduates whose addresses had been obtained and 55.6 percent of the total graduates.

The answers to the questions on the questionnaires were coded and punched on International Business Machine (I.B.M.) cards. This procedure

facilitated the sorting and tabulation of the data.

Vocational Agriculture Area I was selected for this study for the following reasons: (1) the study could be coordinated with one vocational agriculture supervisor, (2) travel by the author would be limited since the schools were relatively close to Texas Technological College, and (3) the area would be easily defined if similar studies were conducted in the future. It should be emphasized that this area was not representative of all counties in Texas as to type of agriculture and cash farm income. The agriculture in this area consisted mainly of beef cattle, cotton, grain sorghum, and wheat, with considerable acreage under irrigation. The estimated cash farm income per farm in this 38-county area in 1960 was $28,675, compared to an estimated cash farm income per farm of $9,730 for the 254 counties in Texas. These estimates of cash farm income were compiled by the Bureau of Business Research, College of Business Administration, University of Texas.

The following terms were defined as follows to aid in interpreting the data:

1. Graduates: Former high school graduates who had completed one or more years of vocational agriculture.
2. Farm operator: A graduate who spent 50 percent of his time on a farm and who received 50 percent or more of his income from farming. He had to own and/or rent land to be classified as a farm operator.
3. Farm-related occupation: An occupation for which the worker needs to have experience in farming and/or a knowledge of the why and the how of farming operations or one in which he is most effective in his work if he has them. This group included those who were farm managers and farm laborers.

4. Nonagriculture occupation: An occupation for which the worker does not need to have experience in farming or a knowledge of the why and how of farming operations.

5. Vocational Agriculture Area I: A 38-county area that includes the Panhandle of Texas. The counties furthest South are as follows: Cochran, Hockley, Lubbock, Crosby, Dickens, and King.

6. Mean value rating: Determined by coding the value of "very important" as 4, "important" as 3, "little importance" as 2, and "no value" as 1.

FINDINGS

General Characteristics

Occupations of graduates

As indicated by data in Table 1, 240 graduates, or 28.4 percent, were farm operators; 133, or 15.7 percent, were employed in farm-related occupations; 419, or 49.5 percent, had entered nonagricultural occupations; and 54, or 6.4 percent, were in the military services. In comparison, 62.7 percent of the graduates' fathers were farm operators, 7.8 percent were in farm-related occupations, and 28.1 percent were in nonagricultural occupations.

The respondents who were college graduates at the time of this study were placed into occupational groups according to their college major. The seven college students majoring in agriculture were placed in the farm-related occupational group and the 19 college students who were nonagricultural majors were placed in the nonagricultural occupation group.

When those individuals employed in farm-related occupations were stratified by job category, data in Table 2 show that no category represented a high percentage of the total 846 graduates. Farm-related service occupations comprised 3.7 percent, operation and management occupations, 3.4 percent, and agricultural professions, 3.2 percent of the total graduates.

These data indicate that revising vocational agriculture to meet the needs of those individuals in any specific job category would be difficult. However, a vocational agriculture teacher should develop a teaching unit on the job opportunities available to graduates in farm-related occupations.

Table 1. Occupation of graduate compared to that of father

Occupation	Son		Father	
	N	%	N	%
Farm operator	240	28.4	530	62.7
Farm related	133	15.7	66	7.8
Nonagricultural	419	49.5	238	28.1
Military	54	6.4	-	-
Deceased	-	-	12	1.4
Total	846	100.0	846	100.0

Table 2. Job categories of graduates employed in farm-related occupations

Job category	Number	Percentage of total graduates (846)
Services	31	3.7
Operation or management	29	3.4
Agricultural profession	27	3.2
Selling	17	2.0
Farm laborer	15	1.8
Farm manager	7	0.8
College student majoring in agriculture	7	0.8
Total	133	15.7

One hundred and eight individuals, or 12.8 percent, started and left farming since graduation from high school. Seventy-eight, or 32.5 percent, of the farm operators held other jobs before becoming established in farming.

Twenty-four of the 133 graduates in farm-related occupations were farming part-time. Forty-one of the 473 graduates in nonagricultural occupations were part-time farmers. When the 41 part-time farmers were added to the 240 farm operators and to the 133 in farm-related occupations, 414, or 48.9 percent, of the total graduates were connected with agriculture. Nineteen graduates who were in a nonagricultural occupation and were not farming part-time were receiving income from investments in farm land.

Land operated by farmers

Those high school graduates who had completed one year of vocational agriculture were operating a median of 405.5 acres; those with two years, 480 acres; those with three years, 520 acres; and those who had completed four years of vocational agriculture, 580 acres.

The median number of acres of land operated by all farmers was 536.5 acres.

Migration

The 54 graduates who were in military service were not considered in the determination of the extent of migration of the graduates, as they had little choice as to where they were to be stationed. Therefore, the total for the nonagricultural group in the study of migration was 419 instead of 473.

Data in Table 3 show that only 4.1 percent (10) of the farm operators were farming more than 100 miles from the high school that they had

Table 3. Extent of migration by occupation of graduates

Migration	Occupation							
	Farm operators		Farm related		Nonagricultural		Total	
	N	%	N	%	N	%	N	%
Inside county	178	74.2	62	46.6	109	26.0	349	44.1
Outside county but within 100 miles	52	21.7	37	27.8	124	29.6	213	26.9
101 to 300 miles	4	1.6	19	14.3	70	16.7	93	11.7
More than 300 miles	6	2.5	15	11.3	116	27.7	137	17.3
Total	240	100.0	133	100.0	419	100.0	792	100.0

attended. Seventy-four and two-tenths percent (178) of the farm operators were farming in the county where they had lived and 21.7 percent (52) were farming outside the county but within 100 miles of the high school attended.

Those graduates who were employed in farm-related occupations migrated further than those who became farm operators. Forty-six and six-tenths percent (62) were employed within the county, 27.8 percent (37) were employed outside the county but within 100 miles, 14.3 percent (19) were employed 101 to 300 miles from high school attended, and 11.3 percent (15) were employed more than 300 miles from high school attended.

The graduates who were employed in nonagricultural occupations migrated further than either of the other two occupational groups. Only 26 percent (109) were employed within the county, and 29.6 percent (124) were employed outside the county but within 100 miles of the high school attended. Forty-four and four-tenths percent (186) of those in nonagricultural occupations were employed more than 100 miles from the high school attended.

The results of this study indicate that the vocational agriculture teacher can continue to develop the course of study in vocational agriculture around the needs within the county or, at most, within an area that has a radius of 100 miles from the place where he is teaching. Only 4.1 percent of the farm operators and 25.6 percent of those in farm-related occupations were working more than 100 miles from the high school attended. Seventy-four and two-tenths percent (178) of the farm operators were farming in the same county.

Factors Related to Occupational Choices of Graduates

Occupation of father

The occupation of the father was related to the occupation selected by the son, as indicated by data in Table 4. Forty and four-tenths percent (214) of the sons of fathers who were farm operators became farm operators, 16 percent (85) entered farm-related occupations, 37.9 percent (201) entered nonagricultural occupations, and 5.7 percent (30) were in the military service. In comparison, only 7.1 percent (17) of the sons of fathers who were in nonagricultural occupations became farm operators, 11.8 percent (28) of the sons were in farm-related occupations, 72.3 percent (172) entered nonagricultural occupations, and 8.8 percent (21) were in the military service. In other words, 18.9 percent (45) of the sons of the fathers who were in nonagricultural occupations entered an agricultural occupation.

