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ABSTRACT

The study was conducted to determine if there are differences in selected factors related to the educational and occupational plans of vocational agriculture students who plan to enter on-farm agricultural occupations, those who plan to enter off-farm agricultural occupations, and those who plan to enter non-agricultural occupations. The comparison is based on their occupational plans; differences in selected personal, family, and community variables related to occupational decision-making; and differences in level of achievement in agriculture based on the Peterson Agribusiness Achievement Test. The population for the study consisted of 623 junior and senior students enrolled in 30 high schools in Iowa with vocational agriculture programs. Data were collected using a personal, family, and community data questionnaire and a four-part agribusiness achievement test. A detailed report of the returns is presented with supporting tables, item-by-item discussion, and statistical analysis. The findings indicated similarities and differences in various factors associated with occupational decision-making among vocational agriculture students grouped according to their stated occupational plans. Thirteen recommendations are discussed and references are included. The questionnaire, communications, list of participating schools, and tables of means and standard deviation for the research instruments are appended. (Author/EC)

A STUDY OF FACTORS ASSOCIATED WITH THE OCCUPATIONAL PLANS OF IOWA VOCATIONAL AGRICULTURE STUDENTS

by

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The research reported herein was completed as a part of Project 1879 of the

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INTRODUCTION

It may be assumed that the basis upon which vocational agriculture programs are built in the secondary schools of Iowa is for the preparation of youth for future employment. This employment may come immediately following graduation from high school or upon completion of further training in a postsecondary institution. When these young people have completed their educational and vocational training, they must select an occupation that will fulfill their occupational aspirations, develop their perceived social image and match the level of competencies which they possess.

Due to the rapidly changing agricultural industry, career choices for students of vocational agriculture have more than doubled in the past decade. These employment opportunities occur in on-farm agricultural occupations, off-farm agricultural occupations and in non-agricultural occupations created in support of this massive industry.

The task of assisting these young people in establishing and achieving occupational goals becomes increasingly difficult due to the latitude of occupations from which they have to choose and the importance placed on job satisfaction. Instructors of agriculture, school administrators, vocational guidance counselors, and other teachers who play a major role in preparing youth for job entry, must be aware of the decisions these students must make and of the capabilities they possess. Assisting these young people in making meaningful and realistic decisions regarding their future occupational plans should continue to be a vital concern to educators.

Statement of the Problem

A rapidly expanding agricultural industry has created job opportunities non-existant in the past. The expansion of these occupational choices has brought about a need to determine the occupational goals of junior and senior vocational agriculture students and factors which may be related to their occupational plans upon completion of their formal education.

A knowledge of the tentative occupational plans of junior and senior vocational agriculture students and an assessment of factors which are related to these occupational plans should provide the basis for developing programs, materials, and curricular offerings to assist youth in establishing career objectives.

This study was designed to determine the occupational plans of junior and senior vocational agriculture students and assess factors which may be related to their occupational plans upon completion of their formal education.

Purpose of Study

The primary purpose of this study was to determine if there are differences in selected factors related to the occupational plans among the following groups of high school students:

Group 1 - Vocational agriculture students who plan to enter an on-farm agricultural occupation.

Group 2 - Vocational agriculture students who plan to enter an off-farm agricultural occupation.

Group 3 - Vocational agriculture students who plan to enter a non-agricultural occupation.

The specific objectives of this research were as follows:

A. Determine the occupational plans of high school junior and senior vocational agriculture students.

B. Determine if there are differences in selected personal, family and community variables related to occupational decision-making, among high school vocational agriculture students grouped according to their stated occupational plans upon completion of their formal education.

C. Determine if there are differences in level of achievement in agriculture as measured by the Peterson Agribusiness Achievement Test, among high school vocational agriculture students grouped according to their stated occupational plans upon completion of their formal education.

Independent Variables

The following independent variables were identified for this research study:

A. Personal, family and community variables related to occupational decision-making.

B. Level of achievement in the following areas of agriculture:

1. Animal science.
2. Plant and soil science.
3. Agricultural mechanics.
4. Agricultural management.

Dependent Variables

The following dependent variables were identified for this study:

A. Planning to enter an on-farm agricultural occupation upon

completion of their formal education.

B. Planning to enter an off-farm agricultural occupation upon completion of their formal education.

C. Planning to enter a non-agricultural occupation upon completion of their formal education.

Hypotheses

The research hypotheses identified for this study are as follows:

Hypothesis 1. There will be significant differences in selected personal, family and community variables related to occupational decision-making among high school vocational agriculture students grouped according to their stated occupational plans. The variables to be tested were as follows:

1. High school class.
2. Semesters of vocational agriculture completed.
3. Grades received in vocational agriculture.
4. Grades received in all courses.
5. Participation in high school activities.
6. Place of residence.
7. Occupational plans.
8. Years of posthigh school education planned.
9. Work experience while in high school.
10. "Significant others" influencing occupational choice.
11. Amount of certainty regarding occupational choice.
12. Amount of thought given to occupational choice.
13. Ability for occupation planning to enter.
14. Amount of work experience in occupation planning to enter.

15. Knowledge of occupation planning to enter.
16. Value of high school training for occupation planning to enter.
17. Amount of training high school has provided for occupation planning to enter.
18. Amount of encouragement to continue education received from father.
19. Amount of encouragement to continue education received from mother.
20. Amount of encouragement received from father to attend a postsecondary area vocational school.
21. Amount of encouragement received from father to attend a four-year college or university.
22. Amount of encouragement received from mother to attend a post-secondary area vocational school.
23. Amount of encouragement received from mother to attend a four-year college or university.
24. Amount of encouragement received from vo-ag instructor to attend a postsecondary area vocational school.
25. Amount of encouragement received from vo-ag instructor to attend a four-year college or university.
26. Value of vo-ag courses completed in preparing for occupation planning to enter.
27. Value of FFA program in preparing for occupation planning to enter.
28. Value of vo-ag courses completed in preparing to attend a postsecondary area vocational school.

29. Value of vo-ag courses in preparing to attend a four-year college or university.
30. Value of high school courses in preparing to attend a post-secondary area vocational school.
31. Value of high school courses in preparing to attend a four-year college or university.
32. Value of supervised occupational experience program in preparing for occupation planning to enter.
33. Chances of success as student attending a four-year college or university in animal science.
34. Chances of success as a student attending a four-year college or university in plant and soil science.
35. Chances of success as a student attending a four-year college or university in agricultural mechanics.
36. Chances of success as a student attending a four-year college or university in agricultural management.
37. Chances of success as a student attending a postsecondary area vocational school in animal science.
38. Chances of success as a student attending a postsecondary area vocational school in plant and soil science.
39. Chances of success as a student attending a postsecondary area vocational school in agricultural mechanics.
40. Chances of success as a student attending a postsecondary area vocational school in agricultural management.

Hypothesis 2. There will be significant differences in Animal Science Achievement Test scores among high school vocational agriculture students

grouped according to their stated occupational plans.

Hypothesis 3. There will be significant differences in Plant and Soil Science Achievement Test scores among high school vocational agriculture students grouped according to their stated occupational plans.

Hypothesis 4. There will be significant differences in Agricultural Mechanics Achievement Test scores among high school vocational agriculture students grouped according to their stated occupational plans.

Hypothesis 5. There will be significant differences in Agricultural Management Achievement Test scores among high school vocational agriculture students grouped according to their stated occupational plans.

EXECUTION OF STUDY

The primary objective of this research study was to determine if there are differences in selected factors related to the occupational plans among vocational agriculture students who planned to enter an on-farm agricultural occupation; vocational agriculture students who planned to enter an off-farm agricultural occupation; and vocational agriculture students who planned to enter a non-agricultural occupation.

Design

The design for this research study was a cross-sectional survey where standardized information was collected from a randomly drawn sample of schools offering vocational agriculture programs.

Population

The population for this study consisted of all junior and senior students enrolled in secondary vocational agriculture programs in Iowa. According to the Summary of Education Activities in Agriculture/Agribusiness

provided by Local School Districts there were a total of 231 high school vocational agriculture departments with an enrollment of 15,589 during the 1973-74 school year.

Sample

A sample of thirty public schools from all of the high schools in Iowa which provided vocational agriculture programs in 1974-75 were selected to participate in the research study.

In completing the instruments, each student was expected to state his or her occupational plans upon completion of all formal education. Based upon the student's occupational plans, the following groups were identified and studied:

Group 1 - Vocational agriculture students who planned to enter an on-farm agricultural occupation.

Group 2 - Vocational agriculture students who planned to enter an off-farm agricultural occupation.

Group 3 - Vocational agriculture students who planned to enter a non-agricultural occupation.

Instrumentation

The instruments used in collecting the data for this study are as follows:

A. Personal, Family and Community Data Related to Educational and Occupational Plans of Iowa Vocational Agriculture Students (see Appendix A). This instrument was developed to assess the personal, family and community variables related to the occupational plans of high school vocational agriculture students The variables which this instrument is designed to assess are as follows:

1. High school class.
2. Semesters of vocational agriculture completed.
3. Grades received in vocational agriculture.
4. Grades received in all courses.
5. Participation in high school activities.
6. Place of residence.
7. Occupational plans.
8. Years of posthigh school education planned.
9. Work experience while in high school.
10. "Significant others" influencing occupational choice.
11. Amount of certainty regarding occupational choice.
12. Amount of thought given to occupational choice.
13. Ability for occupation planning to enter.
14. Amount of work experience in occupation planning to enter.
15. Knowledge of occupation planning to enter.
16. Value of high school training for occupation planning to enter.
17. Amount of training high school has provided for occupation planning to enter.
18. Amount of encouragement to continue education received from father.
19. Amount of encouragement to continue education received from mother.
20. Amount of encouragement received from father to attend a postsecondary area vocational school.
21. Amount of encouragement received from father to attend a four-year college or university.

22. Amount of encouragement received from mother to attend a postsecondary area vocational school.
23. Amount of encouragement received from mother to attend a four-year college or university.
24. Amount of encouragement received from vo-ag instructor to attend a postsecondary area vocational school.
25. Amount of encouragement received from vo-ag instructor to attend a four-year college or university.
26. Value of vo-ag courses completed in preparing for occupation planning to enter.
27. Value of FFA program in preparing for occupation planning to enter.
28. Value of vo-ag courses completed in preparing to attend a postsecondary area vocational school.
29. Value of vo-ag courses completed in preparing to attend a four-year college or university.
30. Value of high school courses in preparing to attend a post-secondary area vocational school.
31. Value of high school courses in preparing to attend a four-year college or university.
32. Value of supervised occupational experience program in preparing for occupation planning to enter.
33. Chances of success as student attending a four-year college or university in animal science.
34. Chances of success as student attending a four-year college or university in plant and soil science.

35. Chances of success as student attending a four-year college or university in agricultural mechanics.
36. Chances of success as a student attending a four-year college or university in agricultural management.
37. Chances of success as a student attending a postsecondary area vocational school in animal science.
38. Chances of success as a student attending a postsecondary area vocational school in plant and soil science.
39. Chances of success as a student attending a postsecondary area vocational school in agricultural mechanics.
40. Chances of success as a student attending a postsecondary area vocational school in agricultural management.

B. Agribusiness Achievement Test. This instrument developed by Peterson, et al. (7) was selected to assess vocational agriculture students' achievement in the following areas of agriculture:

1. Animal Science.
2. Plant and Soil Science.
3. Mechanics.
4. Management.

Research Procedures

A sample of thirty public schools from all of the high schools in Iowa which provided vocational agriculture programs in 1974-75 were selected to participate in this research study. Using the 1974-75 list of vocational agriculture departments, schools were listed according to the area vocational school district in which they were located. Using a table of random numbers, two high schools were selected at random from each

of the fifteen area school districts to comprise the sample of thirty schools selected to participate in the research.

Upon selection of the sample, the vocational agriculture instructor of each school was informed of the study by letter (see Appendix B) to seek agreement for his vocational agriculture department to participate in the study. Alternative schools were selected to replace those who would not agree to participate in the study. Only two schools from the original sample of thirty schools did not agree to participate.

Upon receiving approval from thirty schools, (see Appendix C) the research project staff contacted the vocational agriculture instructors of these schools to provide detailed instructions for administering the questionnaire and Agribusiness Achievement Test (see Appendix D).

Each vocational agriculture department participating in the study was mailed a sufficient number of questionnaires and answer sheets for all of the junior and senior students who were currently enrolled in the vocational agriculture classes. The vocational agriculture instructors were asked to administer these instruments during the regular class time to all junior and senior vocational agriculture students between the dates of December 9, 1974 to January 17, 1975. Because of differing lengths and time of class periods among the schools, no attempts were made to coordinate any more than the order of instrument administration.

It was also requested that the instruments be administered on five different days. The first being the questionnaire, followed by the four parts of the Achievement Test in the following order:

1. Animal Science.
2. Plant and Soil Science.

3. Mechanics.

4. Management.

Each of the parts of the Achievement Test took approximately fifty minutes, forty minutes for actual testing.

Each instructor was provided a complete set of standarized directions for the administration of the Agribusiness Achievement Test. To further assist in administering the instruments, the following check list of data collection was provided each instructor:

Check List of Data Collection:

____(1) Administer the instruments, both the questionnaire and the achievement test to your high school junior and senior vocational agriculture students sometime between December 9 and January 17.

____(2) Administer questionnaire - will take approximately 30 minutes.

____(3) Have each student complete the Name Block, Grade, Sex, Birth date and School information on his answer sheet. Specific directions for this are given in "The Pre-Test Session" part of the Test Administration directions.

____(4) Administer the Achievement Test - probably four different days would work best.

a) Animal Science Test - allow approximately fifty minutes.

b) Plant and Soil Science Test - allow approximately fifty minutes.

c) Mechanics Test - allow approximately fifty minutes.

d) Management Test - allow approximately fifty minutes.

____(5) Return test booklets, answer sheets and completed questionnaires to the Agricultural Education Department, Iowa State University.

_____(6) Review test results with your students - sometime in February.

After all of the instruments were completed by all junior and senior students in vocational agriculture, the test booklets, answer sheets and completed questionnaires were returned to the Department of Agricultural Education, Iowa State University research project staff to begin scoring and analyzing the data.

In completing the questionnaire, each student was requested to indicate his/her plans for occupational entry upon graduation from high school. (Item number eight of the Personal, Family and Community Data Instrument). A student's plans for occupational entry upon completion of formal education became the criteria for which the following groups were identified and studied:

Group 1 - Vocational agriculture students who planned to enter an on-farm agricultural occupation.

Group 2 - Vocational agriculture students who planned to enter an off-farm agricultural occupation.

Group 3 - Vocational agriculture students who planned to enter a non-agricultural occupation.

Analysis of Data

Data from the instruments were tabulated, scored and transferred to IBM cards. The Agribusiness Achievement Tests were hand scored by the research project staff using scoring keys provided by the publisher of the tests. The raw scores of each test were transformed to standard scores for analysis.

The data from these instruments were analyzed utilizing computer facilities at the Computation Center, Iowa State University, Ames, Iowa.

The computer programs used in the statistical treatment were designed and prepared by the statistical consultants and the project research assistant. The following programs were utilized:

1. SPSS Correlation and Regression Programs.
2. Helarctos II Regression Program.

PRESENTATION AND ANALYSES OF DATA

The analyses of the data presented are arranged in a manner which brings attention to the objectives and hypotheses formulated for this research study. The analyses of the data are presented under the following headings:

1. Occupational plans of junior and senior vocational agriculture students.
2. Personal, family and community variables related to the occupational plans of vocational agriculture students.
3. Agribusiness Achievement Test scores.

The statistical analyses of the data consisted of the use of the following statistics: chi-square distribution and analysis of variance using the F ratio. All hypotheses were tested at the .05 level of probability.

Occupational Objectives of Junior and Senior Vocational Agriculture Students

Part I of Questionnaire

One of the primary objectives of this research study was to determine the occupational plans of junior and senior vocational agriculture students participating in the study. Item number eight of the questionnaire

(Appendix A) requested students to complete the following statement:

The occupation that I plan to enter is (indicate particular type of job)_____.

The responses were then divided into these job categories by the research staff. These categories are as follows:

1. Students who planned to enter an on-farm agricultural occupation.
2. Students who planned to enter an off-farm agricultural occupation.
3. Students who planned to enter a non-agricultural occupation.

The number of junior and senior vocational agriculture students and percentage of combined grade level grouped by occupational plans are presented in Table 1.

Table 1. Number of junior and senior students and percentage of combined grade levels grouped by occupational plans

Group number	Student group	Grade level			
		Junior	Senior	Total	Percent
1	Students who planned to enter an on-farm agricultural occupation.	197	140	337	54.4
2	Students who planned to enter an off-farm agricultural occupation.	58	51	109	17.6
3	Students who planned to enter a non-agricultural occupation.	97	76	173	28.0
	Total	352	267	619	100.0

Approximately 28 percent of the junior and senior vocational agriculture students surveyed in this study indicated they planned to seek a non-agricultural occupation upon completion of their formal education. About 18 percent of the participants planned to enter an off-farm agricultural occupation. A surprisingly 54.4 percent of the students sampled in this study indicated they planned to enter an on-farm agricultural occupation upon completion of their formal education. Of the total number of students surveyed, over 81 percent are already living on farms.

Personal, Family and Community Variables Related to the Occupational Plans of Vocational Agriculture Students

Research hypothesis 1 stated that there will be significant differences in selected personal, family and community variables related to occupational decision-making among high school vocational agriculture students grouped according to their stated occupational plans upon completion of their formal education.

The data utilized in testing this hypothesis were collected using the questionnaire which appears in Appendix A. A total of 40 variables were assessed from the data provided by this questionnaire. Four variables were analyzed using chi-square and 36 variables were analyzed using analysis of variance with the F ratio.

Grade level

The students selected to participate in this study were junior and senior vocational agriculture students from the thirty participating schools.

Item number two of the questionnaire requested that participating students indicate their grade level in high school. The frequency and

percentage of responses to this variable for each of the student groups identified are presented in Table 2. The data collected for this

Table 2. Chi-square test for relationship between student's grade level and student's occupational plans

Grade level	Frequency of responses by groups[a]							
	Group 1		Group 2		Group 3		Totals	
	No.	%	No.	%	No.	%	No.	%
Junior	197	58.5	58	53.2	97	56.1	352	56.9
Senior	140	41.5	51	46.8	76	43.9	267	43.1
Totals	337	100.0	109	100.0	173	100.0	619	100.0
	Chi-square = 0.98 ns							

[a]Group 1 = Students who planned to enter an on-farm agricultural occupation.

Group 2 = Students who planned to enter an off-farm agricultural occupation.

Group 3 = Students who planned to enter a non-agricultural occupation.

variable were analyzed using the chi-square statistic to determine if there is a significant relationship between student's grade level and student's occupational plans. The chi-square value of .98 is not significant at the .05 level of probability.