Ten and six-tenths percent (7) of the sons of fathers who were in a farm-related occupation became farm operators, 25.8 percent (17) entered farm-related occupations, 59.1 percent (39) entered nonagricultural occupations, and 4.5 percent (3) were in the military service.

Of the 133 graduates employed in farm-related occupations, 63.9 percent (85) had fathers who were farm operators while the graduates were seniors in high school, 12.8 percent (17) had fathers who were employed in farm-related occupations, 21.1 percent (28) had fathers who were employed in nonagricultural occupations, and the fathers of 2.2 percent (3) were deceased.

The occupation of the high school student's father would be a good criterion to use if the vocational agriculture teacher was going to select his students on the basis of those who will eventually become farm operators or who will enter farm-related occupations. Only 7.1

Table 4. Relationship of the occupation of the son to that of the father[a]

Occupation of son	Occupation of father							
	Farm operator		Farm related		Nonagricultural		Deceased[b]	
	N	%	N	%	N	%	N	%
Farm operator	214	40.4	7	10.6	17	7.1	2	16.7
Farm related	85	16.0	17	25.8	28	11.8	3	25.0
Nonagricultural	201	37.9	39	59.1	172	72.3	7	58.3
Military	30	5.7	3	4.5	21	8.8	-	-
Total	530	100.0	66	100.0	238	100.0	12	100.0

[a]Chi-square value - 121.853. Table value at one-percent level and six degrees of freedom is 16.812. Significant at one-percent level.

[b]Not used in computing chi-square.

percent (17) of the sons of fathers who were in nonagricultural occupations became farm operators, and 11.8 percent (28) of the sons were in farm related occupations.

Total acres of land operated by father

As the size of the father's farm increased, the greater was the tendency for the son to become a farm operator. Only 4.9 percent of the sons of fathers who did not operate any land became farm operators. The percentages of the sons of fathers who operated land and became farm operators were as follows: 1 - 199 acres, 23.4 percent; 200- 499 acres, 30.4 percent; 500 - 999 acres, 43.4 percent; and 1000 acres or more, 46.0 percent.

The number of acres of land farmed by the fathers had little relationship to the tendency of sons to enter farm-related occupations. The percentage of sons who entered farm-related occupations according to the number of acres operated by the fathers were the following: none, 15 percent; 1 - 199 acres, 10.6 percent; 200 - 499 acres, 16.8 percent; 500 - 999 acres, 16.3 percent; and 1000 or more acres, 18 percent.

Years of vocational agriculture

A graduate was more likely to become a farm operator and less likely to enter a nonagricultural occupation as the number of years of vocational agriculture completed increased. Eighteen and six-tenths percent (16) of those graduates who had completed one year of vocational agriculture became farm operators, whereas 20 percent (44) of the graduates who had completed two years, 30.9 percent (105) of those who had completed three years, and 37.5 percent (75) of those who had completed four years of vocational agriculture became farm operators. The percentage of graduates who entered farm-related occupations increased when more than one year of vocational agriculture was completed. However, little diffe-

rence existed between those who completed two, three, or four years of vocational agriculture.

Some students who are entering agricultural occupations are possibly being counseled into other high school courses when they should have remained in vocational agriculture. This statement is based on the fact that 60, or 25 percent, of the 240 graduates who were farm operators had only one or two years of vocational agriculture, and 47, or 35.3 percent of the 133 graduates who had one or two years of vocational agriculture were in farm-related occupations.

Size of high school attended

No significant relationship existed between the size of high school from which an individual was graduated and the occupation entered by the graduate. Thirty-one and one-tenth percent of the graduates from the schools with an enrollment below 130 became farm operators, 30.3 percent from the schools with an enrollment of 130 to 250, and 25.2 percent from the schools with an enrollment above 250 students became farm operators.

Thirteen and seven-tenths percent of the graduates from schools with 250 or above enrollment entered farm related occupations, whereas

15.5 percent in the smaller sized schools and 18.7 percent in the medium sized schools entered these occupations.

As the school size increased, the number of graduates entering nonagricultural occupations increased.

The following observation may explain the fact that the size of the high school from which an individual was graduated did not significantly influence the occupation that he selected. The teachers in the larger high schools are selective in deciding which students should enroll in vocational agriculture, whereas in some smaller high schools vocational agriculture may even be required in order to maintain a department.

Scholastic rank of individual in high school graduating class

Of those who were graduated from high school in the upper and the second grade quartiles, 24.2 and 25.8 percent, respectively, became farm operators; whereas 31 and 31.4 percent of those in the third and the lower quartiles became farm operators. The opposite was true of those graduates entering nonagricultural occupations, as 55.7 percent of those in the second quartile entered these occupations whereas 42.6 percent of those in the third quartile were similarly employed. Approximately 50 percent of those graduates in each the upper and the lower quartiles entered nonagricultural occupations. Eleven and nine-tenths percent of the graduates in the second quartile entered farm-related occupations, whereas 20.6 percent of the graduates in the third quartile entered these occupations. Approximately 15 percent of those graduates in each the upper and the lower quartiles were employed in farm-related occupations.

College attendance

A larger percentage of those who entered farm-related or nonagricultural occupations had attended college than had those who became farm operators.

Forty-four and six-tenths percent of the farm operators had attended college, whereas 68.4 and 67.8 percent of those who entered farm-related or nonagricultural occupations had attended college.

Only 17.1 percent of the farmers were graduated from college, whereas 33.8 percent of those in farm related occupations and 35.3 percent of those in nonagricultural occupations had received a college degree.

Data in Table 5, compare the college majors of the high school graduates to their present occupations. Of the 66 farm operators who had attended one semester or more college but had not received a degree, 45.5 percent (30) had enrolled in college in an agricultural major and 54.5 percent (36) in a nonagricultural major. Forty-one farm operators were graduated from college, of which 70.7 percent (29) had majored in agriculture and 29.3 percent (12) had majored in nonagriculture curricula.

Thirty-seven percent (17) of those individuals in farm-related occupations who had not completed college had enrolled in college in an agricultural major, whereas 63 percent (29) had enrolled in a nonagricultural major. Of those who had graduated, 71.1 percent (32) majored in agriculture, and 28.9 percent (13) had nonagricultural majors.

Some high school graduates who took vocational agriculture while in high school were possibly counseled into selecting a nonagricultural major in college when they were destined to enter an agricultural occupation. Approximately three-fifths of the individuals who were in agricultural occupations and who had had some college training selected a nonagricultural major in college. Of those individuals who were graduated from college and who were in agricultural occupations, 29.1 percent had completed their college training in a nonagricultural major.

Each year more agricultural jobs are available for college graduates

Table 5. College attendance and major in college by occupation of graduates

College attendance	Major	Occupation							
		Farm operator		Farm related		Nonagricultural		Total	
		N	%	N	%	N	%	N	%
One semester or more college but no degree	Agricultural major	30	45.5	17	37.0	23	15.3	70	26.7
	Nonagricultural major	36	54.5	29	63.0	127	84.7	192	73.3
Total		66	100.0	46	100.0	150	100.0	262	100.0
College graduate	Agricultural major	29	70.7	32	71.1	13	7.6	74	28.9
	Nonagricultural major	12	29.3	13	28.9	157	92.4	182	71.1
Total		41	100.0	45	100.0	170	100.0	256	100.0

than there are graduates to f ll these vacancies. The high school graduates who have taken vocational agriculture are the best potential source of college agricultural majors, as numerous research studies have indicated. Consequently, high school personnel should encourage more of those individuals who have had vocational agriculture to major in agriculture in college. Of the 262 individuals in this study who had had some college training but no degree, only 26.7 percent (70) were majoring in agriculture while in college, and only 28.9 percent (74) of the 256 individuals who were graduated from college majored in agriculture.

Evaluation of Course Areas

Data in Figure 1 represent the evaluation of high school course areas by graduates who were farm operators or who were employed in farm-related occupations or in nonagricultural occupations. The mean values computed were secured by coding the evaluation of "very important" as 4, "important" as 3, "little importance" as 2, and "no value" as 1. Those who had not taken a course were excluded from the computation for that course.

The farm operators rated English, speech, and typing lower than did those graduates who were in farm-related or nonagricultural occupations. Farmers rated higher the course areas in foreign language, business and bookkeeping, industrial arts, and vocational agriculture.

Those graduates in farm-related occupations rated the various course areas similarly to the way those in nonagricultural occupations rated them, with the two exceptions of science and vocational agriculture, which those in farm-related occupations rated higher.

The graduates in nonagricultural occupations rated science and vocational agriculture lower than did those who were farm operators or those who were in farm-related occupations. Foreign language, business

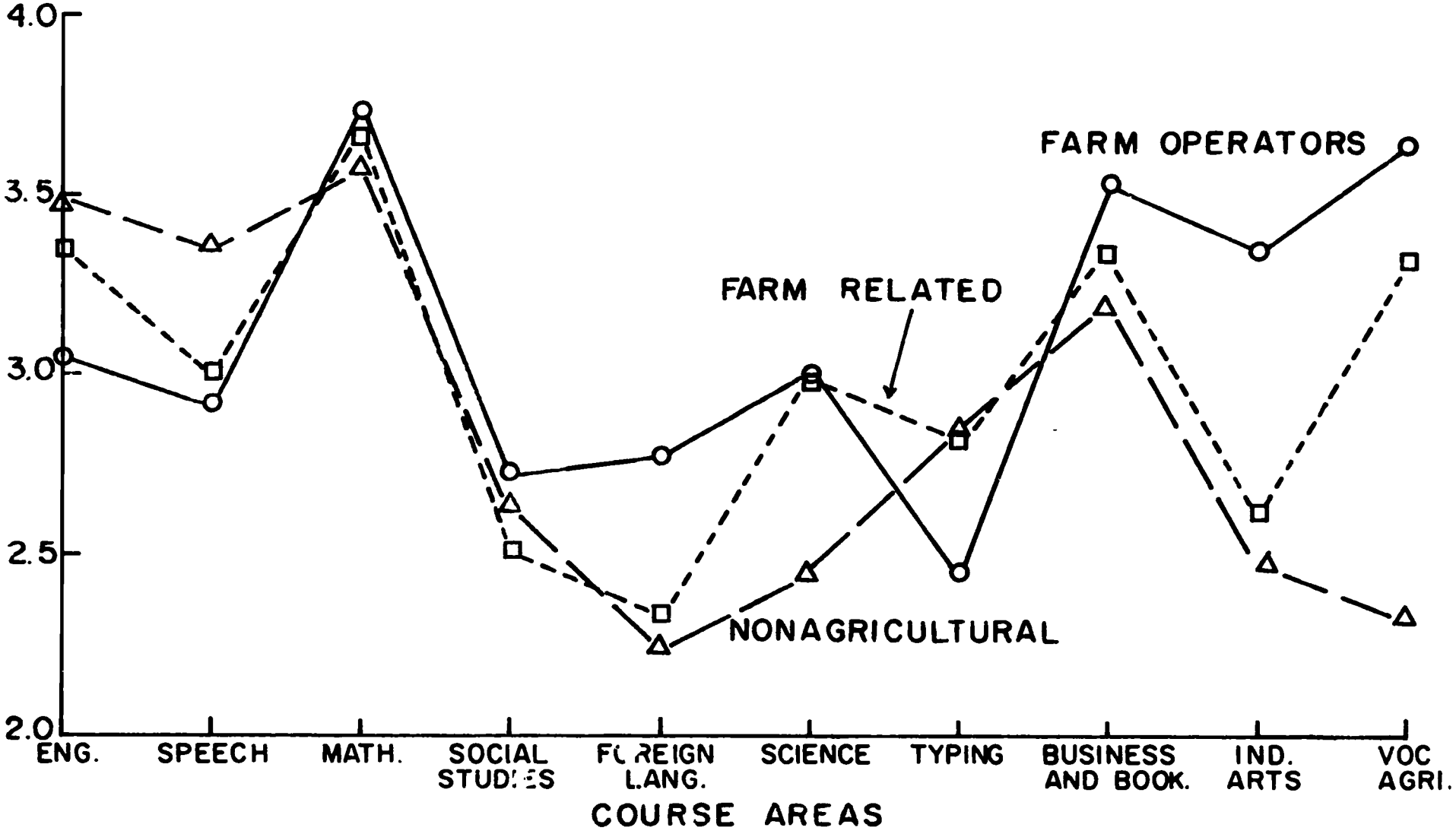

Figure 1. Evaluation of high school course areas by occupation of graduate

and bookkeeping, and industrial arts were also rated lower by those in nonagricultural occupations than by those in the other two occupational groups, but their ratings and those of graduates in farm-related occupations differed little.

The 54 graduates who were in the military service were included in the nonagricultural occupation group in all evaluation analyses. No significant relationship existed between those in the military services and those in other nonagricultural occupations in the evaluations of high school course areas or vocational agricultural activities. Also, since one-half of the 54 graduates in the military services had served over four years, they were probably making a career of the military service and would not be obtaining a civilian occupation in the near future.

Mean value ratings by graduates classified by occupations

The ranking and mean value ratings of the course areas by the individuals in the three occupational groups are presented in Table 6. Mathematics was rated highest by the graduates of all three groups. Those graduates who were farm operators rated mathematics with a mean value of 3.73 compared to 3.66 by those in farm-related occupations and 3.57 by those in nonagricultural occupations.

Vocational agriculture was rated second in importance by the farm operators, fourth by those in farm-related occupations, and ninth by those in nonagricultural occupations. The mean value of 2.32 indicates that those graduates in nonagricultural occupations considered vocational agriculture of "little importance" in their occupations.

Business and bookkeeping was rated third, second, and fourth by farm operators, by those in farm-related occupations, and by those in

Table 6. Mean value ratings of high school course areas by occupation of graduate

Course area	Occupation											
	Farm operators			Farm related			Nonagricultural			Total		
	Rank[a]	N[b]	Mean value[c]	Rank	N	Mean value	Rank	N	Mean value	Rank	N	Mean value
Mathematics	1	240	3.73	1	133	3.66	1	473	3.57	1	846	3.63
Vocational agriculture	2	240	3.63	4	133	3.31	9	473	2.32	5	846	2.84
Business and bookkeeping	3	145	3.52	2	82	3.34	4	296	3.20	3	523	3.31
Industrial arts	4	153	3.34	8	82	2.61	8	305	2.47	7	540	2.74
English	5	240	3.05	2	133	3.34	2	473	3.48	2	846	3.34
Science	6	212	3.00	6	122	3.00	6	445	2.65	6	779	2.80
Speech	7	148	2.91	5	91	3.19	3	334	3.35	4	573	3.21
Foreign language	8	77	2.77	10	36	2.33	10	146	2.24	10	259	2.41
Social studies	9	240	2.72	9	133	2.51	7	473	2.64	9	846	2.64
Typing	10	205	2.44	7	105	2.82	5	403	2.84	8	713	2.72

[a]Placed in rank order according to mean values. [b]Number of farm operators who rated the course.
[c]Determined by coding "very important" with a value of 4, "important", 3; "little importance", 2; and "no value", 1.

nonagricultural occupations, respectively. However, the mean value ranged only from 3.20 to 3.52.