Semesters of vocational agriculture completed

Students were requested to indicate the number of semesters of vocational agriculture they had completed in including the current semester. The data collected from this item of the questionnaire were analyzed using a three-way analysis of variance. A summary of the analysis of variance appears in Table 3. The sources of variation that were analyzed were schools, grade level (junior and senior) and occupational plans upon

Table 3. Analysis of variance summary table for number of semesters of vocational agriculture completed, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	240.72	8.92	5.38**
Student grade level	1	330.61	330.61	199.40**
Student group	2	16.85	8.43	5.08**
Student group X student grade level	2	11.60	5.80	3.50*
Within	558	925.14	1.66	

*Significant at the .05 level of probability.

**Significant at the .01 level of probability.

completion of their formal education. Because of incomplete questionnaires returned, it was necessary to delete two schools from all variables where analysis of variance was utilized to analyze the data.

The analysis of variance for students' responses to this item grouped according to their occupational plans resulted in an F ratio of 5.08 which is significant at the .01 level of probability. A significant ($P < .01$) F ratio was also observed for grade level and for schools. The interaction between grade level and student group was revealed to be significant at the .05 level of probability.

The means and standard deviations for semesters of vocational agriculture completed by students grouped according to their occupational plans are presented in Table 4. Since a significant difference was observed

Table 4. Means and standard deviations for semesters of vocational agriculture completed by students grouped according to their occupational plans

Group number	Student group	Number	Mean semesters	Standard deviation
1[a]	Students who planned to enter an on-farm agricultural occupation.	323	5.59	1.47
2	Students who planned to enter an off-farm agricultural occupation.	102	5.30	1.81
3	Students who planned to enter a non-agricultural occupation	166	5.18	1.97
	Total	591	5.42	1.69

[a]Mean response for Group 1 is significantly ($P < .01$) greater than mean response for Group 3.

among the means for the three student groups, it was necessary to compare each group mean with every other group mean to determine where the difference lies. This multiple comparison for each pair of means was accomplished using the Scheffe method as described by Ferguson in Statistical Analysis in Psychology and Education (5). According to Ferguson, the Scheffe method for multiple comparison is more rigorous than other multiple comparison methods and will lead to fewer significant differences. Because of this, Scheffe recommends that the researcher employ a less rigorous significance level. Thus, the .10 level may be used rather than the .05 level when making multiple comparisons.

The Scheffe method of multiple comparison revealed that a mean response of 5.59 for Group 1 is significantly ($P < .01$) greater than the

mean response of 5.18 for Group 3. From this it may be concluded that the students who planned to enter an on-farm agricultural occupation have completed more semesters of vocational agriculture than those students who planned to enter a non-agricultural occupation upon completion of their formal education.

Grades received in vocational agriculture

Item number four of the questionnaire asked for students to indicate the types of grades they normally receive in vocational agriculture. Results of the three-way analysis of variance used to analyze responses to this variable are revealed in Table 5. An F ratio of 15.98 was observed

Table 5. Analysis of variance summary table for grades received in vocational agriculture, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	232.85	8.62	3.22**
Student grade level	1	10.60	10.60	3.96**
Student group	2	85.58	42.79	15.98**
Student group X student grade level	2	5.46	2.73	1.02
Within	558	1494.30	2.68	

**Significant at the .01 level of probability.

for students' responses to this variable, grouped according to their occupational plans. This F ratio is significant at the .01 level of

probability with 2 and 558 degrees of freedom. A significant ($P < .01$) F ratio for this variable was also observed for the grade level of students and differences among schools.

A summary of the mean responses to this item by students grouped according to their occupational plans is presented in Table 6. When the

Table 6. Mean responses for types of grades normally received in vocational agriculture by students grouped according to their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1[a]	Students who planned to enter an on-farm agricultural occupation.	323	4.53	1.73
2	Students who planned to enter an off-farm agricultural occupation.	102	3.61	1.67
3[b]	Students who planned to enter a non-agricultural occupation.	166	4.84	1.75
	Total	591	4.46	1.77

[a]Mean response for Group 1 is significantly ($P < .01$) greater than mean response for Group 2.

[b]Mean response for Group 3 is significantly ($P < .01$) greater than mean response for Group 2.

Scheffe method was used to test for differences in mean responses of grades received in vocational agriculture, it was revealed that students in Group 1 reported a mean of 4.53 which is significantly ($P < .01$) greater than the mean of 3.61 reported by students in Group 2. Also, students in Group 3 reported a mean response of 4.84 which is significantly ($P < .01$) greater

than the mean for Group 2. Thus, it may be concluded that students who planned to enter an off-farm agricultural occupation received higher grades in their vocational agriculture courses than those students who planned to enter either an on-farm agricultural occupation or a non-agricultural occupation.

The frequencies and percentages for each response alternative to this item of the questionnaire are presented in Table 7.

Table 7. Frequencies and percentages for response alternatives to grades normally received in vocational agriculture by students grouped according to their occupational plans

Response alternative	Student group[a]			Total	Percent
	Group 1	Group 2	Group 3		
1. All A's.	10	7	9	26	4.4
2. Mostly A's but few B's.	29	21	11	61	10.4
3. Half A's and B's.	63	28	17	108	18.4
4. About equal A's, B's and C's.	34	10	21	65	11.1
5. Mostly B's and C's.	77	20	46	143	24.3
6. Mostly C's but few B's.	67	10	30	107	18.2
7. C's and D's.	36	5	28	69	11.8
8. D's and F's.	4	0	4	8	1.4
Total	232	102	166	591	100.0

[a] Group 1 = Students who planned to enter an on-farm agricultural occupation.

Group 2 = Students who planned to enter an off-farm agricultural occupation.

Group 3 = Students who planned to enter a non-agricultural occupation.

Grades received in all courses

In responding to this variable, students were requested to indicate the types of grades they normally get in all courses they have taken. A summary of the analysis of variance calculation for this variable is presented in Table 8. An analysis of the mean responses to this variable by students grouped according to their occupational plans revealed an F ratio of 10.58. This F ratio with 2 and 558 degrees of freedom is significant at the .01 level of probability.

Table 8. Analysis of variance summary table for grades in all courses, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	174.87	6.48	3.09**
Student grade level	1	0.42	0.42	1.0
Student group	2	44.39	22.20	<10.58**
Student group X student grade level	2	2.05	1.02	<1.0
Within	558	1170.23	2.09	

**Significant at the .01 level of probability.

A summary of the mean responses to this item by students grouped according to their occupational plans appears in Table 9. Using the Scheffe method of multiple comparison, it was found that the mean response of 5.24 for both Groups 1 and 3 is significantly ($P < .01$) greater than the mean response of 4.36 for Group 2. It may be concluded from this analysis

Table 9. Mean responses of grades normally received in all courses by students grouped according to their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1[a]	Students who planned to enter an on-farm agricultural occupation.	323	5.24	1.39
2	Students who planned to enter an off-farm agricultural occupation.	102	4.36	1.61
3[b]	Students who planned to enter a non-agricultural occupation.	166	5.24	1.68
	Total	591	5.09	1.55

[a]Mean response for Group 1 is significantly ($P < .01$) greater than mean response for Group 2.

[b]Mean response for Group 3 is significantly ($P < .01$) greater than mean response for Group 2.

that students who planned to enter off-farm agricultural occupations received higher grades in all their courses than did students who planned to enter on-farm agricultural occupations or non-agricultural occupations.

The frequencies and percentages for each response alternative to this variable appear in Table 10.

Participation in high school activities

Students were requested to indicate the kinds of activities in which they have participated while in high school. The frequency and percentage of responses are summarized in Table 11.

The data received from the variables were analyzed using the chi-square statistic to determine the relationship among kinds of activities for

Table 10. Frequencies and percentages for response alternatives to grades normally received in all courses by students grouped according to their occupational plans

Response alternative	Student group[a]			Total	Percent
	Group 1	Group 2	Group 3		
1. All A's.	2	2	4	9	1.5
2. Mostly A's but few B's.	7	8	8	23	3.9
3. Half A's and B's	29	20	15	64	10.9
4. About equal A's, B's and C's.	57	21	19	97	16.5
5. Mostly B's and C's.	79	22	32	133	22.5
6. Mostly C's but few B's.	83	17	43	143	24.2
7. C's and D's.	61	10	41	112	19.0
8. D's and F's.	5	0	3	8	1.5
Total	323	102	166	591	100.0

[a]Group 1 = Students who planned to enter an on-farm agricultural occupation.

Group 2 = Students who planned to enter an off-farm agricultural occupation.

Group 3 = Students who planned to enter a non-agricultural occupation.

which students had participated and students' occupational plans. A significant ($P < .001$) chi-square value of 15.00 was observed for the relationship between students' participation in 4-H and students' occupational plans. Over 43 percent of those students who planned to enter an off-farm agricultural occupation indicated they participated in 4-H Club while in high school. Whereas, 26.7 percent of those who planned to enter an on-farm agricultural occupation and 22.5 percent of those planning to

Table 11. Chi-square test for relationship among kinds of activities students participate in, and students' occupational plans

Kinds of activities	Number students participating by groups[a]								
	Group 1		Group 2		Group 3		Totals		
	No.	%	No.	%	No.	%	No.	%	Chi-square
Annual	12	3.6	9	8.3	10	5.8	31	5.0	4.12*
Athletics	149	44.2	64	58.7	89	51.4	302	48.8	7.61*
Band	46	13.6	20	18.3	20	11.6	86	13.9	2.61
Chorus	38	11.3	24	22.0	17	9.8	79	12.8	10.40**
Debate	6	1.8	4	3.7	1	0.6	11	1.8	3.66
FFA	295	87.5	95	87.2	136	78.6	526	85.0	7.62*
4-H	90	26.7	47	43.1	39	22.5	176	28.4	15.00***
Hobby	3	0.9	3	2.8	7	4.0	13	2.1	5.81*
Student government	12	3.6	18	16.5	9	5.2	39	6.3	23.90***
Church	33	9.8	16	14.7	8	4.6	57	9.2	8.39*
Other	43	12.8	28	25.7	32	18.5	103	16.6	10.52**

[a]Group 1 = Students who planned to enter an on-farm agricultural occupation.

Group 2 = Students who planned to enter an off-farm agricultural occupation.

Group 3 = Students who planned to enter a non-agricultural occupation.

*Significant at .05 level of probability.

**Significant at .01 level of probability.

***Significant at .001 level of probability.

enter a non-agricultural occupation indicated they participated in 4-H Club activities.

A significant ($P < .001$) chi-square value of 23.90 was calculated for the relationship between students' participation in student government and students' occupational plans. Over 16 percent of the students in Group 2 indicated that they participated in student government, while only 3.6 and 5.2 percent of the students in Groups 1 and 3 respectively indicated they participated in student government.

When students were requested to indicate their participation in FFA, a chi-square value of 7.62 was revealed for the relationship between their participation and their planned occupation. This chi-square value is significant at the .05 level of probability. The percentage of students in Groups 1 and 2 participating in FFA was almost equal, while the percentage participating in FFA in Group 3 was slightly lower. Thus, those students seeking a non-agricultural occupation would have more of a tendency not to participate in FFA activities. However, it should be kept in mind, that 85 percent of the students responding in this study were a member of the FFA.

Place of residence

Item number 7 of the questionnaire requested that students indicate their place of residence. A summary of the data collected for this variable is presented in Table 12. Over 81 percent of the students participating in this study indicated that they were living on a farm. Data collected for this variable were analyzed using the chi-square test of significance. A significant ($P < .001$) chi-square value of 56.58 was found to exist in the relationship between a students' place of residence and

students' occupational plans.

Table 12. Chi-square test for relationship between students' place of residence and students' occupational plans

Place of residence	Frequency of responses by groups[a]							
	Group 1		Group 2		Group 3		Totals	
	No.	%	No.	%	No.	%	No.	%
On a farm.	305	90.5	87	79.8	112	64.7	504	81.4
In the open country but not on a farm.	11	3.3	6	5.5	11	6.4	28	4.5
In a village under 2,500,	7	2.1	9	8.3	28	16.2	44	7.2
In a town of 2,500-10,000:	12	3.6	6	5.5	18	10.4	36	5.8
In a city over 10,000.	2	0.6	1	0.9	4	2.3	7	1.1
Totals	337	100.0	109	100.0	173	100.0	619	100.0

Chi-square = 56.58***

[a]Group 1 = Students who planned to enter an on-farm agricultural occupation.

Group 2 = Student's who planned to enter an off-farm agricultural occupation.

Group 3 = Students who planned to enter a non-agricultural occupation.

***Significant at the .001 level of probability.

It was revealed that 90.5 percent of the students in Group 1 lived on a farm compared to 79.8 percent of Group 2 and 64.7 percent for Group 3. A complete analysis of this variable as a dependent variable may be found in a separate, but related research report.[1]

[1]Byler, B.L. A comparative study of differences in selected factors related to educational and occupational decision-making between on-farm and off-farm vocational agriculture students. Ames, Iowa: Department of Agricultural Education, Iowa State University, 1976.

Number of years of posthigh school education planned

This item of the questionnaire asked the students to indicate the number of years of further education they planned to get beyond high school. Table 13 presents the three-way analysis of variance utilized in analyzing the data received for this variable. A significant ($P<.01$) F ratio of 55.12 was observed for the mean responses grouped by their occupational plans.

Table 13. Analysis of variance summary table for amount of further education beyond high school, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	168.02	6.22	2.75**
Student grade level	1	1.49	1.49	<1.0
Student group	2	249.58	124.79	55.12**
Student group X student grade level	2	23.84	11.92	5.26**
Within	558	1263.15	2.26	

**Significant at .01 level of probability.

A summary of the mean responses and standard deviations for this variable is presented in Table 14. The Scheffe method of multiple comparison revealed that a mean response of 3.66 for Group 2 is significantly ($P<.01$) greater than the mean response of 1.78 and 2.32 for Groups 1 and 3 respectively. Thus, it may be concluded that students who planned to enter

Table 14. Means and standard deviations regarding number of years of further education planned by students, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1	Students who planned to enter an on-farm agricultural occupation.	323	1.78	1.33
2[a]	Students who planned to enter an off-farm agricultural occupation.	102	3.66	2.08
3[b]	Students who planned to enter a non-agricultural occupation.	166	2.32	1.66
	Total	591	2.26	1.71

[a]Mean response for Group 2 is significantly ($P < .01$) greater than mean responses for Groups 1 and 3.

[b]Mean response for Group 3 is significantly ($P < .01$) greater than mean response for Group 1.

an off-farm agricultural occupation planned to receive a greater number of years of education beyond high school than students who planned to enter an on-farm agricultural occupation or students who planned to enter a non-agricultural occupation. It was also revealed that students in Group 3 planned to receive significantly ($P < .01$) greater number of years of posthigh school education than those students in Group 1. Students who planned to enter a non-agricultural occupation reported they anticipated receiving 2.32 years of further education compared to 1.78 years for students who planned to enter an on-farm agricultural occupation.

Work experience while in high school

Students participating in this study were requested to indicate their extent of working outside their family and home or farm. A summary of responses to this variable is presented in Table 15. The majority

Table 15. Chi-square test for relationship between students' responses regarding extent of working while in high school and students' occupational plans

Response alternatives	Frequency of responses by groups[a]							
	Group 1		Group 2		Group 3		Totals	
	No.	%	No.	%	No.	%	No.	%
I have a fairly regular job outside my family and home or farm.	81	24.3	30	27.5	67	38.7	178	28.9
I sometimes work outside my family and home or farm.	172	51.5	66	60.6	84	48.6	322	52:3
I do not work outside may family and home or farm.	81	24.3	13	11.9	22	12.7	116	18.8
Totals	334	100.0	109	100.0	173	28:1	616	100.0

Chi-square = 21.68***

[a]Group 1 = Students who planned to enter an on-farm agricultural occupation.

Group 2 = Students who planned to enter an off-farm agricultural occupation.

Group 3 = Students who planned to enter a non-agricultural occupation.

***Significant at the .001 level of probability.

(52.3 percent) of the students sampled indicated that they sometimes work outside their family and home or farm. Almost 29 percent of the students

in the three groups indicated that they had a fairly regular job outside their family and home or farm. Whereas, nearly 19 percent of the students sampled indicated that they did not work outside the family and home or farm.

The chi-square statistic was applied to the data obtained for this variable to test the relationship between students' extent of working outside their family and home or farm, and students' occupational plans. A significant ($P < .001$) chi square vlaue of 21.68 was observed for this variable. Therefore, it may be concluded that a relationship does exist between the extent of students working outside the family and home or farm and students' occupational plans.

"Significant others" influencing occupational choice

This item of the questionnaire requested that students indicate who had the most influence on their choice of occupation they planned to enter. The tabulations in Table 16 report the majority (47.2 percent) of the students in all three groups indicated that their father had the most influence on their choice of occupation. A greater percentage (58.5 percent) of the students who planned to enter an on-farm agricultural occupation upon graduation from high school indicated their father had the greatest influence on their choice of occupation. This is in comparison to 37.4 percent for Group 2 and 30.8 percent for Group 3.

The chi-square statistic was also used to analyze the data received from this variable. A significant ($P < .001$) chi-square value of 70.34 was found. This indicates a relationship exists between students' response to the person being the most influential upon their choice of occupation and their occupational plans upon completion of high school.

Table 16. Chi-square test for relationship between "significant others" influencing students' occupational choice and students' occupational plans

"Significant others"	Frequency of responses by groups[a]							
	Group 1		Group 2		Group 3		Totals	
	No.	%	No.	%	No.	%	No.	%
1. Father	185	58.5	37	37.4	49	30.8	271	47.2
2. Mother	6	1.9	2	2.0	8	5.0	16	2.8
3. Brother or sister	10	3.2	2	2.0	13	8.2	25	4.4
4. Another relative	15	4.7	3	3.0	8	5.0	26	4.5
5. Counselor	4	1.3	4	4.0	9	5.7	17	3.0
6. Close friend	14	4.4	9	9.1	17	10.7	40	7.0
7. Agriculture teacher	6	1.9	6	6.1	2	1.3	14	2.4
8. Another teacher	1	0.3	1	1.0	8	5.0	10	1.7
9. Other than above	75	23.7	35	35.4	45	28.3	155	27.0
Totals	316	100.0	99	100.0	159	100.0	574	100.0
	Chi-square = 70.34***							

[a]Group 1 = Students who planned to enter an on-farm agricultural occupation.

Group 2 = Students who planned to enter an off-farm agricultural occupation.

Group 3 = Students who planned to enter a non-agricultural occupation.

***Significant at the .001 level of probability.

Part II of Questionnaire

Part II of the questionnaire contained 30 items to be rated by each student participating in the study (see Appendix A). The students were asked to rate each of the statements on a 10 point scale from low to high.

They were instructed to read each statement and rate how they feel about that statement by circling one number from 0 to 10. A score of 0 is the lowest and a score of 10 is the highest. For interpretation of the data received from each statement the following may be used:

Rating scale

1 = low

3 = below average

5 = average

7 = above average

10 = highest rating

The mean ratings by each of the three student groups were calculated for each of the statements on the rating scale in Part II of the questionnaire. A three-way analysis of variance was used to determine if significant differences exist among the mean ratings of the three student groups for each statement. The sources of variation that were analyzed for each statement are as follows: schools, student grade level (junior or senior) and student group (grouped by their occupational plans).

Amount of certainty regarding occupational choice

The first statement of the rating scale requested that students indicate how certain they are that they will enter the occupation they have chosen. This was done by circling a number on the rating scale from 0 to 10. Results of the analysis of variance used to analyze the mean response ratings for the three groups are presented in Table 17.

An F ratio of 4.01 was observed for students' ratings of this statement grouped by student grade level. This F ratio is significant at the .05 level of probability with 1 and 558 degrees of freedom. A significant

($P < .01$) F ratio of 10.32 was also observed for students' responses to this statement, grouped according to their occupational plans.

Table 17. Analysis of variance summary table for amount of certainty regarding occupational choice among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	186.37	6.90	1.14
Student grade level	1	24.37	24.37	4.01*
Student group	2	125.28	62.64	10.32**
Student group X student grade level	2	22.13	11.07	1.82
Within	558	3389.39	6.07	

*Significant at the .05 level of probability.

**Significant at the .01 level of probability.

Table 18 summarizes the mean ratings and standard deviations for the three student groups. The Scheffe procedure for multiple comparison was used to determine which means are significantly different. Using this method, it was determined that the mean response rating of 7.27 for Group 1 is significantly ($P < .01$) greater than the mean response rating of 6.28 for Group 2 and 6.51 for Group 3. It may be concluded from this analysis that students who planned to enter an on-farm agricultural occupation upon completion of their formal education were more certain of their occupational choice than either students who planned to enter an off-farm agricultural occupation or a non-agricultural occupation. A mean rating of over 6.0

Table 18. Means and standard deviations regarding amount of certainty for occupational choice for students grouped by their occupational plans

Group number	Student Group	Number	Mean response	Standard deviation
1[a]	Students who planned to enter an on-farm agricultural occupation.	323	7.27	2.41
2	Students who planned to enter an off-farm agricultural occupation.	102	6.28	2.63
3	Students who planned to enter a non-agricultural occupation.	166	6.51	2.56
	Total	591	6.89	2.53

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean ratings for Groups 2 and 3.

for each group would indicate a considerable amount of certainty on the part of the students in all three groups that they would enter the occupation they selected.

Amount of thought given to occupational choice

This statement of the rating scale asked that students indicate the amount of thought they had given regarding their occupational choice. A summary of the analysis of variance appears in Table 19. The analysis of variance for students' ratings of this statement grouped by grade level (junior or senior) revealed an F ratio of 14.32. This ratio when tested at the .01 level of probability with 1 and 558 degrees of freedom is significant. Also, a significant ($P < .05$) F ratio of 4.64 was found when differences between student groups was examined.

Table 19. Analysis of variance summary table for amount of thought given to choice of occupation, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	101.48	3.76	<1.0
Student grade level	1	70.02	70.02	14.32**
Student group	2	45.4	22.7	4.64*
Student group X student grade level	2	10.89	5.45	<1.0
Within	558	2729.64	4.90	

*Significant at the .05 level of probability.

**Significant at the .01 level of probability.

Table 20 summarizes the mean ratings and standard deviations for the student groups. The Scheffe test revealed that the mean response of 7.83 for Group 1 is significantly ($P<.01$) greater than the mean response of 7.18 for Group 3. This indicates that those students planning to enter on-farm agricultural occupations gave more thought to their choice of occupation than those students who planned to enter non-agricultural occupations. Considering a rating of 5.0 as the midpoint on the rating scale, a mean rating of over 7.0 for each student group represents a considerable amount of thought regarding their future occupational plans.

Ability for occupation planning to enter

In responding to this statement, students were requested to indicate their perception of the ability they have for the occupation they plan

Table 20. Means and standard deviations regarding amount of thought given to choice of occupation, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1[a]	Students who planned to enter an on-farm agricultural occupation.	323	7.83	2.14
2	Students who planned to enter an off-farm agricultural occupation.	102	7.54	2.06
3	Students who planned to enter a non-agricultural occupation.	166	7.18	2.51
	Total	591	7.59	2.25

[a]Mean rating for Group 1 is significantly ($p < .01$) greater than mean rating for Group 3.

to enter. Results of the analysis of variance are presented in Table 21.

Table 21. Analysis of variance summary table for students' perception of ability to perform selected occupation, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	104.66	3.89	1.11
Student grade level	1	7.89	7.90	2.25
Student group	2	97.69	48.85	13.96**
Student group X student grade level	2	16.62	8.31	2.37
Within	558	1453.35	3.50	

**Significant at the .01 level of probability.

A significant ($P < .01$) F ratio of 13.96 was found for the mean ratings of students grouped by their occupational plans.

The means and standard deviations for this variable appear in Table 22.

Table 22. Means and standard deviations regarding students' perception of ability to perform selected occupation, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1[a]	Students who planned to enter an on-farm agricultural occupation.	323	8.16	1.76
2	Students who planned to enter an off-farm agricultural occupation.	102	7.55	1.84
3	Students who planned to enter a non-agricultural occupation.	166	7.21	2.14
	Total	591	7.79	1.93

[a] Mean rating for Group 1 is significantly ($P < .05$) greater than mean rating for Group 2.

Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 3.

The Scheffe test used to determine differences in means indicated that the mean rating of 8.16 for Group 1 is significantly ($P < .01$) greater than the mean response of 7.21 for Group 3. The mean rating for Group 1 is also significantly ($P < .05$) greater than the mean response of 7.55 for Group 2.

It may be concluded from this analysis that students who plan to enter on-farm agricultural occupations perceived themselves being better able to perform these occupations that they selected than students who selected

off-farm agricultural occupations or non-agricultural occupations. In essence, their familiarity with these occupations and background training have perhaps made those students planning to enter on-farm agricultural occupations more sure of the competencies which they possess.

Amount of work experience in occupation planning to enter

Students were requested to indicate their perception of the amount of work experience they had received for the occupation they planned to enter upon completion of their formal education. Table 23 summarizes the analysis of variance used in analyzing the data for this statement. A significant

Table 23. Analysis of variance summary table for amount of work experience in occupation planning to enter, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	1803.98	66.81	10.41**
Student grade level	1	4.34	4.34	<1.0
Student group	2	1349.82	674.91	105.13**
Student group X student grade level	2	14.06	7.03	1.10
Within	558	3581.50	6.42	

**Significant at the .01 level of probability.

($P < .01$) F ratio of 105.13 was observed for the mean ratings of students grouped according to their occupational plans.

The means and standard deviations for this variable appear in Table 24. It was revealed that a mean rating of 8.59 for Group 1 is significantly

Table 24. Means and standard deviations regarding amount of work experience in occupation planning to enter, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1[a]	Students who planned to enter an on-farm agricultural occupation.	323	8.59	1.87
2	Students who planned to enter an off-farm agricultural occupation.	102	5.53	3.16
3	Students who planned to enter a non-agricultural occupation.	166	4.95	3.17
	Total	591	7.04	3.06

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean ratings for Groups 2 and 3.

($P < .01$) greater than the mean ratings of 5.53 and 4.95 for Groups 2 and 3 respectively. Therefore, it may be concluded that students who planned to enter an on-farm agricultural occupation upon graduation from high school indicated they had received a great deal more work experience for the occupation they planned to enter than did students who planned to enter an off-farm agricultural occupation or a non-agricultural occupation.

Knowledge of occupation planning to enter

In responding to this variable, students were asked to indicate their perception of the knowledge they have for the occupation they are planning to enter upon completion of their formal education. The analysis of variance summary for this variable is revealed in Table 25. A significant ($P < .01$) F ratio of 40.78 was observed for the mean ratings of this variable

Table 25. Analysis of variance summary table for students' perception of knowledge of occupation planning to enter, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	132.65	66.33	15.75**
Student grade level	1	11.50	11.50	2.73
Student group	2	343.40	171.70	40.78**
Student group X student grade level	2	17.51	8.76	2.08
Within	558	2350.63	4.21	

**Significant at the .01 level of probability.

for students grouped according to their occupational plans.

Table 26 summarizes the means and standard deviations received from this variable. The mean rating of 7.91 for Group 1 is significantly ($P < .01$) greater than the mean response of 6.53 for Group 2 and 6.14 for Group 3. This indicates that students planning to enter on-farm agricultural occupations perceive that they have more knowledge about their occupational choice than did students who planned to enter off-farm agricultural occupations or non-agricultural occupations.

Value of high school training for occupation planning to enter

Students were requested to indicate their perception of the value of their high school training for the occupation they are planning to enter. A significant ($P < .01$) F ratio of 11.79 was observed for students grouped according to their occupational plans (Table 27). Also, a significant

Table 26. Means and standard deviations regarding students' perception of knowledge of occupation planning to enter, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1[a]	Students who planned to enter an on-farm agricultural occupation.	323	7.91	1.72
2	Students who planned to enter an off-farm agricultural occupation.	102	6.53	2.11
3	Students who planned to enter a non-agricultural occupation.	166	6.14	2.61
	Total	591	7.18	2.22

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean ratings for Groups 2 and 3.

($P < .01$) F ratio was found for the interaction between student group and student grade level.

The means and standard deviations for each student group are presented in Table 28. It was revealed that a mean rating of 6.04 for Group 1 is significantly ($P < .01$) greater than a mean rating of 4.70 for Group 3. It was also found that the mean rating of 5.36 for Group 2 is significantly ($P < .01$) greater than the mean rating of 4.70 for Group 3. From this analysis, it may be concluded that students who planned to enter an on-farm agricultural occupation or an off-farm agricultural occupation, perceived their high school training to be of more value to them for this occupation than did students who indicated they will seek a non-agricultural occupation upon completion of their formal education.

Table 27. Analysis of variance summary table for students' perception of value of high school training for occupation planning to enter, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	266.28	17.28	2.66**
Student grade level	1	7.07	7.07	1.09
Student group	2	152.97	76.49	11.79**
Student group X student grade level	2	69.39	34.70	5.35**
Within	558	3620.84	6.50	

**Significant at the .01 level of probability.

Amount of training high school has provided for occupation planning to enter

This item of the rating scale requested that students indicate their perception of the amount of training their high school has provided for the occupation they are planning to enter. A summary of the analysis of variance is presented in Table 29. A significant ($P < .01$) F ratio of 3.34 was calculated for the variation in response to this variable among schools. This variance would indicate that there is a difference among schools participating in the study as to students' perceptions of the value of their high school training for the occupation they are planning to enter. A significant ($P < .01$) F ratio of 23.20 was also observed for the mean ratings of this variable for students grouped according to their occupational plans.

Table 30 summarizes the group means and standard deviations for this variable. It was determined that the mean rating of 5.68 for Group 1 is

Table 28. Means and standard deviations regarding students' perception of value of high school training for occupation planning to enter, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1[a]	Students who planned to enter an on-farm agricultural occupation.	323	6.04	2.43
2[b]	Students who planned to enter an off-farm agricultural occupation.	102	5.36	2.56
3	Students who planned to enter a non-agricultural occupation.	166	4.70	3.10
	Total	591	5.54	2.71

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 3.

[b]Mean rating for Group 2 is significantly ($P < .01$) greater than mean rating for Group 3.

Table 29. Analysis of variance summary table for students' perception of amount of training high school has provided for occupation planning to enter, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	592.35	21.94	3.34**
Student grade level	1	.02	.02	<1.0
Student group	2	304.38	152.20	23.20**
Student group X student grade level	2	6.19	3.10	<1.0
Within	558	3658.16	6.57	

**Significant at the .01 level of probability.

Table 30. Means and standard deviations regarding students' perception of amount of training high school has provided for occupation planning to enter, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1[a]	Students who planned to enter an on-farm agricultural occupation.	323	5.68	2.49
2	Students who planned to enter an off-farm agricultural occupation.	102	4.48	2.75
3	Students who planned to enter a non-agricultural occupation.	166	3.84	2.86
	Total	591	4.96	2.77

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean ratings for Groups 2 and 3.

significantly ($P < .01$) greater than the mean rating of 4.48 for Group 2 and the mean rating of 3.84 for Group 3. Therefore, it may be concluded that students who planned to enter an on-farm agricultural occupation perceived their high school as providing a greater amount of training for the occupation they are planning to enter than did students who planned to enter an off-farm agricultural occupation or a non-agricultural occupation. It should be pointed out that only one group rated this item above 5.0. On the rating scales used, a response of 5.0 is midpoint on the scale and therefore could be considered as an average rating.

Amount of encouragement to continue education beyond high school student has received from father

Students were requested to indicate the amount of encouragement they

had received from their father to continue their formal education beyond high school. An F ratio of 6.09 was observed for differences among the mean ratings indicated by the three student groups (Table 31.) This F ratio

Table 31. Analysis of variance summary table for amount of encouragement student had received from father to continue education beyond high school, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	604.28	22.39	8.89*
Student grade level	1	1.79	1.79	1.0
Student group	2	72.16	72.16	6.09**
Student group X student grade level	2	1.48	1.48	<1.0
Within	558	11.84	11.84	

*Significant at the .05 level of probability.

**Significant at the .01 level of probability.

with 2 and 558 degrees of freedom is significant at the .01 level of probability.

The means and standard deviations for this variable for students grouped by their occupational plans are presented in Table 32. A multiple comparison of all group means revealed that a mean rating of 5.67 for Group 2 is significantly ($P < .01$) greater than the mean rating of 4.30 for Group 1 and the 4.81 mean rating for Group 3. Therefore, it may be concluded that students who planned to enter an off-farm agricultural

Table 32. Means and standard deviations regarding amount of encouragement student had received from father to continue education beyond high school, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1	Students who planned to enter an on-farm agricultural occupation.	323	4.30	3.43
2[a]	Students who planned to enter an off-farm agricultural occupation.	102	5.67	3.53
3	Students who planned to enter a non-agricultural occupation.	166	4.81	3.63
	Total	591	4.68	3.53

[a]Mean rating for Group 2 is significantly ($P < .01$) greater than mean rating for Groups 1 and 3.

occupation had received more encouragement from their father to obtain additional formal education than did students who planned to enter an on-farm agricultural occupation or a non-agricultural occupation upon completion of their formal education.

Amount of encouragement to continue education beyond high school student has received from mother

For this variable, students were asked to report their perception of the amount of encouragement they had received from their mother to continue their education beyond high school. Table 33 summarizes the three-way analysis of variance used to analyze the data received from this variable. An F ratio of 8.08 for the mean ratings of students grouped according to their occupational plans is significant at the .01 level of probability.

Table 33. Analysis of variance summary table for amount of encouragement student had received from mother to continue education beyond high school, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation.

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	445.15	16.50	1.41
Student grade level	1	.76	.76	<1.0
Student group	2	189.22	94.61	8.08**
Student group X student grade level	2	12.38	6.20	<1.0
Within	558	6533.64	11.71	

**Significant at the .01 level of probability.

Table 34 reveals the mean ratings and standard deviations for this variable. A mean rating of 6.58 for Group 2 is significantly ($P < .01$) greater than the mean response of 4.93 for Group 1 and significantly ($P < .05$) greater than the mean response of 5.43 for Group 3. From this analysis it may be concluded that students who planned to enter an off-farm agricultural occupation received a greater amount of encouragement from their mother to continue their education beyond high school than did students who planned to enter an on-farm agricultural occupation or a non-agricultural occupation. In referring back to Table 32, it may also be observed that these same students felt they received more encouragement to continue their education from their mother than they did from their father as the mean rating from their mother was 6.58 compared to 5.67 for the father.

Table 34. Means and standard deviations regarding amount of encouragement student had received from mother to continue education beyond high school, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1	Students who planned to enter an on-farm agricultural occupation.	323	4.93	3.42
2[a]	Students who planned to enter an off-farm agricultural occupation.	102	6.58	3.02
3	Students who planned to enter a non-agricultural occupation.	166	5.43	3.68
	Total	591	5.36	3.48

[a]Mean rating for Group 2 is significantly ($P < .01$) greater than mean rating for Group 1.

Mean rating for Group 2 is significantly ($P < .05$) greater than mean rating for Group 3.

Amount of encouragement received from father to attend an area vocational school

This item of the rating scale requested that students indicate their perception of the amount of encouragement they had received from their father to attend a postsecondary area vocational school upon completion of their formal education. No significant F ratio was observed for this variable (Table 35).

The mean ratings and standard deviations for this variable are given in Table 36. A total group mean rating of 3.41 would suggest a relatively low amount of encouragement these students had received from their fathers to attend an area vocational school.

Table 35. Analysis of variance summary table for amount of encouragement student had received from father to attend an area vocational school, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	259.61	8.87	<1.0
Student grade level	1	25.98	25.98	2.32
Student group	2	3.23	1.62	<1.0
Student group X student grade level	2	10.32	5.16	<1.0
Within	558	6259.63	11.22	

Table 36. Means and standard deviations regarding amount of encouragement student had received from father to attend an area vocational school, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1	Students who planned to enter an on-farm agricultural occupation.	323	3.43	3.22
2	Students who planned to enter an off-farm agricultural occupation.	102	3.53	3.31
3	Students who planned to enter a non-agricultural occupation.	166	3.31	3.57
	Total	591	3.41	3.33

Amount of encouragement received from father to attend a four-year college or university

Students were requested to indicate their perception of the amount of encouragement they had received from their father to attend a four-year college or university. Table 37 summarizes the analysis of variance calculation for this variable. A significant ($P < .01$) F ratio of 13.84 was observed for the differences among the mean ratings for students grouped according to their occupational plans.

Table 37. Analysis of variance summary table for amount of encouragement student had received from father to attend a four year college or university, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	505.75	18.73	2.06**
Student grade level	1	8.11	8.11	<1.0
Student group	2	251.3	125.66	13.84**
Student group X student grade level	2	1.87	.94	<1.0
Within	558	5068.59	9.08	

**Significant at the .01 level of probability.

Table 38 summarizes the mean ratings and standard deviations for the data received from this variable. A multiple comparison of the three group means indicated that a mean rating of 3.95 for Group 2 is significantly ($P < .01$) greater than the mean ratings of 2.07 and 2.43 for Groups 1 and 3

Table 38. Means and standard deviations regarding amount of encouragement received from father to attend a four-year college or university for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1	Students who planned to enter an on-farm agricultural occupation.	323	2.07	2.89
2[a]	Students who planned to enter an off-farm agricultural occupation.	102	3.95	3.53
3	Students who planned to enter a non-agricultural occupation.	166	2.43	3.16
	Total	591	2.49	3.15

[a]Mean rating for Group 2 is significantly ($P < .01$), greater than mean ratings for Groups 1 and 3.

respectively. From this analysis it may be concluded that students who planned to enter an off-farm agricultural occupation received more encouragement from their father to attend a four-year college or university than did students who planned to seek on-farm agricultural occupations or non-agricultural occupations. It should also be pointed out that mean ratings for all three groups were below the midpoint of 5.0. Thus, below average encouragement was received to attend a four-year college or university.