The farm operators rated industrial arts fourth in importance to them in their present occupations, those in farm-related occupations rated it seventh, and those in nonagricultural occupations rated it eighth.

A mean value of 3.05 for English was indicated by the farm operators, who rated it fifth in importance to them. Those in farm-related and nonagricultural occupations rated it second with mean values of 3.34 and 3.48 respectively.

Those individuals in nonagricultural occupations rated science sixth, with a mean value of 2.65, farm operators rated it sixth, with a mean value of 3, and those in farm-related occupations rated it sixth, also with a mean value of 3.

Speech was rated seventh in importance by farm operators, but fifth by those in farm-related occupations, and third by those in nonagricultural occupations. The mean values were 2.91, 3.19, and 3.35, respectively.

The farm operators rated foreign language eighth; those in farm-related and nonagricultural occupations rated it tenth. The mean values were 2.77, 2.33, and 2.24, respectively.

Social studies was rated ninth in importance by the farm operators, ninth by those in farm-related occupations, and seventh by those in nonagricultural occupations.

Those individuals in farm-related and nonagricultural occupations rated typing seventh and fifth, respectively; the farm operators rated it tenth. The mean values were 2.82, 2.84, and 2.44, respectively.

Occasionally some high school personnel propose to substitute industrial arts for vocational agriculture in the high school curriculum. This substitution would not improve the curriculum when all occupational groups are considered. Those graduates in nonagricultural occupations rated industrial arts with a mean value of 2.47 compared to a value of 2.32 for vocational agriculture. However, the farm operators rated industrial arts with a mean value of 3.34, compared to 3.63 for vocational agriculture. Those individuals in farm-related occupations rated industrial arts with a low 2.61 mean value, whereas they rated vocational agriculture with a mean value of 3.31. The mean value ratings were 2.74 for industrial arts and 2.84 for vocational agriculture by all the graduates in this study. In this study, foreign language was possibly rated higher by the farm operators than by those graduates in farm-related or nonagricultural occupations, as the farm operators in Texas hire Latin Americans as farm laborers who may speak Spanish.

Evaluation of Vocational Agriculture

Figure 2 presents the mean value rating of vocational agriculture, eight subject matter units, and five vocational agriculture or FFA activities in which the students could have participated while in high school. The five activities include the supervised farming program, FFA training, FFA leadership teams, agricultural judging teams, and participation in the fat stock shows. The farm operators rated all phases of vocational agriculture higher than did those individuals in farm-related and nonagricultural occupations, except the FFA leadership activities. Those individuals in farm-related occupations rated the leadership activities the highest. The individuals in nonagricultural occupations rated all phases as of "little importance" to them except

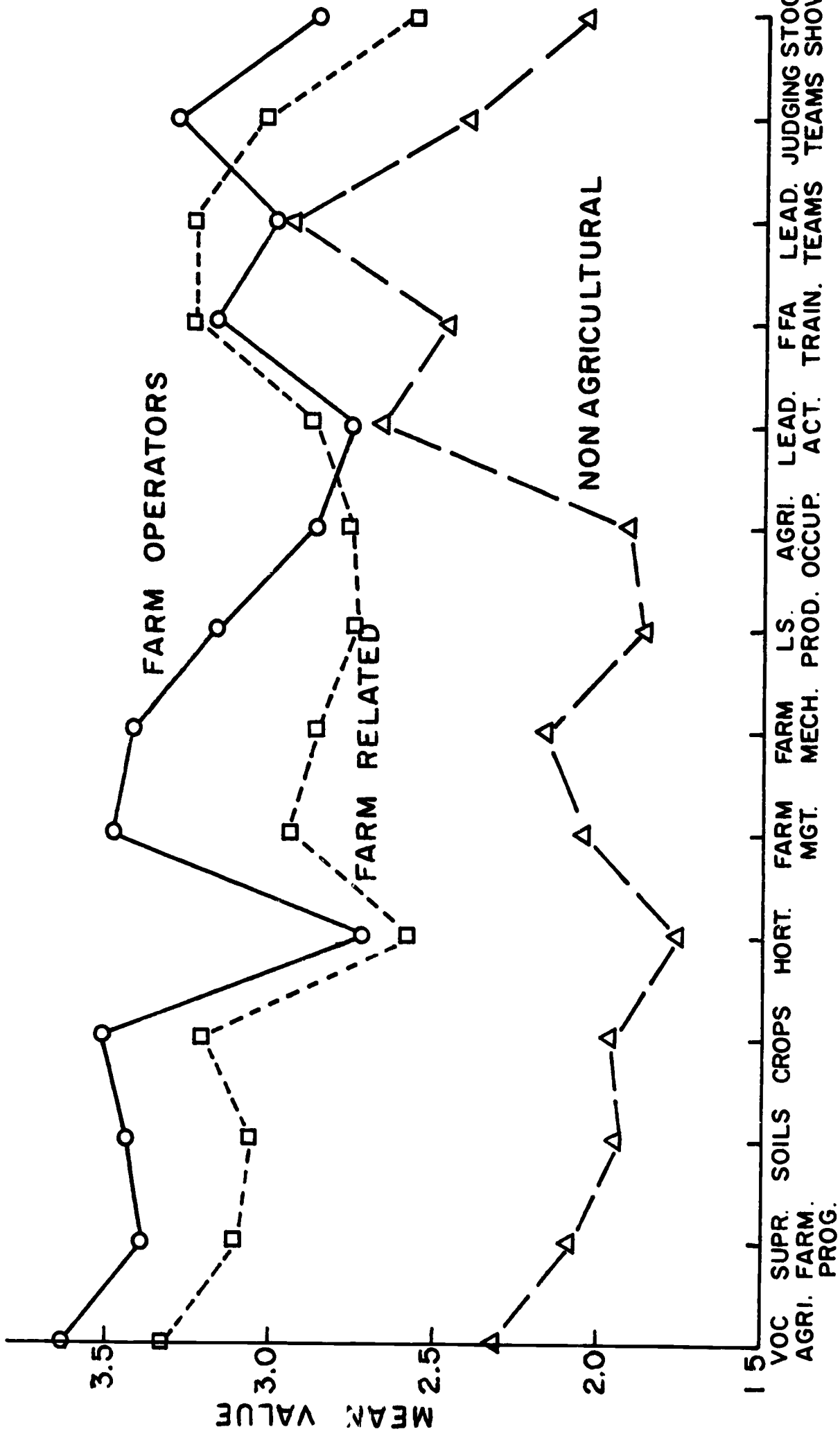

Figure 2. Evaluation of vocational agriculture by occupation of graduate

the FFA leadership activities, to which they gave a rating that approached that given by those in the other two occupational groups.

The mean value ratings of the five vocational agriculture or FFA activities by the graduates in each occupational group is indicated in Table 7.