Amount of encouragement received from mother to attend a postsecondary area vocational school

This item of the rating scale asked that students indicate their perception of the amount of encouragement they had received from their mother to attend an area vocational school upon completion of their formal

education. The three-way analysis of variance for this variable revealed a non-significant F ratio of 1.03 for differences among the mean ratings for students grouped by their occupational plans (Table 39).

Table 39. Analysis of variance summary table for amount of encouragement student had received from mother to attend an area vocational school, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	270.55	10.02	<1.0
Student grade level	1	45.96	45.96	4.57*
Student group	2	20.7	10.35	1.03
Student group X student grade level	2	12.09	6.05	<1.0
Within	558	5616.19	10.06	

*Significant at the .05 level of probability.

The means and standard deviations for this variable are presented in Table 40. A total group mean rating of 3.15 would indicate a low amount of encouragement these students had received from their mother to attend an area vocational school.

Amount of encouragement received from mother to attend a four-year college or university

Students were asked to indicate their perception as to the amount of encouragement they had received from their mother to attend a four-year college or university. Table 41 summarizes the analysis of variance used

Table 40. Means and standard deviations regarding amount of encouragement student had received from mother to attend an area vocational school, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1	Students who planned to enter an on-farm agricultural occupation.	323	3.07	3.00
2	Students who planned to enter an off-farm agricultural occupation.	102	3.49	3.20
3	Students who planned to enter a non-agricultural occupation.	166	3.10	3.49
	Total	591	3.15	3.18

Table 41. Analysis of variance summary table for amount of encouragement students had received from mother to attend a four-year college or university, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	443.31	16.42	1.57*
Student grade level	1	5.86	5.86	<1.0
Student group	2	392.49	196.25	18.74**
Student group X student grade level	2	11.82	5.91	<1.0
Within	558	5842.18	10.46	

*Significant at the .05 level of probability.

**Significant at the .01 level of probability.

in analyzing the data received from this variable. An F ratio of 18.74 was observed for differences in the mean ratings of students grouped by their occupational plans. This F ratio with 2 and 558 degrees of freedom is significant at the .01 level of probability.

The mean ratings and standard deviations for each of the three student groups are presented in Table 42. The Scheffe procedure for multiple

Table 42. Means and standard deviations regarding amount of encouragement student had received from mother to attend a four-year college or university, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1	Students who planned to enter an on-farm agricultural occupation.	323	2.54	3.17
2[a]	Students who planned to enter an off-farm agricultural occupation.	102	4.83	3.45
3	Students who planned to enter a non-agricultural occupation.	166	2.69	3.36
	Total	591	2.98	3.38

[a]Mean rating for Group 2 is significantly ($P < .01$) greater than mean ratings for Groups 1 and 3.

comparison revealed that a mean rating of 4.83 for Group 2 is significantly ($P < .01$) greater than the mean ratings of 2.54 for Group 1 and 2.69 for Group 3. It may be concluded that students who planned to enter an off-farm agricultural occupation received more encouragement from their mother to attend a four-year college or university than did students who planned to enter an on-farm agricultural occupation or a non-agricultural occupation.

However, it should be pointed out that students in Groups 1 and 3 indicated a relatively low amount of encouragement from their mother to attend a four-year college or university.

Amount of encouragement received from vocational agriculture instructor to attend a postsecondary area vocational school

Students were requested to indicate their perception of the amount of encouragement they had received from their vocational agriculture instructor to attend a postsecondary area vocational school upon completion of their formal education. The analysis of variance summary of this variable is revealed in Table 43. No significant F ratio was observed for the mean

Table 43. Analysis of variance summary table for amount of encouragement students had received from vo-ag instructors to attend an area vocational school, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	528.28	19.57	2.72**
Student grade level	1	76.30	76.30	10.61**
Student group	2	38.79	19.40	2.70
Student group X student grade level	2	20.28	10.14	1.41
Within	558	4011.25	7.20	

**Significant at the .01 level of probability.

responses of students when grouped by their occupational plans.

Table 44 summarizes the mean ratings and standard deviations for

students grouped by their occupational plans. A total group mean rating of 3.06 would indicate a below average rating for this variable.

Tabel 44: Means and standard deviations regarding amount of encouragement student had received from vo-ag instructor to attend an area vocational school, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1	Students who planned to enter an on-farm agricultural occupation.	323	3.23	2.91
2	Students who planned to enter an off-farm agricultural occupation.	102	3.18	2.95
3.	Students who planned to enter a non-agricultural occupation.	166	2.65	2.56
	Total	591	3.06	2.83

Amount of encouragement received from vocational agriculture instructor to attend a four-year college or university

This statement of the rating scale asked that students indicate their perception regarding the amount of encouragement they had received from their vocational agriculture instructor to attend a four-year college or university upon completion of their formal education. Table 45 summarizes the analysis of variance used to analyze the data for this variable. A significant ($P < .05$) F ratio of 7.76 was observed for differences among the three student groups.

The mean ratings and standard deviations for this variable are presented in Table 46. Using the Scheffe procedure for multiple comparison,

Table 45. Analysis of variance summary table for amount of encouragement students had received from vo-ag instructors to attend a four-year college or university, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	454.34	16.83	2.05**
Student grade level	1	37.36	37.56	4.57*
Student group	2	127.5	63.76	7.76**
Student group X student grade level	2	5.29	2.65	<1.0
Within	558	4583.22	8.21	

*Significant at the .05 level of probability.

**Significant at the .01 level of probability.

it was found that a mean rating of 3.56 for Group 2 is significantly ($P < .01$) greater than the mean ratings of 2.51 for Group 1 and 2.32 for Group 3. It may be concluded that students who planned to enter an off-farm agricultural occupation received a greater amount of encouragement to attend a four-year college or university from their vo-ag instructor than did students who planned to enter an on-farm agricultural occupation or a non-agricultural occupation.

Value of high school vocational agriculture courses completed in preparing for occupation planning to enter

Students were requested to indicate their perception of the value of their high school vocational agriculture courses completed in preparing them for the occupation they are planning to enter. A three-way analysis

Table 46. Means and standard deviations regarding amount of encouragement student had received from vo-ag instructor to attend a four-year college or university, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1	Students who planned to enter an on-farm agricultural occupation.	323	2.51	2.83
2[a]	Students who planned to enter an off-farm agricultural occupation.	102	3.56	3.51
3	Students who planned to enter a non-agricultural occupation.	166	2.32	2.78
	Total	591	2.64	2.98

[a]Mean rating for Group 2 is significantly ($P < .01$) greater than mean ratings for Groups 1 and 3.

of variance used to analyze the data for this variable appears in Table 47. A significant ($P < .01$) F ratio of 36.02 was found to exist among the student groups.

Table 48 reveals the means and standard deviations of this variable for students grouped by their occupational plans. It was determined that the mean rating of 6.16 for Group 1 is significantly ($P < .01$) greater than the mean rating of 3.96 for Group 3. Also, the mean rating of 5.42 for Group 2 is significantly ($P < .01$) greater than the mean response for Group 3. Thus, it may be concluded that students who planned to enter an on-farm agricultural occupation or an off-farm agricultural occupation perceived their completed high school vo-ag courses of more value to them in preparing for the type of occupation they planned to enter than did students who

Table 47. Analysis of variance summary table for students' perception of value of high school vo-ag courses completed in preparing for occupation planning to enter, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	381.26	14.12	2.28**
Student grade level	1	1.39	1.39	<1.0
Student group	2	445.19	222.60	36.02**
Student group X student grade level	2	16.36	8.12	1.32
Within	558	3449.94	6.18	

**Significant at the .01 level of probability.

planned to enter a non-agricultural occupation. From the view point of the vo-ag instructor, this is the result he would hope to achieve in preparing students for job entry upon completion of his program.

Value of FFA program in preparing for occupation planning to enter

This statement of the rating scale requested that students indicate their perception of the value of their FFA program in preparing them for the occupation they are planning to enter upon completion of their formal education. A summary of the analysis of variance for this variable appears in Table 49. A significant ($P < .01$) F ratio of 37.37 was observed among student groups.

The means and standard deviations for this variable are presented in Table 50. It was found that the mean rating of 5.81 for Group 1 is

Table 48. Means and standard deviations regarding students' perception of value of high school vo-ag courses completed in preparing for occupation planning to enter, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1[a]	Students who planned to enter an on-farm agricultural occupation.	323	6.16	2.52
2[b]	Students who planned to enter an off-farm agricultural occupation.	102	5.42	2.35
3	Students who planned to enter a non-agricultural occupation.	166	3.96	2.74
	Total	591	5.41	2.72

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 3.

[b]Mean rating for Group 2 is significantly ($P < .01$) greater than mean rating for Group 3.

significantly ($P < .01$) greater than the mean rating of 3.33 for Group 3. Also, the mean rating of 4.88 for Group 2 is significantly greater than the mean rating for Group 3. It may be ascertained from this analysis that those students planning to enter an agricultural occupation perceived the FFA program to be of more value to them in preparing for their selected occupation, than did those students who are planning to enter a non-agricultural occupation.

Value of vocational agriculture courses completed in preparing to attend a postsecondary area vocational school

Students participating in this study were asked to indicate their

Table 49. Analysis of variance summary table for students' perception of value of FFA program in preparing for occupation planning to enter, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	594.34	22.01	3.04**
Student grade level	1	.01	.01	<1.0
Student group	2	541.19	270.60	37.37**
Student group X student grade level	2	22.90	11.46	1.58
Within	558	4037.90	7.24	

**Significant at the .01 level of probability.

Table 50. Means and standard deviations regarding perception of value of FFA program in preparing for occupation planning to enter, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1[a]	Students who planned to enter an on-farm agricultural occupation.	323	5.81	2.85
2[b]	Students who planned to enter an off-farm agricultural occupation.	102	4.88	2.92
3	Students who planned to enter a non-agricultural occupation.	166	3.33	2.69
	Total	591	4.95	3.01

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 3.

[b]Mean rating for Group 2 is significantly ($P < .01$) greater than mean rating for Group 3.

perception of the value of their vocational agriculture courses completed in preparing them to attend a postsecondary area vocational school upon graduation from high school. The analysis of variance summary for this variable is presented in Table 51. An F ratio of 2.29 was calculated for

Table 51. Analysis of variance summary table for students' perception of value of vo-ag courses completed in preparing to attend an area vocational school, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	444.96	16.49	2.29**
Student grade level	1	.26	.26	<1.0
Student group	2	114.21	57.11	7.94**
Student group X student grade level	2	41.10	20.56	2.86
Within	558	4014.54	7.20	

**Significant at the .01 level of probability.

the differences in variation of ratings for this variable among schools. This F ratio with 27 and 558 degrees of freedom is significant at the .01 level of probability. This significant difference received would indicate that students' ratings grouped by school differed as to their perception of the value of their high school vocational agriculture courses completed in preparing them to attend a postsecondary area vocational school. A significant ($P < .01$) F ratio was also observed for the differences in ratings of this statement by students grouped according to their occupational plans.

Table 52 presents the means and standard deviations for this variable.

Table 52. Means and standard deviations regarding students' perception of value of vo-ag courses completed in preparing to attend an area vocational school, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1[a]	Students who planned to enter an on-farm agricultural occupation.	323	4.87	2.73
2[b]	Students who planned to enter an off-farm agricultural occupation.	102	4.82	2.77
3	Students who planned to enter a non-agricultural occupation.	166	3.77	2.85
	Total	591	4.55	2.81

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 3.

[b]Mean rating for Group 2 is significantly ($P < .01$) greater than mean rating for Group 3.

A multiple comparison of all group means revealed that a mean rating of 4.87 for Group 1 is significantly ($P < .01$) greater than the mean rating of 3.77 for Group 3. Also, the mean rating of 4.82 for Group 2 is significantly ($P < .01$) greater than the mean rating of 3.77 for Group 3. Therefore, it may be concluded that students who planned to enter an on-farm agricultural occupation or an off-farm agricultural occupation perceived the vocational agriculture courses they had completed as being of greater value in preparing them to attend an area vocational school than did students who planned to enter a non-agricultural occupation.

Value of vocational agriculture courses completed in preparing to attend a four-year college or university

This statement of the rating scale requested that students indicate their perception of the value of their vocational agriculture courses completed in preparing them to attend a four-year college or university upon graduation from high school. A summary of the analysis of variance used to analyze the ratings received from this statement appears in Table 53. It was determined that a significant ($P < .01$) F ratio of 5.22 exists for ratings of this statement by students grouped according to their occupational plans.

Table 53. Analysis of variance summary table for students' perception of value of vo-ag courses completed in preparing to attend a four-year college or university, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	371.29	13.75	1.91*
Student grade level	1	4.55	4.55	<1.0
Student group	2	75.12	37.56	5.22**
Student group X student grade level	2	7.56	3.79	<1.0
Within	558	4019.20	7.20	

*Significant at the .05 level of probability.

**Significant at the .01 level of probability.

The means and standard deviations for student ratings grouped by their

occupational plans are summarized in Table 54. Using the Scheffe method

Table 54. Means and standard deviations regarding perception of value of vo-ag courses completed in preparing to attend a four-year college or university, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1	Students who planned to enter an on-farm agricultural occupation.	323	3.82	2.78
2[a]	Students who planned to enter an off-farm agricultural occupation.	102	4.32	2.74
3	Students who planned to enter a non-agricultural occupation.	166	3.12	2.65
	Total	591	3.71	2.76

[a]Mean rating for Group 2 is significantly ($P < .01$) greater than mean rating for Group 3.

of multiple comparison, it was found that a mean rating of 4.32 for Group 2 is significantly ($P < .01$) greater than the mean rating of 3.12 for Group 3. Thus, it may be concluded from this analysis that students who planned to enter an off-farm agricultural occupation believed that their vocational agriculture training is of greater value to them in preparing for a four-year college or university, than did students who planned to enter a non-agricultural occupation.

Value of high school courses completed in preparing to attend a postsecondary area vocational school

This item of the rating scale asked that students indicate their

perception of the value of their high school courses completed in preparing them to attend a postsecondary area vocational school upon graduation from high school. Table 55 reveals the analysis of variance summary for mean

Table 55. Analysis of variance summary table for students' perception of value of high school courses completed in preparing to attend an area vocational school, among students who planned to enter an on-farm agricultural occupation, students who planned to attend an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	292.14	10.82	1.49
Student grade level	1	1.37	1.37	<1.0
Student group	2	42.36	21.18	2.87
Student group X student grade level	2	13.61	6.81	<1.0
Within	558	4120.83	7.38	

ratings received from this statement. There were no significant F ratios among schools or student groups. It is conceived that students felt their courses of study in high school prepared them equally well for attending a postsecondary area vocational school, when analyzed by occupational plans.

Table 56 contains the means and standard deviations for this variable. Since there were no significant F values, a multiple comparison was not made.

Value of high school courses completed in preparing to attend a four-year college or university

Students were requested to indicate their perception of the value of

Table 56. Means and standard deviations regarding perception of value of high school courses completed in preparing to attend an area vocational school, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1	Students who planned to enter an on-farm agricultural occupation.	323	4.59	2.74
2	Students who planned to enter an off-farm agricultural occupation.	102	5.13	2.62
3	Students who planned to enter a non-agricultural occupation.	166	4.40	2.82
	Total	591	4.63	2.75

their high school courses completed in preparing them to attend a four-year college or university upon graduation from high school. The three-way analysis of variance used in analyzing the data for this variable appears in Table 57. A significant ($P < .01$) F ratio of 5.96 was observed for differences in mean ratings among students grouped according to their occupational plans.

The means and standard deviations are presented in Table 58. It was determined that a mean rating of 5.27 for Group 2 is significantly ($P < .01$) greater than mean ratings of 4.19 and 4.16 for Groups 1 and 3 respectively. From this analysis it may be concluded that students who planned to enter an off-farm agricultural occupation placed a greater value on their high school courses in preparing them to attend a four-year college or university than did students who planned to enter an on-farm agricultural

Table 57. Analysis of variance summary table for students' perception of value of high school courses completed in preparing to attend a four-year college or university, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	328.81	12.18	1.44
Student grade level	1	15.27	15.27	1.80
Student group	2	100.76	50.38	5.96**
Student group X student grade level	2	11.53	5.77	<1.0
Within	558	1721.07	8.46	

**Significant at the .01 level of probability.

Table 58. Means and standard deviations regarding students' perception of value of high school courses completed in preparing to attend a four-year college or university, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1	Students who planned to enter an on-farm agricultural occupation.	323	4.19	2.91
2[a]	Students who planned to enter an off-farm agricultural occupation.	102	5.27	2.86
3	Students who planned to enter a non-agricultural occupation.	166	4.16	3.02
	Total.	591	4.37	2.96

[a]Mean rating for Group 2 is significantly ($P < .01$) greater than mean ratings for Groups 1 and 3.

occupation or a non-agricultural occupation upon graduation from high school.

Value of supervised occupational experience program in preparing for occupation planning to enter

The students participating in this study were requested to indicate their perception of the value of their supervised occupational experience program in preparing them for the occupation they planned to enter upon completion of their formal education. A summary of the analysis of variance for this variable is presented in Table 59. A significant ($P < .01$) F ratio

Table 59. Analysis of variance summary table for students' perception of value of supervised occupational experience program in preparing for occupation planning to enter, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	548.32	20.31	2.55**
Student grade level	1	.06	.06	<1.0
Student group	2	502.47	251.24	31.60**
Student group X student grade level	2	11.13	5.57	<1.0
Within	558	4438.10	7.8	

**Significant at the .01 level of probability.

of 2.55 was calculated for variation among mean ratings of students from various schools participating in the study. A significant ($P < .01$) F ratio of 31.60 was also observed for mean ratings of students grouped

according to their occupational plans.

The means and standard deviations for mean ratings of students grouped according to their occupational plans are presented in Table 60. It was

Table 60. Means and standard deviations regarding students' perception of value of supervised occupational experience program in preparing for occupation planning to enter, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1[a]	Students who planned to enter an on-farm agricultural occupation.	323	6.10	2.89
2[b]	Students who planned to enter an off-farm agricultural occupation.	102	5.31	3.19
3	Students who planned to enter a non-agricultural occupation.	166	3.71	2.78
	Total	591	5.29	3.09

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 3.

[b]Mean rating for Group 2 is significantly ($P < .01$) greater than mean rating for Group 3.

determined that the mean rating of 6.10 for Group 1 is significantly ($P < .01$) greater than the mean rating of 3.71 for Group 3. Also, the mean rating of 5.31 for Group 2 is significantly ($P < .01$) greater than that of Group 3. From the analysis of this data, it appears that those students planning to enter agricultural occupations, either on-farm or off-farm, believed that their supervised occupational experience programs were of greater value to them in preparing for these types of occupations, than did

students who are planning to enter a non-agricultural occupation. This result may have some implication as to how the supervised experience programs are presently structured in the vo-ag curriculums and the need for future changes to meet the needs of more students.