Subject matter units in vocational agriculture

The mean value ratings of subject matter units in vocational agriculture by graduates according to occupation are presented in Table 8. Farm operators and those in farm-related occupations rated crop production first, whereas those in nonagricultural occupations rated FFA leadership activities first. The mean values for crop production were as follows: farm operators, 3.51; those in farm-related occupations, 3.21; and those in nonagricultural occupations, 1.96.

The farm operators rated farm management second in importance, whereas those in farm-related and nonagricultural occupations rated it third.

The farm operators rated soils third, whereas those in farm-related occupations rated it second, and those in nonagricultural occupations rated it fifth. Farm mechanics was rated fourth by the farm operators, fifth by those in farm-related occupations, and second by those in nonagricultural occupations.

The farm operators rated livestock production fifth, whereas those in farm-related or nonagricultural occupations rated it seventh in importance to them in their occupations.

The subject matter unit on agricultural occupations was rated sixth by those, who stated that it was taught, in all three occupational groups.

Those individuals in nonagricultural occupations rated the unit on

Table 7. Mean value ratings of vocational agriculture activities by occupation of graduate[a]

	Occupation					
	Farm operator		Farm related		Nonagricultural	
	N	Mean value	N	Mean value	N	Mean value
Vocational agriculture	240	3.63	133	3.31	473	2.32
Supervised farming program	240	3.38	133	3.10	473	2.08
FFA training	240	3.17	133	3.24	473	2.46
FFA leadership teams	157	2.99	67	3.24	240	2.95
Agricultural judging teams	165	3.30	85	3.02	283	2.40
Fat stock shows	171	2.86	78	2.56	264	2.03

[a]The mean values for the eight subject matter units, soils through leadership activities, are shown in Table 8.

Table 8. Mean value ratings of subject matter units in vocational agriculture by occupation of graduate

Subject matter unit	Occupation								
	Farm operator			Farm related			Nonagricultural		
	Rank[a]	N[b]	Mean value	Rank	N	Mean value	Rank	N	Mean value
Crop production	1	237	3.51	1	129	3.21	4	462	1.96
Farm management	2	230	3.48	3	117	2.94	3	440	2.04
Soils	3	214	3.44	2	118	3.06	5	440	1.93
Farm mechanics	4	222	3.42	5	128	2.86	2	441	2.16
Livestock production	5	239	3.16	7	132	2.74	7	471	1.86
Agricultural occupations	6	190	2.86	6	112	2.76	6	439	1.91
FFA leadership activities	7	238	2.75	4	130	2.87	1	467	2.66
Horticulture	8	176	2.70	8	98	2.58	8	400	1.75
Total number possible in each category		240			133			473	

[a]Placed in rank order according to mean value ratings.

[b]Number of farm operators rating the subject matter unit.

FFA leadership activities first in importance to them in their occupation, whereas those in farm-related occupations rated it fourth, and the farm operators rated it seventh. This unit was the only one for which the mean value was higher for those in farm-related occupations than for those who were farm operators. The mean values were as follows: those in farm-related occupations, 2.87; farm operators, 2.75; and those in nonagricultural occupations, 2.66.

Horticulture was rated eighth in importance to individuals of all three occupational groups.

The vocational agriculture teachers in Area I should review their course of studies to determine if they are giving proper emphasis to crop production, farm management, soils, and farm mechanics, as these units were rated highest by the farm operators and by those in farm-related occupations.

Future Farmers of America Degrees

The FFA degrees earned by the graduates when in vocational agriculture are compared to their present occupations in Table 9. The Green Hand Degree is the first degree that an FFA member can earn, followed by the Chapter Farmer, the State Farmer, and the American Farmer Degree.

Table 9. FFA degree earned by graduates when in vocational agriculture by occupation[a]

FFA degree	Occupation					
	Farm operator		Farm related		Nonagricultural	
	N	%	N	%	N	%
Green Hand	30	12.5	25	18.8	125	26.4
Chapter Farmer	148	61.7	92	69.2	303	65.1
State Farmer[b]	53	22.1	16	12.0	43	8.1
American Farmer	9	3.7	-	-	2	0.4
Total	240	100.0	133	100.0	473	100.0

[a]Chi-square value - 45.573. Table value at one-percent level and four degrees of freedom is 13.277. Significant at one-percent level.

[b]State Farmers and American Farmers were combined to compute the chi-square value.

Twenty-two and one-tenth percent (53) of the 240 farm operators had received a State Farmer Degree and 3.7 percent (9) had received an American Farmer Degree, whereas only 12.0 percent (16) of the 133 individuals in farm-related occupations and 8.1 percent (43) of the 473 in nonagricultural occupations had received the State Farmer Degree. None of those individuals in farm-related occupations had received an American Farmer Degree, and only two of the individuals in nonagricultural occupations had received this degree.

The percentage of individuals who had received only the Green Hand Degree was highest among those individuals who were in nonagricultural occupations. The percentages of the graduates who held this degree were as follows: farm operators, 12.5 percent; those in farm-related occupations, 18.8 percent; and those in nonagricultural occupations, 26.4 percent.

Little difference existed among the three occupational groups as to the number who had earned the Chapter Farmer Degree. Sixty-one and seven-tenths percent (148) of the farm operators had received this degree, 69.2 percent (92) of those in farm-related occupations, and 65.1 percent (303) of those in nonagricultural occupations had received the Chapter Farmer Degree.

Supervised farming program

Those individuals who were in nonagricultural occupations rated the supervised farming program of "little importance" to them in their occupations. The mean value was 2.08, compared to 3.10 for those graduates in farm-related occupations and 3.38 for those who were farm operators.

Data in Table 10 indicate the mean value ratings of the supervised farming program by the years of vocational agriculture completed in high school and the graduates' present occupation. The mean value increased as the years of vocational agriculture increased from one to three years for the three occupational groups: farm operators, farm-related occupations, and nonagricultural occupations. Those graduates who had completed four years of vocational agriculture and who were in nonagricultural occupations, or who were farm operators, rated the supervised farming program slightly lower than did those who had completed three years. Those in nonagricultural occupations who completed four years of vocational agriculture rated it with a mean value of 2.12, compared to 2.16 for those with three years. The farm operators who had completed four years of vocational agriculture rated the supervised farming program with a mean value of 3.37, compared to 3.49 for those with three years.

Those graduates who were in farm-related occupations and classified

by the number of years of vocational agriculture completed rated the supervised farming program with the following mean values: one year, 2.33; two years, 2.82; three years, 3.21; and four years, 3.44.

Forty percent (96) of the farm operators wished that they had been able to substitute management experience on the farm or in an agricultural business for the supervised farming program, whereas 44.4 percent (59) of those in farm-related occupations and 24.1 percent (114) of those in nonagricultural occupations desired to make this substitution.

Further research should be conducted concerning the desire of some graduates to substitute management and work experience on farms or in agricultural businesses for the vocational agriculture supervised farming program.

Table 10. Mean value ratings of supervised farming program by years of vocational agriculture and occupation

Years of vocational agriculture	Occupation					
	Farm operators		Farm related		Nonagricultural	
	N	Mean value	N	Mean value	N	Mean value
One	16	3.06	9	2.33	61	1.82
Two	44	3.23	38	2.82	138	2.06
Three	105	3.49	52	3.21	183	2.16
Four	75	3.37	34	3.44	91	2.12
Total	240		133		473	

FFA leadership training

Those graduates who were in farm-related occupations had received the most value from their FFA training. However, the farm operators had received nearly the same value, as the mean value computed was 3.17 compared to 3.24 for those in farm-related occupations. The graduates in nonagricultural occupations rated their FFA training considerably lower than did the other two occupational groups. The mean value computed for the nonagricultural group was 2.46.