Chances of success as a student attending a four-year college or university and studying animal science

This item of the rating scale asked that students indicate their perception of their chances for success as a student if they were to attend a four-year college or university and study animal science. Table 61 summarizes the analysis of variance used to analyze the data received from this variable. A significant ($P < .01$) F ratio of 17.38 was observed

Table 61. Analysis of variance summary table for students' perception of chances of success as a student if attended a four-year college or university and studied animal science, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	225.09	8.34	1.02
Student grade level	1	.13	.13	<1.0
Student group	2	284.06	142.03	17.38**
Student group X student grade level	2	13.04	6.52	<1.0
Within	558	4561.03	8.17	

**Significant at the .01 level of probability.

for differences among mean ratings for students grouped according to their

occupational plans.

Table 62 presents the means and standard deviations for this variable.

Table 62. Means and standard deviations regarding students' perception of chances for success as a student if attended a four-year college or university in animal science, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1[a]	Students who planned to enter an on-farm agricultural occupation.	323	4.42	2.85
2[b]	Students who planned to enter an off-farm agricultural occupation.	102	5.54	2.96
3	Students who planned to enter a non-agricultural occupation.	166	3.38	2.81
	Total	591	4.32	2.94

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 3.

[b]Mean rating for Group 2 is significantly ($P < .01$) greater than mean ratings for Groups 1 and 3.

The test for multiple comparison revealed that a mean rating of 5.54 for Group 2 is significantly ($P < .01$) greater than the mean ratings of 4.42 and 3.38 for Groups 1 and 3 respectively. Also, the mean rating of 4.42 for Group 1 is significantly ($P < .01$) greater than the mean rating of 3.38 for Group 3. Therefore, it may be concluded that students who planned to enter an off-farm agricultural occupation indicated a greater chance for success as a student at a four-year college or university in the field of animal science, than did students who planned to enter an on-farm

agricultural occupation or a non-agricultural occupation. Students who planned to enter an on-farm agricultural occupation felt they had a greater chance of success as a student at a four-year institution studying animal science, than did students who are planning to enter a non-agricultural occupation.

Chances of success as a student attending a four-year college or university and studying plant and soil science

Students were requested to indicate their perception of their chances for success as a student attending a four-year college or university and studying plant and soil science. The analysis of variance calculation for this variable appears in Table 63. It was revealed that an F ratio of 13.96

Table 63. Analysis of variance summary table for students' perception of chances of success as student if attended a four-year college or university and studied plant and soil science, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	278.90	10.32	1.45
Student grade level	1	2.58	2.58	<1.0
Student group	2	198.56	99.28	13.96**
Student group X student grade level	2	13.72	6.86	<1.0
Within	558	2964.91	7.11	

**Significant at the .01 level of probability.

existed for the mean rating of students grouped according to their

occupational plans. This F ratio with 2 and 558 degrees of freedom is significant at the .01 level of probability.

The means and standard deviations for this variable are summarized in Table 64. A mean rating of 4.75 for Group 2 is significantly ($P < .01$)

Table 64. Means and standard deviations regarding students' perception of chances for success as a student if attended a four-year college or university in plant and soil science, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1[a]	Students who planned to enter an on-farm agricultural occupation.	323	3.87	2.71
2[b]	Students who planned to enter an off-farm agricultural occupation.	102	4.75	2.81
3	Students who planned to enter a non-agricultural occupation.	166	2.99	2.59
	Total	591	3.78	2.75

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 3.

[b]Mean rating for Group 2 is significantly ($P < .01$) greater than mean rating for Group 3.
Mean rating for Group 2 is significantly ($P < .05$) greater than mean rating for Group 1.

greater than the mean rating of 2.99 for Group 3 and significantly ($P < .05$) greater than the mean response of 3.87 for Group 1. Also, the mean rating of 3.87 for Group 1 is significantly ($P < .01$) greater than the mean rating of 2.99 for Group 3. From the analysis of this variable, it may be concluded that students who planned to enter an off-farm agricultural occupation

indicated a greater chance for success as a student at a four-year college or university studying plant and soil science than students who planned to enter an on-farm agricultural occupation or students who planned to enter a non-agricultural occupation. It may also be concluded that students who planned to enter an on-farm agricultural occupation felt they would perform better in plant and soil science at a four-year college or university than would students who planned to enter a non-agricultural occupation.

Chances of success as a student attending a four-year college or university and studying agricultural mechanics

This statement of the rating scale requested that students indicate their perception of their chances for success as a student attending a four-year college or university and studying agricultural mechanics upon graduation from high school. The analysis of variance calculation is summarized in Table 65. A significant ($P < .05$) F ratio of 6.16 was found

Table 65. Analysis of variance summary table for students' perception of chances of success as a student if attended a four-year college or university and studied agricultural mechanics, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation.

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	257.94	9.55	1.18
Student grade level	1	49.87	49.87	6.16*
Student group	2	.01	.01	<1.0
Student group X student grade level	2	12.95	6.48	<1.0
Within	558	4515.75	8.10	

*Significant at the .05 level of probability.

for differences in mean ratings for student grade level. It may be surmized that the senior students may have received more instruction in agricultural mechanics than the junior students and therefore felt they would do better in this area of study at a four-year college or university.

Table 66 contains the means and standard deviations for the responses grouped by students' occupational plans.

Table 66. Means and standard deviations regarding students' perception of chances for success as a student if attended a four-year college or university in agricultural mechanics, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1	Students who planned to enter an on-farm agricultural occupation.	323	5.29	2.79
2	Students who planned to enter an off-farm agricultural occupation.	102	5.28	2.72
3	Students who planned to enter a non-agricultural occupation.	166	5.32	3.09
	Total	591	5.29	2.86

Chances of success as a student attending a four-year college or university and studying agricultural management

Students were asked to indicate their chances of success as a student if they were to attend a four-year college or university and study agricultural managment. A significant ($P < .01$) F ratio of 12.49 was calculated for differences in mean ratings of students grouped according to their occupational plans (Table 67).

Table 67. Analysis of variance summary table for students' perception of chances of success as a student if attended a four-year college or university and studied agricultural management, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	324.25	12.01	1.72*
Student grade level	1	11.35	11.35	1.53
Student group	2	173.93	86.97	12.49**
Student group X student grade level	2	1.23	.63	<1.0
Within	558	3883.97	6.97	

*Significant at the .05 level of probability.

**Significant at the .01 level of probability.

The means and standard deviations for this variable appear in Table 68. It was revealed that a mean rating of 5.19 for Group 1 is significantly ($P<.01$) greater than a mean rating of 4.04 for Group 3. It was also determined that a mean rating of 5.58 for Group 2 is significantly ($P<.01$) greater than the mean response of 4.04 for Group 3. Thus, it may be concluded that students who planned to enter an agricultural occupation upon completion of their formal education believed they would have a greater chance of success as a student attending a four-year college or university studying agricultural management than did students who planned to enter a non-agricultural occupation.

Chances of success as a student attending an area vocational school and studying animal science

Table 68. Means and standard deviations regarding students' perception of chances for success as a student if attended a four-year college or university in agricultural management, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1[a]	Students who planned to enter an on-farm agricultural occupation.	323	5.19	2.67
2[b]	Students who planned to enter an off-farm agricultural occupation.	102	5.58	2.69
3	Students who planned to enter a non-agricultural occupation.	166	4.04	2.71
	Total	591	4.93	2.74

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 3.

[b]Mean rating for Group 2 is significantly ($P < .01$) greater than mean rating for Group 3.

This item of the rating scale requested students to indicate their perception of success as a student if they were to attend a postsecondary area vocational school and study animal science. The three-way analysis of variance used to analyze the ratings received from this statement is summarized in Table 69. A significant ($P < .01$) F ratio of 13.08 was observed for the differences in mean ratings among students grouped according to their occupational plans.

Table 70 presents the means and standard deviations for this variable. It was revealed that a mean rating of 5.74 for Group 2 is significantly ($P < .01$) greater than the mean rating of 3.80 for Group 3 and significantly

Table 69. Analysis of variance summary table for students' perception of success as a student if attended an area vocational school and studied animal science, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation.

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	302.75	11.21	1.37
Student grade level	1	6.37	6.37	<1.0
Student group	2	213.67	106.84	13.08**
Student group X student grade level	2	8.15	4.08	<1.0
Within	558	4560.29	8.18	

**Significant at the .01 level of probability.

($P < .05$) greater than the mean rating of 4.87 for Group 1. It was also determined that the mean rating of 4.87 for Group 1 is significantly ($P < .01$) greater than the mean response of 3.80 for Group 3. From this analysis, it may be concluded that students who planned to enter an agricultural occupation perceived they would have a greater chance of success as a student studying animal science at an area vocational school, than did students who planned to enter a non-agricultural occupation. It was further determined that students planning to enter an off-farm agricultural occupation upon graduation from high school felt they would do better in animal science at an area vocational school than would students who were planning to enter an on-farm agricultural occupation.

Chances of success as a student attending an area vocational school and studying plant and soil science

Table 70. Means and standard deviations regarding students' perception of chances for success as a student if attended an area vocational school in animal science, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1[a]	Students who planned to enter an on-farm agricultural occupation.	323	4.87	2.86
2[b]	Students who planned to enter an off-farm agricultural occupation.	102	5.74	2.87
3	Students who planned to enter a non-agricultural occupation.	166	3.80	2.93
	Total	591	4.72	2.95

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 3.

[b]Mean rating for Group 2 is significantly ($P < .01$) greater than mean rating for Group 3.
Mean rating for Group 2 is significantly ($P < .05$) greater than mean rating for Group 1.

This statement of the rating scale asked that students indicate their chances of success as a student if they were to attend a postsecondary area vocational school and study plant and soil science. Table 71 summarizes the analysis of variance used in analyzing the data for this variable. A significant ($P < .01$) F ratio of 11.65 was calculated for the differences in mean ratings of students grouped according to their occupational plans.

The means and standard deviations for this variable appear in Table 72. A multiple comparison of the group means revealed that the mean ratings of 4.51 for Group 1 and 4.98 for Group 2 are significantly ($P < .01$) greater

Table 71. Analysis of variance summary table for students' perception of chances of success as a student if attended an area vocational school and studied plant and soil science, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	373.53	13.96	1.89*
Student grade level	1	20.79	20.79	2.84
Student group	2	170.35	85.18	11.65**
Student group X student grade level	2	1.54	.77	<1.0
Within	558	4076.32	7.31	

*Significant at the .05 level of probability.

**Significant at the .01 level of probability.

than the mean rating of 3.45 for Group 3. It appears that students who planned to enter an agricultural occupation, either on-farm or off-farm, perceived they had a greater opportunity for success as a student at an area vocational school studying plant and soil science, than did students who indicated they planned to enter a non-agricultural occupation.

Chances of success as a student attending an area vocational school and studying agricultural mechanics

Students were requested to indicate how they would rate their chances of success if they were to attend a postsecondary area vocational school and study agricultural mechanics. The three-way analysis of variance is summarized in Table 73. An F ratio of 9.21 was calculated for difference among mean ratings of students grouped according to their grade level

Table 72. Means and standard deviations regarding students' perception of chances for success as a student if attended an area vocational school in plant and soil science, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1[a]	Students who planned to enter an on-farm agricultural occupation.	323	4.51	2.76
2[b]	Students who planned to enter an off-farm agricultural occupation.	102	4.98	2.90
3	Students who planned to enter a non-agricultural occupation.	166	3.45	2.67
	Total	591	4.20	2.81

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 3.

[b]Mean rating for Group 2 is significantly ($P < .01$) greater than mean rating for Group 3.

(junior or senior). This F ratio with 1 and 558 degrees of freedom is significant at the .01 level of probability. No other F ratio was significant in this analysis.

Table 74 contains the means and standard deviations for this variable grouped by students' occupational plans.

Chances of success as a student attending an area vocational school and studying agricultural management

This item of the rating scale asked that students indicate their chances of success if they were to attend an area vocational school and study agricultural management. Table 75 summarizes the analysis of variance

Table 73. Analysis of variance summary table for students' perception of chances of success as a student if attended an area vocational school and studied agricultural mechanics, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	194.66	7.21	<1.0
Student grade level	1	71.92	71.92	9.21**
Student group	2	10.77	5.38	<1.0
Student group X student grade level	2	19.54	9.77	1.25
Within	558	4355.49	7.81	

**Significant at the .01 level of probability.

Table 74. Means and standard deviations regarding students' perception of chances for success as a student if attended an area vocational school in agricultural mechanics, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1	Students who planned to enter an on-farm agricultural occupation.	323	6.13	2.66
2	Students who planned to enter an off-farm agricultural occupation.	102	5.76	2.73
3	Students who planned to enter a non-agricultural occupation.	166	5.84	3.11
	Total	591	5.98	2.80

used in analyzing the data received from this variable. A significant

Table 75. Analysis of variance summary table for students' perception of chances of success as a student if attended an area vocational school and studied agricultural management, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	573.32	21.25	2.93**
Student grade level	1	40.95	40.95	5.65*
Student group	2	226.33	113.17	15.61**
Student group X student grade level	2	3.29	1.65	<1.0
Within	558	4044.40	7.25	

*Significant at the .05 level of probability.

**Significant at the .01 level of probability.

($P < .01$) F ratio of 15.61 was calculated for differences in mean ratings of students grouped according to their occupational plans.

The means and standard deviations for this variable are revealed in Table 76. It was determined that mean ratings of 5.81 for Group 1 and 6.13 for Group 2 are significantly ($P < .01$) greater than the mean rating of 4.43 for Group 3. Thus, it may be concluded that students who planned to enter an agricultural occupation upon graduation from high school, felt they would perform better as students at an area vocational school studying agricultural management, than would students who planned to enter a non-agricultural occupation.

Table 76. Means and standard deviations regarding students' perception of chances for success as a student if attended an area vocational school in agricultural management, for students grouped by their occupational plans

Group number	Student group	Number	Mean response	Standard deviation
1[a]	Students who planned to enter an on-farm agricultural occupation.	323	5.81	2.75
2[b]	Students who planned to enter an off-farm agricultural occupation.	102	6.13	2.63
3	Students who planned to enter a non-agricultural occupation.	166	4.43	2.83
	Total	591	5.48	2.82

[a]Mean rating for Group 1 is significantly ($P < .01$) greater than mean rating for Group 3.

[b]Mean rating for Group 2 is significantly ($P < .01$) greater than mean rating for Group 3.

Students' Level of Achievement in Agriculture

Animal Science Achievement Test scores

Hypothesis 2 stated that there will be significant differences in Animal Science Achievement Test scores among high school vocational agriculture students grouped according to their stated occupational plans upon completion of their formal education.

The data utilized in testing this hypothesis were collected using the Agribusiness Achievement Test developed by Peterson, et al. The raw scores from this test were transformed to standard scores for analysis.

A three-way analysis of variance was used to analyze the data received

from the Animal Science Test scores. A summary of the analysis of variance for this variable appears in Table 77. The sources of variation that were

Table 77. Analysis of variance summary table for animal science achievement test scores, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	7498.51	277.72	4.17**
Student grade level	1	240.51	240.51	3.61
Student group	2	1809.23	904.62	13.58**
Student group X student grade level	2	11.78	5.89	<1.0
Within	558	37177.58	66.63	

**Significant at the .01 level of probability.

tested are as follows: schools, student grade level (junior or senior), and student group (grouped according to occupational plans). An F ratio of 4.17 was observed for differences in students' mean Animal Science Test scores among the various schools participating in the study. This F ratio with 27 and 558 degrees of freedom is significant at the .01 level of probability. A significant ($P<.01$) F ratio of 13.58 was also observed for differences in scores of students grouped according to their occupational plans upon completion of their formal education.

The Animal Science Achievement Test scores for students grouped by their occupational plans are presented in Table 78. The Scheffe procedure for multiple comparison was used to test for significant differences in

Table 78. Mean animal science achievement test scores for students grouped by their occupational plans

Group number	Student group	Number	Mean score	Standard deviation
1[a]	Students who planned to enter an on-farm agricultural occupation.	323	57.32	8.33
2[b]	Students who planned to enter an off-farm agricultural occupation.	102	60.20	8.45
3	Students who planned to enter a non-agricultural occupation.	166	54.46	9.70
	Total	591	57.02	8.97

[a]Mean score for Group 1 is significantly ($P < .01$) greater than mean score for Group 3.

[b]Mean score for Group 2 is significantly ($P < .01$) greater than mean scores for Groups 1 and 3.

mean scores among student groups. By this procedure, it was determined that the mean scores of 57.32 and 60.20 for Groups 1 and 2 respectively, were significantly ($P < .01$) higher than the mean score of 54.46 for Group 3. It was also revealed that the mean score of 60.20 for Group 2 was significantly ($P < .01$) higher than the mean score of 57.32 for Group 1. From the analysis of these Animal Science Achievement Test scores, it may be concluded that students who planned to enter an agricultural occupation, either on-farm or off-farm possessed a higher level of achievement in animal science than students who planned to enter a non-agricultural occupation. Students planning to enter an off-farm occupation possessed a higher level of achievement in animal science than did students who planned to

enter an on-farm agricultural occupation.

Plant and Soil Science Achievement Test scores

Hypothesis 3 stated that there will be significant differences in Plant and Soil Science Achievement Test scores among high school vocational agriculture students grouped according to their stated occupational plans upon completion of their formal education. Data used in testing this hypothesis were collected by use of the Peterson Agribusiness Achievement Test.

The three-way analysis of variance used in analyzing the data received from this variable is summarized in Table 79. A significant (P .01)

Table 79. Analysis of variance summary table for plant and soil science achievement test scores, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation.

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	16507.35	611.38	9.14**
Student grade level	1	141.53	141.53	2.12
Student group	2	1085.99	542.99	8.12**
Student group X student grade level	2	53.93	26.96	<1.0
Within	558	37310.78	66.86	

**Significant at the .01 level of probability.

F ratio of 9.14 was observed for the variation in mean scores among students from various schools sampled. A significant (P<.01) F ratio of 8.12 was observed for differences in mean Plant and Soil Science Test scores among

students grouped by their occupational plans.

Table 80 presents the means and standard deviations for test scores of students grouped according to their occupational plans. It was deter-

Table 80. Mean plant and soil science achievement test scores for students grouped by their occupational plans

Group number	Student group	Number	Mean score	Standard deviation
1[a]	Students who planned to enter an on-farm agricultural occupation.	323	55.97	9.42
2[b]	Students who planned to enter an off-farm agricultural occupation.	102	57.26	10.14
3	Students who planned to enter a non-agricultural occupation.	166	53.04	9.58
	Total	591	55.37	9.70

[a]Mean score for Group 1 is significantly ($P < .05$) greater than mean score for Group 3.