The number of local, district, area or state FFA offices held is compared to the graduates' present occupation in Table 11. A larger percentage of those graduates who were farm operators had held an FFA office than had those who were in farm-related or nonagricultural occupations. Sixty-six and seven-tenths percent (160) of the 240 farm operators had held an FFA office, whereas only 58.6 percent (78) of those in farm related occupations and 51.6 percent (244) of those in

Table 11. FFA offices held by graduates while in vocational agriculture by occupations[a]

FFA offices held	Occupation					
	Farm operators		Farm related		Nonagricultural	
	N	%	N	%	N	%
None	80	33.3	55	41.4	229	48.4
One local office	89	37.1	45	33.8	156	33.0
More than one local office	52	21.7	25	18.8	74	15.6
District, area or state	19	7.9	8	6.0	14	3.0
Total	240	100.0	133	100.0	473	100.0

[a]Chi-square value - 21.378. Table value at one-percent level and six degrees of freedom is 16.812. Significant at one-percent level

nonagricultural occupations had held an FFA office. The farm operators and those in farm-related occupations had held more district, area or state FFA offices than had those graduates in nonagricultural occupations. The percentages of graduates who had held a district, area, or state office classified by occupation were as follows: farm operator, 7.9 percent; farm-related occupations, 6 percent; and nonagricultural occupations, 3 percent.

Little differences existed among the three occupational groups in the percentages of graduates who had held only one office. The percentage of those who had held more than one local office was highest among those who were farm operators. Twenty-one and seven-tenths percent of the farm operators, 18.8 percent of those in farm-related occupations, and 15.6 percent of those in nonagricultural occupations had held more than one local FFA office.

The mean value rating of FFA training was considerably higher for those graduates who had held one local office than for those who had not held an FFA office. As an example, the farm operators who had not held an FFA office gave their FFA training a mean value rating of 2.85, compared to a mean value of 3.24 given by those who had held a local office. These data indicate that a vocational agriculture teacher should encourage the FFA members to elect as many members as possible to local offices by selecting the officers from the vocational agriculture three and four classes to prevent a member from holding three local offices. Also junior officers, in addition to the regular chapter officers, could be elected. One hundred and fifty-one of the 846 graduates in this study held more than one local office.

The vocational agriculture teacher should also encourage his students

to work for advanced FFA degrees, as the value of FFA training increases as the degrees earned by the student advance from Green Hand to the American Farmer Degree. Those graduates who were farm operators and who had earned the Green Hand Degree while in FFA rated the FFA leadership training with a mean value of 2.87, those who had earned the Chapter Farmer Degree rated it with a mean value of 3.15, and those who had earned the State and American Farmer Degrees rated it with a mean value of 3.37.

FFA leadership contests

In Table 12 is recorded data of the participation of graduates in FFA leadership contests while the graduates were in high school as related to present occupations. Those individuals who were farm operators participated in all the contests more than did those in farm-related or nonagricultural occupations. Likewise, those in farm-related occupations participated slightly more than did those in nonagricultural occupations, except on the Chapter Farmer Farm Skill team. Six and eight-tenths percent of those in farm-related occupations participated on Chapter Farmer Farm Skills teams, compared to 8.2 percent of those in nonagricultural occupations.

The following percentages indicate the participation of the 846 graduates in the leadership contests regardless of occupation; Chapter Farmer Chapter Conducting, 29.7 percent (251); Green Hand Chapter Conducting, 29.6 percent (250); Chapter Farmer Farm Skills, 11.1 percent (94); Green Hand Farm Skills, 7.8 percent (66); Farm Radio, 7.6 percent (64); and FFA Quiz, 6.9 percent (58).

Table 12. Participation of graduates in FFA leadership contests by occupation

Leadership team	Occupation							
	Farm operator		Farm related		Nonagricultural		Total	
	N	%[a]	N	%	N	%	N	%
Chapter Farmer Chapter Conducting	84	35.0	39	29.3	128	27.1	251	29.7
Green Hand Chapter Conducting	82	34.2	41	30.8	127	26.8	250	29.6
Chapter Farmer Farm Skills	46	19.2	9	6.8	39	8.2	94	11.1
Green Hand Farm Skills	24	10.0	12	9.0	30	6.3	66	7.8
Farm Radio	22	9.2	10	7.5	32	6.8	64	7.6
FFA Quiz	18	7.5	9	6.8	31	6.6	58	6.9
Total of those who could have participated	240		133		473		846	

[a]The percentages were computed on the basis of the total number who could have participated in each occupational group.

Less than 12 percent of the graduates had participated in four of the six FFA leadership contests. Also only 65.4 percent of the graduates who were farm operators had participated in any FFA leadership contests, and only approximately one half of those in farm-related and nonagricultural occupations had participated in any FFA leadership contests. FFA leadership contests were rated higher than any other FFA or vocational agriculture activity by those who had participated in them and who were employed in nonagricultural occupations. The mean value rating given these contests by this occupational group was 2.95, compared to 2.99 for farm operators and 3.24 for those graduates in farm-related occupations. The value of

leadership contests to the graduates in each occupational group increased as the number of contests that they participated in increased and as the level of participation increased, with one exception. Those graduates who were in farm-related occupations and who had participated at the area or state level rated the value of leadership contests slightly lower than did those who had participated at only the district level.

It should be emphasized that graduates in farm-related occupations rated FFA training and training received from participating in FFA leadership contests higher than did the individuals in the other two occupational groups. Consequently, agricultural education personnel who are planning new programs for high school graduates in farm-related occupations should continue some type of leadership training for this group.

Agricultural judging contests

The participation of graduates in agricultural judging contests is presented in Table 13. Since numerous graduates participated in more than one contest while they were enrolled in vocational agricusture, the percentage of participation was computed by dividing the total number who could have participated in each occupational group into the number who did participate in each contest. Also, no distinction was made as to whether the participation was on a local, a district, an area, or a state basis.

The farm operators had participated in the various agricultural contests more than those who were in farm-related occupations or those in nonagricultural occupations, with the exception of the participation in the poultry and meats contest. Eight and three-tenths percent of the farm operators had participated in the poultry contest, 12.8 percent of those in farm-related occupations, and 12.3 percent of those in nonagri-

Table 13. Participation of graduates in agricultural judging contests

Contest	Occupation							
	Farm operators		Farm related		Nonagricultural		Total	
	N	%[a]	N	%	N	%	N	%
Livestock	116	48.3	51	38.3	154	32.6	321	37.9
Dairy Cattle	68	28.3	33	24.8	106	22.4	207	24.5
Dairy products	15	6.3	2	1.5	24	5.1	41	4.9
Cotton classing	26	10.8	14	10.5	41	8.7	81	9.6
Crops	46	19.2	24	18.0	66	13.9	136	16.1
Poultry	20	8.3	17	12.8	58	12.3	95	11.2
Meats	12	5.0	13	9.8	38	8.0	63	7.4
Land	19	7.9	7	5.3	31	6.6	57	6.7
Total of those who could have participated	240		133		473		846	

[a] The percentages were computed on the basis of the total number of each occupational group who could have participated.

cultural occupations had participated. Only 5 percent of the farm operators had participated in the meats contest when they were taking vocational agriculture, whereas 9.8 percent of those in farm-related occupations and 8 percent of those in nonagricultural occupations had participated. Only 1.5 percent (2) of the 133 graduates who entered farm-related occupations had participated in the dairy products contest. Six and three-tenths percent of the farm operators and 5.1 percent of those in nonagricultural occupations had participated in this contest.