[b]Mean score for Group 2 is significantly ($P < .01$) greater than mean score for Group 3.

mined by multiple comparison that the mean score of 57.26 for Group 2 is significantly ($P < .01$) higher than the mean score of 53.04 for Group 3. Also, it was further determined that the mean score of 55.97 for Group 1 is significantly ($P < .05$) greater than the mean score of 53.04 for Group 3. It appears that students who planned to enter an on-farm agricultural occupation or an off-farm agricultural occupation possessed a higher level of achievement in plant and soil science than students who planned to enter a non-agricultural occupation upon graduation from high school.

Agricultural Mechanics Achievement Test scores

Hypothesis 4 stated that there will be significant differences in Agricultural Mechanics Achievement Test scores among high school vocational agriculture students grouped according to their stated occupational plans upon completion of their formal education. The data utilized in testing this hypothesis were collected by using the Peterson Agribusiness Achievement Test.

A summary of the analysis of variance used in analyzing the data for this variable appears in Table 81. It was determined that a significant

Table 81. Analysis of variance summary table for agricultural mechanics achievement test scores, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	11599.06	429.59	6.96**
Student grade level	1	613.32	613.32	9.94**
Student group	2	154.58	77.29	1.25
Student group X student grade level	2	134.35	67.18	1.09
Within	558	34417.95	61.68	

**Significant at the .01 level of probability.

($P < .01$) F ratio of 6.96 existed for differences in mean test scores among students from the various schools. A significant ($P < .01$) F ratio of 9.94 was observed for the differences in mean scores for student grade level as a source of variation in the analysis of variance calculation. No

significant F ratio was observed for differences in mean scores among students grouped by their occupational plans.

The mean scores and standard deviations for students grouped by their occupational plans are presented in Table 82.

Table 82. Mean agricultural mechanics achievement test scores for students grouped by their occupational plans

Group number	Student group	Number	Mean score	Standard deviation
1	Students who planned to enter an on-farm agricultural occupation.	323	59.57	8.96
2	Students who planned to enter an off-farm agricultural occupation.	102	59.78	8.95
3	Students who planned to enter a non-agricultural occupation.	166	58.37	8.86
	Total	591	59.27	8.93

Agricultural Management Achievement Test scores

Hypothesis 5 stated that there will be significant differences in Agricultural Management Achievement Test scores among vocational agriculture students grouped according to their stated occupational plans upon completion of their formal education. The data utilized in testing this hypothesis were collected by use of the Peterson Agribusiness Achievement Test.

Table 83 summarizes the three-way analysis of variance used in analyzing the data for this variable. A significant ($P < .01$) F ratio of 9.60 was observed for differences among schools. It was also determined

Table 83. Analysis of variance summary table for agricultural management achievement test scores, among students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation

Source of variation	Degrees of freedom	Sum of squares	Mean square	F ratio
School	27	19704.56	729.80	9.60**
Student grade level	1	210.03	210.03	2.76
Student group	2	1404.42	702.21	9.24**
Student group X student grade level	2	134.80	67.40	<1.0
Within	558	42421.78	76.02	

**Significant at the .01 level of probability.

that an F ratio of 9.24 existed for differences in mean test scores among students grouped by their occupational plans. This F ratio with 2 and 558 degrees of freedom is significant at the .01 level of probability.

The mean scores and standard deviations for this variable are revealed in Table 84. Using the Scheffe method of multiple comparison for group means, it was found that a mean score of 59.95 for Group 2 is significantly ($P < .01$) higher than the mean score of 55.58 for Group 3. Also, Group 1 mean score of 58.99 is significantly ($P < .05$) greater than the mean score of 55.58 for Group 3. Therefore, it appears that students who planned to enter an agricultural occupation upon graduation from high school, possessed a higher level of achievement in agricultural management than did students who planned to enter a non-agricultural occupation.

Table 84. Mean agricultural management achievement test scores for students grouped by their occupational plans

Group number	Student group	Number	Mean score	Standard deviation
1[a]	Students who planned to enter an on-farm agricultural occupation.	323	58.99	10.15
2[b]	Students who planned to enter an off-farm agricultural occupation.	102	59.95	10.63
3	Students who planned to enter a non-agricultural occupation.	166	55.58	10.54
	Total	591	58.20	10.46

[a]Mean score for Group 1 is significantly ($P < .05$) greater than mean score for Group 3.

[b]Mean score for Group 2 is significantly ($P < .01$) greater than mean score for Group 3.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this research study was to determine the occupational plans of junior and senior vocational agriculture students and assess differences in factors related to their occupational plans upon completion of their formal education.

The population for this study consisted of all junior and senior students enrolled in secondary vocational agriculture programs in Iowa. Data were collected from junior and senior students in a sample of 30 high schools which provided vocational agriculture programs during the 1974-75 school year. A total of 623 students participated in the study..

In completing the instruments, each student was expected to state his/her occupational plans upon completion of their formal education. Based upon the students' occupational plans, the following groups were identifed and studied.

Group 1 - Vocational agriculture students who planned to enter an on-farm agricultural occupation.

Group 2 - Vocational agriculture students who planned to enter an off-farm agricultural occupation.

Group 3 - Vocational agriculture students who planned to enter a non-agricultural occupation.

The instruments used in collecting the data for this study are as follows:

A. Personal, Family and Community Data Related to Educational and Occupational Plans of Iowa Vocational Agriculture Students. This instrument was developed to assess the personal, family and community variables related to the educational and occupational plans of high school vocational agriculture students.

B. Agribusiness Achievement Test. This instrument, developed by Peterson, et al. was selected to assess vocational agriculture students' achievement in the following areas of agriculture:

1. Animal Science.
2. Plant and Soil Science.
3. Mechanics.
4. Management.

The data for this study were collected by administering these instruments to participants during December, 1974 and January, 1975. Data from the instruments were tabulated, scored, and transferred to IBM cards. The Agribusiness Achievement Tests were hand scored by the research project staff using scoring keys provided by the publisher of the tests. The raw scores were transformed to standard scores.

Data from the instruments were analyzed utilizing computer facilities at the Computation Center, Iowa State University, Ames, Iowa. The statistics used in analyzing the data included chi-square and three-way analysis of variance.

Summary of Findings

This research study was a descriptive investigation of possible differences in selected factors related to the occupational plans among high school vocational agriculture students grouped by their occupational plans upon completion of their formal education.

The findings of the study are as follows:

1. Over one-half (54.4 percent) of the junior and senior vocational agriculture students participating in this study indicated they planned to enter an on-farm agricultural occupation. About 18 percent of the 623 junior and senior vocational agriculture

students participating indicated that they planned to enter an off-farm agricultural occupation, while the remaining 28 percent planned to enter a non-agricultural occupation upon completion of their formal education.

2. A chi-square analysis revealed that no significant relationship exists between students' grade levels and students' occupational plans when these plans are categorized as: students who planned to enter an on-farm agricultural occupation, students who planned to enter an off-farm agricultural occupation, and students who planned to enter a non-agricultural occupation.

3. The three-way analysis of variance for students responses to the semesters of vocational agriculture they have completed, grouped according to their occupational plans resulted in a significant ($P < .01$) F ratio of 5.08., Significant F ratio's of 5.38 and 199.40 were observed among schools and student grade level respectively. These were significant at the .01 level of probability. A significant ($P < .05$) F ratio was calculated for interaction between student group and grade level. Using the Scheffe method of multiple comparison of group means, it was found that a mean response of 5.59 for Group 1 is significantly ($P < .01$) greater than the mean response of 5.18 for Group 3.

4. Results of the analysis of variance for students' responses to grades received in vocational agriculture grouped by their occupational plans revealed an F ratio of 15.98 which is significant at the .01 level of probability with 2 and 558 degrees of freedom. A significant ($P < .01$) F ratio of 3.22 and 3.96 were

calculated for schools and student grade level respectively. Multiple comparison of group means disclosed that the mean responses of 4.53 and 4.84 for Groups 1 and 3 are significantly ($P < .01$) greater than the mean response of 3.61 for Group 2.

5. A three-way analysis of variance for students' responses to grades received in all courses revealed an F ratio of 3.09 for differences among schools. This F ratio is significant at the .01 level of probability. An analysis of the mean responses to this variable by students grouped according to their occupational plans revealed an F ratio of 10.58. This F ratio with 2 and 558 degrees of freedom is significant at the .01 level of probability. Using the Scheffe method of multiple comparison, it was found that the mean response of 5.24 for Groups 1 and 3 is significantly ($P < .01$) greater than the mean response of 4.36 for Group 2.

6. A chi-square analysis revealed a significant ($P < .05$) relationship between students' participation in the FFA, and students occupational plans.

7. A significant ($P < .001$) chi-square value of 15.00 was calculated for the relationship between students' participation in 4-H Club and students' occupational plans. It was revealed that over 43 percent of those students planning to enter an off-farm agricultural occupation participated in 4-H Club activities, while 26.7 percent and 22.5 percent participated from those groups that planned to enter an on-farm agricultural occupation or a non-agricultural occupation respectively.

8. A chi-square analysis disclosed a significant ($P < .001$) chi-square value of 23.90 for the relationship between students' participation in student government and students' occupational plans. It was observed that 16.5 percent of those students planning to enter an off-farm agricultural occupation participated in student government. This compares to only 3.6 percent participation by students planning to enter an on-farm agricultural occupation and 5.2 percent participation by those planning to enter a non-agricultural occupation.

9. A significant ($P < .001$) chi-square value of 56.58 was calculated for the relationship between students' place of residence and students' occupational plans upon graduation from high school. This analysis revealed that over 81 percent of the students participating in this study indicated they were living on farms.

10. A three-way analysis of variance for students' responses to number of years of posthigh school education planned grouped by their occupational plans revealed a significant ($P < .01$) F ratio of 2.75 for differences among schools. A significant ($P < .01$) F ratio of 55.12 was observed for differences among mean responses of student groups. Also an F ratio of 5.26 for interaction between student group and grade level was found to be significant at the .01 level of probability. A multiple comparison of group means disclosed that the mean response of 3.66 for Group 2 is significantly ($P < .01$) greater than the mean responses of 1.78 and 2.32 for Groups 1 and 3 respectively. Also; the mean response of 2.32 for Group 3 is significantly

($P < .01$) greater than the mean response of 1.78 for Group 1.

11. When asked to what extent they worked while in high school, a majority (52.3 percent) of the students sampled indicated they sometimes work outside their family and home or farm. Almost 30 percent of the students in the three groups indicated that they had a fairly regular job outside their family and home or farm. The remaining 18.8 percent responded that they did not work outside the family and home or farm. A chi-square value of 21.68 was significant at the .001 level of probability for the relationship between the extent at which students were working outside their family and home or farm, and their occupational plans.

12. The majority (47.2 percent) of the students in all three student groups indicated that their father had the most influence on their choice of occupation. A greater percentage (58.5 percent) of the students who planned to enter an on-farm agricultural occupation indicated their father had the most influence on their choice of occupation. This is in comparison to 37.4 percent for Group 2 and 30.8 percent for Group 3. A significant ($P < .001$) chi-square value of 70.34 was calculated for the relationship between students' response to "significant others" influencing their occupational choice, and their occupational plans.

13. Students grouped by their grade level (junior or senior) differed significantly ($P < .05$) in their response to the amount of certainty regarding their occupational choice. A significant

($P < .01$) F ratio of 10.32 was observed for students' responses for the amount of certainty regarding their occupational choice grouped according to their occupational plans. A multiple comparison revealed that a mean rating of 7.27 for Group 1 is significantly ($P < .01$) greater than the mean ratings of 6.28 and 6.51 for Groups 2 and 3 respectively.

14. The analysis of variance for students' ratings in regard to the amount of thought they had given to their occupational choice grouped by grade level revealed an F ratio of 14.32. This ratio was significant at the .01 level of probability with 1 and 558 degrees of freedom. A significant ($P < .05$) F ratio of 4.64 was found for students ratings grouped by their occupational plans. The Scheffe multiple comparison test disclosed that the mean rating of 7.83 for Group 1 is significantly ($P < .01$) greater than the mean rating of 7.18 for Group 3.

15. Results of the analysis of variance for students' responses to their perception of the ability they possess for the occupation they are planning to enter grouped by their occupational plans revealed a significant ($P < .01$) F ratio of 13.96. A multiple comparison of group means disclosed that the mean rating of 8.16 for Group 1 is significantly greater than the mean rating of 7.55 for Group 2 at the .05 level of probability, and significantly greater than the mean rating of 7.21 for Group 3 at the .01 level of probability.

16. A significant ($P < .01$) F ratio of 10.41 was observed in differences of mean ratings by schools for the amount of work experience received in occupation planning to enter. A

significant ($P < .01$) F ratio of 105.13 was calculated for mean ratings of students grouped according to their occupational plans. A multiple comparison revealed that a mean rating of 8.59 for students planning to enter an on-farm agricultural occupation is significantly ($P < .01$) greater than the mean rating of 5.53 for students planning to enter an off-farm agricultural occupation and 4.95 for students planning to enter a non-agricultural occupation.

17. The analysis of variance for students' ratings for their perception of knowledge of occupation planning to enter revealed a significant ($P < .01$) F ratio of 15.75 for differences among schools. The analysis of variance also revealed a significant ($P < .01$) F ratio of 40.78 for differences among students' mean ratings grouped according to their occupational plans. The Scheffe method of multiple comparison disclosed that the mean rating of 7.91 for Group 1 is significantly ($P < .01$) greater than the mean ratings of 6.53 and 6.14 for Groups 2 and 3 respectively.

18. A three-way analysis of variance for the mean ratings of students' perceptions of the value of their high school training for the occupation they are planning to enter revealed a significant ($P < .01$) F ratio of 2.66 for differences among schools and a significant ($P < .01$) F ratio of 11.79 for students grouped according to their occupational plans. A third significant ($P < .01$) F ratio of 5.35 was observed for the interaction between student group and grade level. A multiple comparison test of all student group means revealed that the mean rating of 6.04

for Group 1 is significantly ($P < .01$) greater than the mean response of 4.70 for Group 3. Also, the mean rating of 5.36 for Group 2 is significantly ($P < .01$) greater than the mean rating of 4.70 for Group 3.

19. A summary of the analysis of variance for the mean ratings in regard to students' perceptions of the amount of training their high school has provided for the occupation they are planning to enter revealed a significant ($P < .01$) F ratio of 3.34 for variation among school means and a significant ($P < .01$) F ratio of 23.20 for differences among student group means when grouped according to their occupational plans. The mean rating of 5.68 for Group 1 is significantly ($P < .01$) greater than the mean ratings of 4.48 and 3.84 for Groups 2 and 3 respectively.

20. A three-way analysis of variance for students' perception of the amount of encouragement they had received from their father to continue their education beyond high school resulted in a significant ($P < .05$) F ratio of 1.89 for differences in mean ratings among schools. Also, a significant ($P < .01$) F ratio of 6.09 was calculated for differences in group means for students grouped according to their occupational plans. It was revealed that a mean rating of 5.67 for Group 2 is signficantly ($P < .01$) greater than the mean ratings of 4.30 and 4.81 for Groups 1 and 3 respectively.

21. When the students' responses were analyzed regarding their perception of the amount of encouragement they had received from their mother to continue their education beyond high school, a

significant ($P < .01$) F ratio of 8.08 was found for differences in mean ratings of the three student groups. Further analysis revealed that the mean rating of 6:58 for Group 2 is significantly greater than the mean rating of 4.93 for Group 1 at the .01 level of probability. Also, the mean rating of 6.58 is significantly greater than the mean response of 5.43 for Group 3 at the .05 level of probability.

22. An F ratio of 2.06 was observed for differences in mean ratings among schools when students were asked their perception of the amount of encouragement they had received from their father to attend a four-year college or university. This F ratio was significant at the .01 level of probability with 27 and 558 degrees of freedom. A significant ($P < .01$) F ratio of 13.84 was revealed for differences in mean ratings among student groups. A multiple comparison of these group means revealed that the mean rating of 3.95 for Group 2 is significantly ($P < .01$) greater than the mean ratings of 2.07 and 2.43 for Groups 1 and 3 respectively. However, it should be further pointed out that all three of these group means are considerably below the midpoint of 5.0 on the rating scale used.

23. The three-way analysis of variance for the mean ratings by students in regard to the amount of encouragement they had received from their mother to attend an area vocational school resulted in a significant ($P < .05$) F ratio of 4.57 for differences in mean ratings for students grouped by grade level (junior or senior). Other F ratios calculated in the analysis were not significant.

24. An F ratio of 1.57 was observed for differences in the mean ratings among schools regarding the amount of encouragement students had received from their mother to attend a four-year college or university. This F ratio with 27 and 558 degrees of freedom is significant at the .05 level of probability. A significant ($P < .01$) F ratio of 18.74 was also observed for differences in mean ratings of students grouped according to their occupational plans. It was found that a mean rating of 4.83 for Group 2 is significantly ($P < .01$) greater than the mean ratings of 2.54 and 2.69 for Groups 1 and 3 respectively.
25. The analysis of variance of the mean ratings for students' perception of the amount of encouragement they had received from their vocational agriculture instructor to attend an area vocational school revealed a significant ($P < .01$) F ratio of 2.72 for differences among schools. A significant F ratio of 10.61 was observed for the differences in mean ratings for students grouped according to their grade level (junior or senior). This F ratio with 1 and 558 degrees of freedom is significant at the .01 level of probability.
26. When an analysis of variance was made of students perception of the amount of encouragement they had received from their vocational agriculture instructor to attend a four-year college or university, a significant ($P < .01$) F ratio of 2.05 was revealed for differences among schools. Also, a significant ($P < .05$) F ratio of 4.57 was observed for differences in mean ratings of students grouped by grade level. A significant ($P < .01$) F ratio

of 7.76 was found for the analysis of differences in mean ratings of students grouped according to their occupational plans. A multiple comparison was made of these group means to identify where differences occurred. It was revealed that a mean rating of 3.56 for Group 2 is significantly ($P < .01$) greater than the mean ratings of 2.51 and 2.32 for Groups 1 and 3 respectively.

27. A three-way analysis of variance summary for students' perceptions of the value of their high school vocational agriculture courses completed in preparing them for the occupation they are planning to enter revealed a significant F ratio of 2.28 for variation among schools. This F ratio is significant at the .01 level of probability. A significant ($P < .01$) F ratio of 36.02 was observed for differences in mean ratings of students grouped according to their occupational plans. The Scheffe method of multiple comparison disclosed that a mean rating of 6.16 for students planning to enter an on-farm agricultural occupation is significantly ($P < .01$) greater than the mean rating of 3.96 for students planning to enter a non-agricultural occupation. Also, the mean rating of 5.42 for students planning to enter an off-farm agricultural occupation was significantly ($P < .01$) greater than the mean rating of 3.96 for students planning to enter a non-agricultural occupation.

28. A summary of the analysis of variance for students' perceptions of the value of their FFA program in preparing them for the occupation they are planning to enter revealed a significant

($P < .01$) F ratio of 3.04 for differences in mean ratings among schools. A significant ($P < .01$) F ratio of 37.37 was calculated for differences among students grouped according to occupational plans. A multiple comparison of the group means revealed that the mean rating of 5.81 for Group 1 and the mean rating of 4.88 for Group 2 are significantly ($P < .01$) greater than the mean rating of 3.33 for Group 3.

29. A significant ($P < .01$) F ratio of 2.29 was observed for differences among schools regarding students' perceptions of the value of their high school vo-ag courses completed in preparing them to attend an area vocational school. A significant ($P < .01$) F ratio of 7.94 was also observed among the three student groups. A multiple comparison of group means indicated that the mean ratings of 4.87 and 4.82 for Groups 1 and 2 respectively, are significantly greater than the mean rating of 3.77 for Group 3.

30. An analysis of variance regarding students' perception of the value of their vocational agriculture courses completed in preparing them to attend a four-year college or university revealed a significant ($P < .05$) F ratio of 1.91 for differences among schools. It was also determined that the F ratio of 5.22 for students grouped according to their occupational plans is significant at the .01 level of probability. It was found that the mean rating of 4.32 for Group 2 is significantly ($P < .01$) greater than the mean rating of 3.12 for Group 3.

31. A summary of the analysis of variance revealed a significant

($P < .01$) F ratio of 5.96 for differences in students' mean responses grouped according to occupational plans when asked their perception of the value of their high school courses completed in preparing them to attend a four-year college or university. It was observed from this difference that the mean rating of 5.27 for Group 2 is significantly ($P < .01$) greater than the mean ratings of 4.19 and 4.16 for Groups 1 and 3 respectively.

32. A significant F ratio of 2.55 was observed for differences among schools regarding students' perception of the value of their supervised occupational experience program in preparing them for the occupation they are planning to enter. This F ratio was significant at the .01 level of probability with 27 and 558 degrees of freedom. Also, a significant ($P < .01$) F ratio of 31.60 was revealed for differences in mean ratings when students were grouped according to occupational plans. A multiple comparison of these group means indicated that the mean ratings of 6.10 and 5.31 for Groups 1 and 2 respectively, are significantly ($P < .01$) greater than the mean rating of 3.71 for Group 3.

33. The analysis of variance calculation revealed a significant ($P < .01$) F ratio of 17.38 among the three student groups for their perception of chances of success as a student attending a four-year college or university and studying animal science. The Scheffe procedure for multiple comparison disclosed that a mean rating of 5.54 for Group 2 is significantly ($P < .01$) greater than the mean ratings of 4.42 and 3.38 for Groups 1 and 3

respectively. Also it was found that the mean rating of 4.42 for Group 1 is significantly ($P < .01$) greater than the mean rating of 3.38 for Group 3.

34. The three-way analysis of variance revealed a significant ($P < .01$) F ratio of 13.96 among student groups for their perception of chances of success as a student attending a four-year college or university and studying plant and soil science. A multiple comparison of the three group means disclosed that the mean rating of 3.87 for Group 1 is significantly ($P < .01$) greater than the mean rating of 2.99 for Group 3. It was further revealed that the mean rating of 4.75 for Group 2 is significantly greater than the mean rating of 2.99 for Group 3 at the .01 level of probability, and significantly greater than the mean rating of 3.87 for Group 1 at the .05 level of probability.

35. A significant ($P < .05$) F ratio of 6.16 was calculated for the variation among student grade level (junior or senior), regarding students' perception of their chances of success as a student attending a four-year college or university and studying agricultural mechanics. No other significant F ratios were found in this analysis.

36. The analysis of variance calculation revealed a significant ($P < .05$) F ratio of 1.72 for differences among schools in regard to students' perceptions of their chances of success as a student attending a four-year college or university and studying agricultural management. An F ratio of 12.49 was

observed for differences among the three student groups. This F ratio is significant at the .01 level of probability with 2 and 558 degrees of freedom. A multiple comparison indicated that the mean ratings of 5.19 and 5.58 for Groups 1 and 2 respectively, are significantly ($P < .01$) greater than the mean rating of 4.04 for Group 3.

37. The three-way analysis of variance summary for students' perceptions of chances of success as a student attending an area vocational school and studying animal science disclosed a significant ($P < .01$) F ratio of 13.08 for differences in mean ratings of students grouped according to their occupational plans. It was determined that the mean rating of 4.87 for Group 1 is significantly ($P < .01$) greater than the mean rating of 3.80 for Group 3. It was further determined that the mean rating of 5.74 for Group 2 is significantly ($P < .01$) greater than the mean rating of 3.80 for Group 3; and also significantly ($P < .05$) greater than the 4.87 mean rating for Group 1.

38. A significant ($P < .05$) F ratio of 1.89 was calculated for differences in mean ratings among schools regarding students' perceptions of chances for success as a student attending an area vocational school and studying plant and soil science. An F ratio of 11.65 was observed for differences in mean ratings among student groups. This F ratio was significant at the .01 level of probability. A multiple comparison of group means revealed that the mean ratings of 4.51 for Group 1 and 4.98 for Group 2 are significantly ($P < .01$) greater than the mean

rating of 3.45 for Group 3.

39. The three-way analysis of variance for students' perceptions of chances for success as a student attending an area vocational school and studying agricultural mechanics revealed a significant ($P < .01$) F ratio of 9.21 for differences in mean ratings of students grouped by grade level (junior or senior).

40. The analysis of variance calculation for students' perceptions of chances of success as a student attending an area vocational school and studying agricultural management yielded a significant ($P < .01$) F ratio of 2.93 for differences among schools. Also, an F ratio of 5.65 which is significant at the .05 level of probability was observed for differences in student grade level. When students grouped according to occupational plans were examined, a significant ($P < .01$) F ratio of 15.61 was revealed. It was found that the mean ratings of 5.81 and 6.13 for Groups 1 and 2 respectively, are significantly ($P < .01$) greater than the mean rating of 4.43 for Group 3.

41. A significant ($P < .01$) F ratio of 4.17 was disclosed for differences in students' Animal Science Achievement Test scores among the various schools participating in the study. Also observed was a significant ($P < .01$) F ratio of 13.58 for differences in mean Animal Science Achievement Test scores among students grouped according to occupational plans upon completion of their formal education. A multiple comparison of group means revealed that the mean score of 57.32 for Group 1 is significantly ($P < .01$) higher than the mean score of 54.46

for Group 3. Also, it was found that the mean score of 60.20 for Group 2 is significantly ($P < .01$) higher than the mean scores of 57.32 and 54.46 for Groups 1 and 3 respectively.

42. The analysis of variance calculation for students' scores on the Plant and Soil Science Achievement Test revealed a significant ($P < .01$) F ratio of 9.14 for differences in mean scores among schools. An F ratio of 8.12 was observed for differences in mean scores among the three student groups. This F ratio is significant at the .01 level of probability with 2 and 558 degrees of freedom. It was determined by multiple comparison that the mean score of 55.97 for Group 1 is significantly ($P < .05$) higher than the mean score of 53.04 for Group 3. It was also discovered that the mean score of 57.26 for Group 2 is significantly ($P < .01$) greater than the mean score of 53.04 for Group 3.

43. The three-way analysis of variance summary for students' scores on the Agricultural Mechanics Achievement Test disclosed a significant ($P < .01$) F ratio of 6.96 for variation among schools participating in the study. A significant ($P < .01$) F ratio of 9.94 was also found for differences in mean scores of students grouped according to grade level.

44. The analysis of variance calculation for students' scores on the Agricultural Management Achievement Test resulted in an F ratio of 9.60 for differences in mean scores among schools. This F ratio is significant at the .01 level of probability with 27 and 558 degrees of freedom. A significant ($P < .01$) F ratio

of 9.24 was also found for differences in mean scores of students grouped according to their occupational plans. A multiple comparison of these group means revealed that the mean score of 58.99 for Group 1 is significantly ($P < .05$) higher than the mean score of 55.58 for Group 3. It was further determined that the mean score of 59.95 for Group 2 is significantly ($P < .01$) higher than the mean score of 55.58 for Group 3.

Conclusions

The following conclusions were drawn based upon the findings of this study.

1. More than 54 percent of the junior and senior students included in this study and currently enrolled in vocational agriculture courses planned to enter an on-farm agricultural occupation upon completion of their formal education. Of the 623 students surveyed, 17.6 percent indicated they would seek employment in an off-farm agricultural occupation, whereas 27.9 percent planned to enter a non-agricultural occupation.
2. Almost 57 percent of the students participating in this study indicated that they were juniors and approximately 43 percent indicated that they were seniors. There was approximately equal distribution of juniors and seniors among the three student groups.
3. It was concluded that students planning to enter on-farm agricultural occupations had received more instruction in vocational agriculture than did students who indicated they planned to enter non-agricultural occupations.

4. Students planning to enter off-farm agricultural occupations received higher grades in vocational agriculture courses than students who planned to enter on-farm agricultural occupations or non-agricultural occupations upon completion of their formal education.
5. Students planning to enter off-farm agricultural occupations received higher grades in all their high school courses than students planning to enter on-farm agricultural occupations or non-agricultural occupations.
6. It was determined that a relationship does exist between students' participation in the FFA, and students' occupational plans. Over 87 percent of the students in Group 1 and Group 2 indicated that they participated in the FFA. Whereas, only 78.6 of the students in Group 3 indicated that they participated in the FFA.
7. It was determined that a relationship exists between students' participation in the 4-H Club and students' occupational plans upon completion of their formal education. Over 43 percent of the students planning to enter off-farm agricultural occupations participated in 4-H Club activities, compared to 26.7 percent of the students planning to enter on-farm agricultural occupations and 22.5 percent entering non-agricultural occupations.
8. A relationship was found to exist between students' participation in student government and students' occupational plans. Over 16 percent of the students in Group 2 participated in student government. Only 3.6 and 5.2 percent of the students

in Groups 1 and 3 respectively, indicated they participated in student government.

9. It was determined that a relationship exists between students' place of residence and students occupational plans upon graduation from high school. Over 81 percent of the students participating in this study indicated they were living on a farm.

10. Students who planned to enter off-farm agricultural occupations upon graduation from high school responded that they planned to receive a greater number of years of posthigh school education than students planning to enter on-farm agricultural occupations or non-agricultural occupations. It was also concluded that students planning to enter non-agricultural occupations planned to receive more years of posthigh school education than students entering on-farm agricultural occupations.

11. It was determined that a relationship exists between the extent of students working outside the family and home or farm, and students' occupational plans. Over 52 percent of the students in the three groups indicated that they sometimes work outside their family and home or farm. Almost 30 percent of the students sampled indicated that they had a fairly regular job outside their family and home or farm. Whereas, 18.8 percent responded that they did not work outside the family and home or farm.

12. The majority (47.2 percent) of the students in all three student groups indicated their father had been the most

influential in their choice of occupation. Over 58 percent of the students who planned to enter an on-farm agricultural occupation upon completion of their formal education indicated that their father had the most influence on their choice of occupation. This compares to 37.4 percent for Group 2 and 30.8 percent for Group 3. It was concluded that a relationship does exist between students' response to the person having the most influence on their choice of occupation, and their occupational plans.

13. Students who planned to enter an on-farm agricultural occupation were more certain of their choice of occupation than students who planned to enter off-farm agricultural occupations or non-agricultural occupations. An overall mean rating of 6.69 for the three groups on this variable would suggest that students were relatively certain that they will enter the occupation they had chosen.

14. It was determined that students planning to enter an on-farm agricultural occupation had given more thought to their choice of occupation than students planning to enter non-agricultural occupations. An overall mean rating of 7.52 for the three student groups would indicate that these students had given considerable amount of thought to their choice of occupation upon completion of their formal education.

15. It was found that students planning to enter on-farm occupations perceived they possessed more ability to perform their chosen occupation than students planning to enter off-farm and

non-agricultural occupations.

16. A considerably higher mean rating was given by students planning to enter on-farm agricultural occupations, as compared to students in Groups 2 and 3, when asked the amount of work experience they received in the occupation they planned to enter. It should be pointed out that over 81 percent of the students participating in this study are living on farms.

17. It was determined that students planning to enter on-farm agricultural occupations perceived they had a greater knowledge of the occupation they planned to enter than students planning to enter other types of occupations. The overall mean rating of 6.86 for the three groups suggests students participating in this study felt they had above average knowledge about the occupations they planned to enter upon completion of their formal education.

18. Students planning to enter on-farm agricultural occupations or off-farm agricultural occupations perceived that their high school training was of greater value to them in preparing for their chosen occupation, than students entering non-agricultural occupations.

19. It was found that students planning to enter on-farm agricultural occupations perceived their high school had provided a greater amount of training for the occupation they are planning to enter than did students who indicated they would enter off-farm agricultural occupations or non-agricultural occupations.

20. It was concluded that students planning to seek employment in

off-farm agricultural occupations perceived they received more encouragement to continue their education beyond high school from their father than students who indicated they planned to enter on-farm agricultural occupations or non-agricultural occupations.

21. Students planning to enter off-farm agricultural occupations indicated they received more encouragement from their mother to complete additional formal education than did students planning to enter other types of occupations.

22. An overall mean rating of 3.42 regarding the amount of encouragement students had received from their father to attend an area vocational school would suggest below average amount of encouragement.

23. It was determined that students planning to enter off-farm agricultural occupations perceived they received more encouragement from their father to attend a four-year college or university than did students planning to enter on-farm agricultural occupations or non-agricultural occupations. However, an overall mean rating of 2.82 for the three student groups would suggest this encouragement from the father was minimal.

24. Students in all three groups were approximately equal in their perception of the amount of encouragement they received from their mother to attend an area vocational school. An overall mean rating of 3.22 would indicate a below average rating for encouragement received from their mother.

25. It was found that students planning to enter off-farm

agricultural occupations believed they had received a greater amount of encouragement from their mother to attend a four-year college or university than did students who planned to enter on-farm agricultural occupations or non-agricultural occupations. The mean ratings of 2.54 and 2.69 for Groups 1 and 3 would indicate a relatively low amount of encouragement received from their mother to attend a four-year college or university.

26. Students in the three groups were similar in their mean ratings of the amount of encouragement they had received from their vo-ag instructor to attend an area vocational school. An overall mean rating of 3.02 for the three groups involved would suggest a below average amount of encouragement from the vo-ag instructor for his students to attend an area vocational school.

27. Students planning to enter off-farm agricultural occupations perceived they received a greater amount of encouragement from their vocational agriculture instructor to attend a four-year college or university than did students who planned to enter on-farm or non-agricultural occupations.

28. It was found that students planning to enter agricultural occupations, either on-farm or off-farm, perceived their completed high school vocational agriculture courses as being of greater value in preparing them for their occupational choice than did students planning to enter a non-agricultural occupation. A mean rating of 3.96 for Group 3 would suggest a below average rating for students' perception of the value of their vo-ag courses in preparing them for their chosen occupation.

29. It was found that students who planned to enter agricultural occupations believed their FFA program was of greater value to them in job preparation than did students planning to enter non-agricultural occupations.

30. It was found that students who indicated they were planning to enter either an on-farm agricultural occupation or an off-farm agricultural occupation perceived that their vo-ag courses would be of greater value to them in preparing to attend an area vocational school than did students who were planning to enter a non-agricultural occupation.

31. Students who planned to enter an off-farm agricultural occupation believed their vo-ag courses would be of greater value to them in preparing to attend a four-year college or university than did students who were planning to enter a non-agricultural occupation.

32. The three student groups were similar in their perception of the value of their completed high school courses in preparing them to attend an area vocational school.

33. It was determined that students who planned to enter off-farm agricultural occupations placed a greater value on their completed high school courses in preparing them to attend a four-year college or university than did students who planned to enter an on-farm agricultural occupation or a non-agricultural occupation.

34. Students who planned to enter agricultural occupations, either on-farm or off-farm, indicated that their supervised occupational

experience program was of greater value in preparing them for these occupations, than did students who planned to enter non-agricultural occupations.

35. It was found that students who planned to enter off-farm agricultural occupations indicated a greater chance for success as a student at a four-year college or university studying animal science than did students who planned to enter on-farm or non-agricultural occupations. It may also be concluded that students planning to enter on-farm agricultural occupations indicated a greater chance for success as a student if they were to attend a four-year college or university and study animal science than did students who indicated their plans were to enter a non-agricultural occupation. A mean rating of 3.38 for Group 3 may be considered a relatively low rating.

36. Students who planned to enter an off-farm agricultural occupation perceived their chances of success as a student at a four-year college or university studying plant and soil science to be greater than students planning to enter on-farm or non-agricultural occupations. It was further concluded that students planning to enter on-farm agricultural occupations believed their chances of success as a student at a four-year college or university studying plant and soil science to be greater than did students who planned to enter non-agricultural occupations.

37. When asked their perception of their chances of success as a student attending a four-year college or university and studying agricultural mechanics, students in the three groups did not differ

greatly on their mean responses. An overall mean rating of 5.30 would indicate an above average perception of their ability as a student at a four-year college or university and studying agricultural mechanics.

38. Students who planned to enter an agricultural occupation indicated they felt their chances of success as a student attending a four-year college and studying agricultural management is greater than that of a student planning to enter a non-agricultural occupation.

39. It was determined that students who planned to enter an off-farm agricultural occupation indicated a greater chance for success as a student at an area vocational school studying animal science than did students who planned to enter an on-farm agricultural occupation or a non-agricultural occupation. It may also be concluded that students planning to enter an on-farm agricultural occupation believed their chances of success as a student attending an area vocational school and studying animal science to be greater than did students planning to enter a non-agricultural occupation.

40. Students who indicated they planned to enter agricultural occupations, either on-farm or off-farm, indicated a greater chance of success as a student attending an area vocational school and studying plant and soil science than did students planning to enter a non-agricultural occupation.

41. An overall mean rating of 5.91 for the three student groups would suggest the students were fairly confident in their chances

of success as a student attending an area vocational school and studying agricultural mechanics.

42. It may be concluded that students who planned to enter on-farm or off-farm agricultural occupations indicated a greater chance for success as a student at an area vocational school studying agricultural management than did students who planned to enter non-agricultural occupations upon graduation from high school.

43. An analysis of the Animal Science Achievement Test scores indicated that students who planned to enter an off-farm agricultural occupation possessed a higher level of achievement in animal science than students who planned to enter an on-farm agricultural occupation or a non-agricultural occupation. It may also be concluded that students who planned to enter on-farm agricultural occupations possessed a higher level of achievement in animal science than did students who planned to enter non-agricultural occupations.

44. From the analysis of the Plant and Soil Science Achievement Test scores, it was determined that students who planned to enter an agricultural occupation possessed a higher level of achievement in plant and soil science than students who planned to enter a non-agricultural occupation.

45. As a total group, the students participating in this study achieved the highest scores in agricultural mechanics as compared to the other areas of agriculture. The three student groups posted similar scores in the area of agricultural mechanics.