The participation of the graduates in agricultural judging contests was low, as less than one fifth of the graduates had participated in six

of the eight contests. Also, 37 percent of the graduates had not participated in any of the eight contests. The eight contests rated according to participation by all graduates in descending order were: livestock, 37.9 percent; dairy cattle, 24.5 percent; crops, 16.1 percent; poultry, 11.2 percent; cotton classing, 9.6 percent; meats, 7.4 percent; land, 6.7 percent; and dairy products, 4.9 percent. The graduates who were farm operators and who were in farm-related occupations rated the value of agricultural judging contests considerably higher than did those graduates in nonagricultural occupations. The mean values by occupation were as follows: farm operators, 3.30; those in farm-related occupations, 3.02; and those in nonagricultural occupations, 2.40. With only one exception, the value of agricultural judging contests to the graduates in each occupational group increased as the number of contests that they had participated in increased and as the level of participation increased from local to state. The graduates in a nonagricultural occupation who participated in three or more agricultural contests rated the value of these contests slightly lower than did those who had participated in two contests.

Fat stock shows

The participation of graduates in fat stock shows classified by their present occupation is indicated in Table 14. Seventy-one and two-tenths percent of the farm operators had participated in fat stock shows, whereas only 58.7 percent of those graduates in farm-related occupations and 55.8 percent of those in nonagricultural occupations had participated. Very little difference existed between the three occupational groups in the number who had participated in one or two and three or four fat stock shows. Thirty-three and eight-tenths percent of the farm operators had participated in five or more fat stock shows, compared

Table 14. Participation of graduates in fat stock shows by occupation

Times showed livestock	Occupation							
	Farm operator		Farm related		Nonagricultural		Total	
	N	%	N	%	N	%	N	%
None	69	28.8	55	41.3	209	44.2	333	39.4
One or two	51	21.2	25	18.8	104	22.0	180	21.3
Three or four	39	16.2	28	21.1	77	16.3	144	17.0
Five or more	81	33.8	25	18.8	83	17.5	189	22.4
Total	240	100.0	133	100.0	473	100.0	846	100.0

to only 18.8 percent of those in farm-related occupations and 17.5 percent of those in nonagricultural occupations who had participated in five or more stock shows.

The 846 graduates had participated in fat stock shows as follows: no participation, 39.4 percent (333); one or two times, 21.3 percent (180); three or four times, 17.0 percent (144); and five or more times, 22.4 percent (189).

Graduates in nonagricultural occupations rated the training that they had received in fitting and showing livestock considerably lower than did the farm operators and those in farm-related occupations. The mean value ratings of fat stock shows for the three occupational groups were as follows: farm operators, 2.86; those in farm-related occupations, 2.56; and those in nonagricultural occupations, 2.03.

The number of times a farmer had fitted and shown livestock had a direct relation to the increased value rating of fat stock shows.

The mean values of fitting and showing livestock to farm operators by extent of participation were as follows: one or two times, 2.51;

three or four times, 2.72; five or six times, 2.90; and seven or more times, 3.30.

However, the relationship of the number of times a graduate who was in a farm-related occupation fitted and showed livestock to the value of participating in fat stock shows was not significant. The mean values by the number of times those individuals in farm-related occupations showed livestock were as follows: one or two times, 2.60; three or four times, 2.32; and five or more times, 2.80.

The number of times that a graduate who was a farm operator or who was in farm-related occupations fitted and showed livestock did not significantly affect his opinion concerning the value of the supervised farming program and had little effect on the value of the livestock production unit.

SUMMARY

The objectives of this study were to determine the present occupational status of West Texas high school graduates of 1953, 1954 and 1955 who had completed one or more years of vocational agriculture. Other objectives were to determine factors related to occupational choices of graduates; to evaluate the high school course areas and the vocational agriculture programs as related to the occupations of the graduates; and to determine possible changes that could be made in vocational agriculture in order to meet the needs of male high school graduates.

The data used in this study were secured from the permanent records of 45 high schools and from completed questionnaires obtained from 846 graduates. The number of students represented 70.4 percent of the graduates whose addresses were available.

Twenty-eight and four-tenths percent (240) of the graduates were farm operators, 15.7 percent (133) were employed in farm-related occupations, 59.5 percent (419) had entered nonagricultural occupations, and 6.4 percent (54) were in the military services.

The following factors were related to the occupational choices of the graduates at the one-percent level of significance when tested by e of the chi-square statistical method: occupation of the father, acres of land operated by the father while the son was in high school, years of vocational agriculture completed by the high school graduate, and the graduate's subsequent attendance at college. In other words, if the father was in an agricultural occupation, and as the size of the farm operated by the father increased and as the number of years of vocational agriculture completed by the graduate increased, the more likely

a graduate would enter an agricultural occupation. However, only 17.1 percent of the respondents who became farm operators graduated from college compared to one-third of those respondents who were employed in farm-related and nonagricultural occupations. The scholastic rank of the high school graduate was significant at the five-percent level. A slightly lower percentage of those individuals graduating in the upper half of their graduating class became farm operators than those graduating in the lower half. The relation of the size of high school attended and the occupational choice of the graduate was not significant.

Approximately three fifths of the 846 graduates had attended college. One half of those who had attended college had received a degree.

The graduates, not classified by occupation, rated the high school course areas in the following descending order: mathematics, English, business and bookkeeping, speech, vocational agriculture, science, industrial arts, typing, and foreign language. The farm operators rated vocational agriculture second and those graduates in farm-related occupations rated it fourth.

The farm operators rated the eight subject-matter units in vocational agriculture in the following descending order: crop production, farm management, farm mechanics, livestock production, soils, agricultural occupations, FFA leadership activities, and horticulture. The graduates in farm-related occupations rated soils and FFA leadership activities higher than did the farm operators.

The supervised farming program was rated "important" to the farm operators and those in farm-related occupations but of "little importance" to those in nonagricultural occupations.

Graduates who were in farm-related occupations or were farm opera-

tors received the most value from their FFA training indicating its value as "important". The graduates in the three occupational groups who participated in FFA leadership contests rated the training as "important" in their present occupations.

The graduates who were farm operators and who were in farm-related occupations rated the value of agricultural judging contests considerably higher than did those graduates in nonagricultural occupations. Graduates who were farm operators had greater participation and received more value from training received in fitting and showing livestock than did the other groups.

The implications of the findings of this study for vocational agriculture in the Panhandle-Plains area of Texas are as follows:

Pilot studies for senior students who plan to enter farm-related occupations are necessary to determine if management experience on a farm or in an agricultural business would be beneficial to students entering these occupations.

Teachers may need to be more selective in the students who enroll in vocational agriculture as those students who entered nonagricultural occupations rated most phases of their vocational agriculture training as of "little importance" in their occupations.

The vocational agriculture teacher and the guidance director should share in providing occupational guidance since nearly one-third of the students in this study who had entered agricultural occupations had completed only one or two years of vocational agriculture, and since approximately three-fifths of the individuals who were in agricultural occupations and who had had some college training had selected nonagricultural majors in college.

The vocational agriculture teachers in Area I may need to review their courses of studies to determine if they are giving proper emphasis to crop production, farm management, soils, and farm mechanics, as these units were rated most important by those in agricultural occupations. The usefulness of content and effectiveness of instruction of the other units in the courses of studies should be evaluated and improved.

Supervised farming programs that are of large enough scope to challenge all students are needed as the farm operators and those in farm-related occupations rated the farming program as "important" in their present occupations.

Vocational agriculture teachers should make maximum use of the FFA and continue to encourage students to obtain advanced degrees and to participate in FFA activities as leadership training was rated as "important" to all graduates.

The vocational agriculture teachers may need to evaluate carefully each FFA and agricultural judging contest as the participation in some contests was extremely low.

Young farmer programs appear to be needed in most schools, as the farm operators in this study, whose average age was 27, farmed a median of 536.5 acres. It is the vocational agriculture teacher's responsibility to help young farmers obtain information to make their farms efficient units.

APPENDIX A: FACTORS RELATED TO THE OCCUPATIONAL CHOICES OF GRADUATES

(See pages 12-17 for discussion of results)

Null hypothesis	Degrees of freedom[a]	Chi-square value	Level of significance in percent
No relationship exists between the occupation of the father and the occupation of the son that could not be attributed to random sampling differences	6	121.853	1
No relationship exists between the number of acres of land operated by the father while the son was in high school and the son's present occupation	12	130.647	1
No relationship exists between the years of vocational agriculture completed by the graduate while in high school and his present occupation	9	29.744	1
No relationship exists between the size of high school attended by the graduate and his present occupation	6	11.395	Not significant
No relationship exists between the grade quartile obtained by the student while in high school and his present occupation	9	17.878	5
No relationship exists between college attendance of graduate and his present occupation	6	46.005	1

[a]Degrees of freedom

Degrees of freedom	Table value at five-percent level	Table value at one-percent level
6	12.592	16.812
9	16.919	21.666
12	21.026	26.217

APPENDIX G: EVALUATION OF VOCATIONAL AGRICULTURAL ACTIVITIES

(See Table 7, Page 27, for mean values)

Null hypothesis	Degrees of freedom	Chi-square value	Level of significance in percent
No difference existed between those graduates who were farm operators and those who were in farm-related occupations and the value they placed on the supervised farming program in their present occupation	2	10.283	1
No difference in the value of FFA training existed between those who were farm operators and those who were in farm related occupations	2	1.017	Not significant
No difference in the value of leadership contests to participants existed between those who were farm operators, those who were in farm-related occupations and those in nonagricultural occupations	4	10.630	5
No difference existed between those graduates who were farm operators and those who were in farm-related occupations and the value of agricultural judging contests in their present occupations	2	8.275	5
No difference existed between the farm operators and those in farm-related occupations in the value of fitting and showing livestock in their present occupations	3	8.04	5

[a] Degrees of freedom	Table value at five-percent level	Table value at one-percent level
2	5.991	9.210
3	7.815	11.341
4	9.488	13.277

APPENDIX C: ANALYSIS OF VARIANCE IN VALUES OF VOCATIONAL AGRICULTURE SUBJECT MATTER UNITS EXPRESSED BY GRADUATES WHO WERE FARM OPERATORS OR EMPLOYED IN FARM-RELATED OCCUPATIONS

(See pages 24-29 for discussion of results)

Source of variation	d.f.	s.s.	m.s.	F
Occupation[a]	1	45.75	45.75	10.40
Error (a)	264	1,162.23	4.40	
Subject matter units[b]	7	334.75	47.82	53.97
Occupation X subject matter units[c]	7	38.61	5.52	6.23
Within	1848	1,637.39	0.886	
Total	2127	3,218.73		

[a]For occupation F1, 264 = $\frac{45.75}{4.40}$ = 10.40**. Table value at one-percent level is 6.74.

[b]For subject matter units F7, 1848 = $\frac{47.82}{0.886}$ = 53.97**. Table value at one-percent level is 2.64.

[c]For occupation X subject matter units F7, 1848 = 5.52 = 6.23**. Table value at one-percent level is 2.64.

**Significant at one-percent level.

The data was treated with a factoral analysis of variance design to determine if any differences existed between the way farm operators and those in farm-related occupations rated the vocational agriculture subject matter units that they took while in high school. The graduates in nonagricultural occupations were not included in this analysis, as their ratings of the various units were obviously lower than those of graduates who were farm operators or who were in farm-related occupations, and this difference was not of interest to the author.

To compute the analysis of variance, the ratings of the graduates were coded as follows: "very important", 5; "important", 4; "little importance", 3; "no value", 2; and "was not taught", 1. In reviewing the results of this analysis, one should remember that all graduates in farm-related occupations and the random sample of 133 farm operators were included in the analysis, including those who said that a unit "was not taught". The numbers of the 846 graduates who stated that subject matter units were not taught were as follows: soils, 74; crops, 18; horticulture, 172; farm management, 59; farm mechanics, 55; livestock production, 4; agricultural occupations, 105; and leadership activities, 11.

The analysis of variance program available for the computer was developed for a balanced design. Consequently, a sample of 133 farm operators was randomly selected from the total of 240 farm operators in order that the number of farm operators would be the same as that of graduates who were in farm-related occupations, 133. The factors considered in this analysis were the two occupations and the eight subject matter units. The coded rating by a graduate for each subject matter unit was punched on I.B.M. cards. The total number of cards punched was 2128, as there were two occupations, eight subject matter units, and 133 replications (occupation x unit x replication; 2 x 8 x 133).

The null hypothesis that no difference existed between the way farm operators and those in farm-related occupations rated vocational agriculture courses that could not be attributed to random sampling differences was tested. The F value of 10.40 with one and 264 degrees of freedom for occupations was significant at the one-percent level. Therefore, evidence existed that a significant difference existed between the way farm operators and those in farm-related occupations rated vocational agriculture. The mean values of vocational agriculture rated by the farm operators was 3.91 and 3.61 by those in farm-related occupations.

The null hypothesis that no difference existed between the way the eight subject matter units were rated by those graduates who were in agricultural

occupations that could not be attributed to random sampling differences was tested. The F value of 53.97 with seven and 1848 degrees of freedom was significant at the one-percent level, and thus the null hypothesis was rejected. The mean value for each subject matter unit was as follows: soils, 3.91; crops, 4.30; horticulture, 2.95; farm management, 3.97; farm mechanics, 3.94; livestock production, 3.96; agricultural occupations, 3.33; and FFA leadership activities, 3.66.

The occupation and subject matter interaction was tested. The null hypothesis that no difference existed between the way farm operators and those in farm-related occupations rated the eight subject matter units taught in vocational agriculture that could not be attributed to random sampling differences was tested. The F value of 6.23 with seven and 1848 degrees of freedom was significant at the one-percent level, and thus the null hypothesis was rejected. Therefore, evidence showed that a difference did exist between the way farm operators and those in farm-related occupations rated the eight subject matter units taught in vocational agriculture. The differences in mean values between the way that the farm operators and those in farm-related occupations rated the subject matter units were as follows: soils, 0.40; crops, 0.37; horticulture, 0.11; farm management, 0.76; farm mechanics, 0.37; livestock production, 0.48; agricultural occupations, 0.02; and FFA leadership activities, 0.14. The farm operators rated all the subject matter units higher than did those in farm-related occupations, except the unit of FFA leadership activities.