46. It may be concluded from the analysis of the Agricultural

Management Achievement Test scores that students who planned to enter on-farm agricultural occupations or off-farm agricultural occupations possessed a higher level of achievement in agricultural management than students who planned to enter a non-agricultural occupation.

Limitations

The generalizations made from this research study should be subject to the following limitations:

1. This study was basically a cross-sectional survey design. Therefore, no attempts were made to control or manipulate the independent variables.
2. The population for this study consisted of students enrolled in secondary vocational agriculture programs in Iowa. Generalizations from this study outside the state of Iowa should be made with caution.
3. This study was limited to junior and senior vocational agriculture students. Therefore the extent of generalization to other grade levels or occupational areas should be done with caution.
4. The sample for this research study consisted of 30 schools. No attempt was made to identify participants by selecting a completely randomized sample of students. The data collection instruments were administered in a group setting by the vocational agriculture instructor.

Recommendations

The findings of this study reveal that there are similarities and differences in various factors associated with occupational decision-making among vocational agriculture students grouped according to their stated occupational plans upon completion of their formal education. The following are recommendations preceded by 13 selected conclusions upon which the recommendations were based. These recommendations appear worthy of consideration by high school vocational agriculture instructors, vocational guidance counselors, postsecondary area vocational school personnel, teacher educators, state department personnel, and others who are in a position to assist students in establishing and attaining their educational and occupational goals. These statements and recommendations should be considered by those individuals involved in the development of secondary and postsecondary agriculture programs.

1. Over 54 percent of the students participating in this study indicated they planned to enter an on-farm agricultural occupation upon graduation from high school.
   A. Assisting students in developing agricultural job entry level skills for on-farm agricultural occupations should be a major task for secondary vocational agriculture instructors.
   B. Management in agricultural production should be encouraged, and the curriculum should be structured as to include such training.
   C. The vocational agriculture curriculum should include specialized programs following one or two years of basic instruction to prepare for specific on-farm agricultural occupations.

D. Students should be made aware of the possible declining on-farm job opportunities.

E. There is a continued need for practical, participating experiences in on-farm agricultural occupations through supervised occupational experience programs.

2. Approximately 18 percent of the students included in this study planned to enter an off-farm agricultural occupation.

A. Instructional programs in vocational agriculture should be structured to provide students with the necessary knowledge and skills required to enter off-farm agricultural occupations.

B. Supervised occupational experiences in agricultural businesses should be provided for students who plan to seek employment in off-farm agricultural occupations.

3. Almost 30 percent ot the students participating in this study planned to enter a non-agricultural occupation.

A. Students should be made aware of the many agricultural related occupations and the availability of further training in these occupational areas.

B. Vocational agriculture instructors and vocational guidance counselors should be made aware that almost one-third of the students enrolled in vocational agriculture do not plan to enter an agricultural occupation. Thus, some of these students may need additional assistance in planning careers upon completion of their formal education.

C. Assistance in job placement should be provided and planned

follow-up studies conducted.

4. Students grouped by their occupational plans differed in their academic achievement as measured by grades received in courses completed.

   A. Students planning to enter off-farm agricultural occupations appear more academically oriented, thus should be made aware of the educational opportunities available to them at postsecondary area vocational schools and four-year colleges and universities.

5. It was determined that a relationship existed between students' participation in activities within the high school and outside the school, and students' occupational plans.

   A. Students should be encouraged to participate in extra-curricular activities which are of interest to them and will aid them in their career development.

6. Students who planned to enter on-farm agricultural occupations responded that they also planned to receive the least amount of posthigh school education among the groups studied.

   A. Those students who do not plan to receive additional formal education should be made aware of available young and adult farmer programs.

   B. Adult education programs should provide up-to-date technical information to those students entering on-farm agricultural occupations and not planning to receive further training.

7. It was discovered that parents were very influential in students' educational and occupational plans.

A. Parents should be provided with current information regarding employment opportunities in the field of agriculture and related areas.

B. Vocational agriculture instructors and guidance counselors should aid parents in assisting their children in establishing and attaining their educational and occupational goals.

C. Parents should be involved in planning and conducting supervised occupational experiences for their children.

8. Students differed in the amount of work experience they had received for the occupation they are planning to enter.

A. Supervised occupational experience programs should be provided as an individualized part of the curriculum for all students in vocational agriculture.

B. Various types of supervised occupational programs should be provided to meet the needs of students preparing for entry into different types of agricultural occupations.

9. It was revealed that students entering on-farm agricultural occupations had a greater knowledge of these occupations than students seeking employment elsewhere.

A. Vocational agriculture instructors and vocational guidance counselors should provide available information about agricultural occupations.

B. Students planning to enter off-farm agricultural occupations or non-agricultural occupations should be encouraged to seek information about job descriptions and opportunities.

10. Students differed in their perceptions regarding the value and

amount of high school training received for the occupation they are planning to enter.

A. The vocational agriculture curriculum should be closely integrated with other curricula in the high school.

B. Attempts should be made to determine a student's future occupational plans early in his/her educational and occupational training.

C. Single-teacher vocational agriculture programs should become multiple departments to more effectively prepare students for on-farm and off-farm agricultural occupations.

11. Students in all three groups studied reported a relatively low amount of encouragement received from their vocational agriculture instructor to seek further education.

A. Vocational agriculture instructors and guidance counselors should be encouraged to inform students of the various educational opportunities available at postsecondary area vocational schools and four-year institutions.

B. Vocational agriculture instructors should have access to current educational and occupational information.

C. Occupational opportunities in agriculture should be a significant part of the instructional program in vocational agriculture.

12. Students differed in their perception of the value of their FFA program in preparing them for the occupation they are planning to enter.

A. Since the FFA is an integral part of the vocational

agriculture program, all vo-ag students should become active FFA members.

B. Activities in the FFA should be structured to provide the maximum amount of leadership experiences for all members.

13. Students participating in this study differed in their achievement in animal science, plant and soil science and agricultural management when they were grouped by their occupational plans.

A. Students should be made aware of their strengths and weaknesses in the various areas of study when developing their future educational and occupational plans.

B. Personnel at postsecondary institutions should be aware of the student's competency level in agriculture in order to provide greater assistance in occupational training.

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APPENDIX A

PERSONAL, FAMILY, AND COMMUNITY DATA INSTRUMENT

PERSONAL, FAMILY, AND COMMUNITY DATA RELATED TO EDUCATIONAL AND OCCUPATIONAL PLANS OF IOWA VOCATIONAL AGRICULTURE STUDENTS

Dear Students:

The Agricultural Education Department at Iowa State University would like to thank you for cooperating with us in conducting this study. We are attempting to determine the educational and occupational goals of Iowa vocational agriculture students and factors related to these goals.

This questionnaire is an attempt to get a better picture of the problems young people face in choosing their life's occupation, and the feelings they have toward these problems. By carefully filling out this questionnaire, you will assist us in acquiring a better understanding of these problems. This information will be of great value to your vocational agriculture instructor, guidance counselor, and other teachers in your school in developing programs of vocational agriculture, counseling, and occupational orientation.

Thank you very much for your cooperation in completing this questionnaire.

PLEASE FOLLOW THESE DIRECTIONS:

1. Read each item carefully. Answer to the best of your knowledge.
2. Be sure to answer each question. Where there are brackets, fill in an "x" by the response which answers the question the way you truly feel, not the way you think other people will want you to answer them. Where only a space is left, enter the words called for.
3. Part II will ask that you rate each statement on a rating scale from low to high.
4. If you have any questions about how to complete this questionnaire, please ask your vocational agriculture instructor for assistance.

PART I

1. My name is _____

2. I am a

   1. ( ) Freshman
   2. ( ) Sophomore
   3. ( ) Junior
   4. ( ) Senior

3. The number of semesters of vocational agriculture I have completed is (including this semester)

   1. ( ) 1 semester
   2. ( ) 2 semesters
   3. ( ) 3 semesters
   4. ( ) 4 semesters
   5. ( ) 5 semesters
   6. ( ) 6 semesters
   7. ( ) 7 semesters
   8. ( ) 8 semesters

4. The types of grades I normally get in vocational agriculture are:

   1. ( ) all A's
   2. ( ) mostly A's but few B's
   3. ( ) half A's and B's
   4. ( ) about equal A's, B's and C's
   5. ( ) mostly B's and C's
   6. ( ) mostly C's but few B's
   7. ( ) C's and D's
   8. ( ) D's and F's

5. The types of grades I normally get in all my courses are:

   1. ( ) all A's
   2. ( ) mostly A's but few B's
   3. ( ) half A's and B's
   4. ( ) about equal A's, B's and C's
   5. ( ) mostly B's and C's
   6. ( ) mostly C's but few B's
   7. ( ) C's and D's
   8. ( ) D's and F's

6. The kinds of activities in which I participate are (please check all that apply):

   ( ) annual
   ( ) athletics
   ( ) band-orchestra
   ( ) chorus
   ( ) debates
   ( ) FFA
   ( ) 4-H
   ( ) hobby club
   ( ) student government
   ( ) other _____
   ( ) _____
   ( ) _____

7. I live

1. ( ) on a farm
2. ( ) in the open country, but not on a farm
3. ( ) in a village under 2,500
4. ( ) in a town of 2,500-10,000
5. ( ) in a city over 10,000

8. The occupation that I plan to enter is (indicate particular type of job)

_____

9. Upon completion of high school, I plan to

1. ( ) Attend a postsecondary area vocational school or community college. Name of area vocational school or community college planning to attend.

2. ( ) Attend a four-year college or university. Name of college or university planning to attend _____

3. ( ) Get a full-time job or work for myself and not attend college.

10. The number of years of further education I plan to get beyond high school is

1. ( ) none, or less than one year
2. ( ) one year
3. ( ) two years
4. ( ) three years
5. ( ) four years
6. ( ) five years
7. ( ) six years
8. ( ) seven years
9. ( ) eight years or more

11. As to working while I am in high school

1. ( ) I have a fairly regular job ouside my family and home or farm.
2. ( ) I sometimes work outside my family and home or farm.
3. ( ) I do not work outside my family and home or farm.

12. The person who had the most influence on my choice of an occupation was

1. ( ) my father
2. ( ) my mother
3. ( ) my brother or sister
4. ( ) another relative
5. ( ) counselor
6. ( ) close friend
7. ( ) vo-ag instructor
8. ( ) another teacher
9. ( ) other than above _____

PART II

Please rate each of the following statements on a 10 point scale from low to high. Read each statement carefully and rate how you feel about that statement by circling either 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10. A score of 0 is the lowest possible rating and a score of 10 is the highest possible rating. Circle only one number for each statement to indicate how you feel about that statement.

STATEMENT	RATING (Low → High)
1. Amount of certainty that I will enter the occupation I have chosen	0 1 2 3 4 5 6 7 8 9 10
2. Amount of thought I have given to my choice of occupation	0 1 2 3 4 5 6 7 8 9 10
3. My ability for the occupation I have chosen	0 1 2 3 4 5 6 7 8 9 10
4. Amount of work experience I have had in the occupation I plan to enter	0 1 2 3 4 5 6 7 8 9 10
5. My knowledge of the occupation I plan to enter	0 1 2 3 4 5 6 7 8 9 10
6. Value of my high school training for the occupation I plan to enter	0 1 2 3 4 5 6 7 8 9 10
7. Amount of training my high school has provided for the occupation I plan to enter	0 1 2 3 4 5 6 7 8 9 10
8. Amount of encouragement received from my father to continue my education beyond high school	0 1 2 3 4 5 6 7 8 9 10
9. Amount of encouragement received from my mother to continue my education beyond high school	0 1 2 3 4 5 6 7 8 9 10
10. Amount of encouragement received from my father to attend a post-secondary area vocational school	0 1 2 3 4 5 6 7 8 9 10

	Low										High
11. Amount of encouragement received from my father to attend a four-year college or university.....	0	1	2	3	4	5	6	7	8	9	10
12. Amount of encouragement received from my mother to attend a post-secondary area vocational school.....	0	1	2	3	4	5	6	7	8	9	10
13. Amount of encouragement received from my mother to attend a four-year college or university.....	0	1	2	3	4	5	6	7	8	9	10
14. Amount of encouragement received from my vo-ag instructor to attend a postsecondary area vocational school.....	0	1	2	3	4	5	6	7	8	9	10
15. Amount of encouragement received from my vo-ag instructor to attend a four-year college or university.....	0	1	2	3	4	5	6	7	8	9	10
16. Value of my high school vo-ag courses completed in preparing me for the occupation I plan to enter.....	0	1	2	3	4	5	6	7	8	9	10
17. Value of FFA program in preparing me for the occupation I plan to enter.....	0	1	2	3	4	5	6	7	8	9	10
18. Value of my vo-ag courses completed in preparing me to attend a post-secondary area vocational school.....	0	1	2	3	4	5	6	7	8	9	10
19. Value of my vo-ag courses completed in preparing me to attend a four-year college or university.....	0	1	2	3	4	5	6	7	8	9	10
20. Value of my high school courses in preparing me to attend a post-secondary area vocational school.....	0	1	2	3	4	5	6	7	8	9	10
21. Value of my high school courses in preparing me to attend a four-year college or university.....	0	1	2	3	4	5	6	7	8	9	10
22. Value of my supervised occupational experience program (supervised farming or agribusiness placement) in preparing me for the occupation I plan to enter.....	0	1	2	3	4	5	6	7	8	9	10

		Low										High
23.	My chances of success as a student if I were to attend a four-year college or university and study animal science.....	0	1	2	3	4	5	6	7	8	9	10
24.	My chances of success as a student if I were to attend a four-year college or university and study plant and soil science.....	0	1	2	3	4	5	6	7	8	9	10
25.	My chances of success as a student if I were to attend a four-year college or university and study agricultural mechanics.....	0	1	2	3	4	5	6	7	8	9	10
26.	My chances of success as a student if I were to attend a four-year college or university and study agricultural management.....	0	1	2	3	4	5	6	7	8	9	10
27.	My chances of success as a student if I were to attend a postsecondary area vocational school and study animal science.....	0	1	2	3	4	5	6	7	8	9	10
28.	My chances of success as a student if I were to attend a postsecondary area vocational school and study plant and soil science.....	0	1	2	3	4	5	6	7	8	9	10
29.	My chances of success as a student if I were to attend a postsecondary area vocational school and study agricultural mechanics.....	0	1	2	3	4	5	6	7	8	9	10
30.	My chances of success as a student if I were to attend a postsecondary area vocational school and study agricultural management.....	0	1	2	3	4	5	6	7	8	9	10

APPENDIX B

COPY OF LETTER SENT TO VOCATIONAL AGRICULTURE INSTRUCTORS REQUESTING THEIR COOPERATION IN CONDUCTING THE STUDY

Iowa State University of Science and Technology Ames, Iowa 50010

Department of Agricultural Education
223 Curtiss Hall
Telephone 515-294-5872

The staff in the Agricultural Education Department at Iowa State University is initiating a study being funded through the Agriculture and Home Economics Experiment Station to ascertain the educational and occupational goals of high school juniors and seniors who are enrolled in vocational agriculture, and then compare these goals to personal variables which each student possesses.

The means by which we plan to collect the information for this study consists of two instruments. The first will be a general questionnaire covering the student variables in which we are interested. The second instrument is a two-hour standardized Agri-Business Achievement test to be administered to the students.

We are seeking your approval that we may use your school and vocational agriculture department at a part of the sample for this project. As your school's cooperation will benefit our goals, in return, we would hope that we could complement your vocational agricultural program by providing the results of the achievement test to your vocational agriculture instructor.

Please complete the enclosed stamped postcard and return it to us at your earliest convenience. If you have any questions, please write or call 515/294-5872. Upon your approval we will contact your vocational agriculture instructor.

Thank you for your time, and we will be looking forward to working with your school in the future.

Sincerely,

Harold R. Crawford Professor and Head Agricultural Education	Bennie L. Byler Assistant Professor Agricultural Education	Tom Archer Research Assistant Agricultural Education

TA/mdd

APPENDIX C

LIST OF HIGH SCHOOLS PARTICIPATING IN THE STUDY

SCHOOLS RANDOMLY SELECTED TO PARTICIPATE IN THE STUDY

School	Vocational Agriculture Instructor
Adair-Casey Comm. Adair, Iowa	Doug Timmons
Algona Comm. Algona, Iowa	Wendell Phelps
Atlantic Comm. Atlantic, Iowa	Ronald Beaver
Belle Plaine Comm. Belle Plaine, Iowa	Howard Marsh
Brooklyn-Guernsey-Malcom Comm. Brooklyn, Iowa	Larry Dayton
Dunkerton Comm. Dunkerton, Iowa	Lyle Bare
East Greene Comm. Grand Junction, Iowa	David Tokheim
Graettinger Comm. Graettinger, Iowa	Charles Moser
Greenfield Comm Greenfield, Iowa	George Freese, Jr.
Iowa Valley Comm. Marengo, Iowa	Robert Taylor
LeMars Comm. LeMars, Iowa	John Rix
Maple Valley Comm. Mapleton, Iowa	Norman Mecklenburg
Mediapolis Comm. Mediapolis, Iowa	James Howell
M-F-L Comm. Monona, Iowa	John Wachter
Missouri Valley Comm. Missouri Valley, Iowa	Gene Weldon

School	Vocational Agriculture Instructor
Mt. Pleasant Comm. Mt. Pleasant, Iowa	Ralph Stuekerjuergen
Murray Comm. Murray, Iowa	Brent Hanna
Nashua Comm. Nashua, Iowa	Richard Gingrich
New Providence Comm. New Providence, Iowa	Gary Glawe
Odebolt-Arthur Comm. Odebolt, Iowa	Donald Kearney
Osage Comm. Osage, Iowa	Lewis Lauterbach
Oskaloosa Comm. Oskaloosa, Iowa	Charles Perdue
Pekin Comm. Packwood, Iowa	Allen Henigan
Riceville Comm. Riceville, Iowa	Kenneth Redmann
Rock Valley Comm. Rock Valley, Iowa	Verlyn Sneller
Sheldon Comm. Sheldon, Iowa	Fred Van Loh
Southeast Polk Runnels, Iowa	James Appleget
Thompson Comm. Thompson, Iowa	Kingsley Johnson
West Liberty Comm. West Liberty, Iowa	Richard Wehde
Wilton Comm. Wilton, Iowa	Gary Bennett

APPENDIX D

FOLLOW-UP LETTER AND DIRECTIONS USED FOR ADMINISTERING THE INSTRUMENTS

Iowa State University of Science and Technology Ames, Iowa 50010

Department of Agricultural Education
223 Curtiss Hall
Telephone 515-294-5872

We appreciate your interest and cooperation in the completion of our survey of high school junior and senior vocational agriculture students, and sincerely thank you for your help. We hope that the results of this project will assist in conducting your vocational agriculture program.

Enclosed you will find a sufficient number of questionnaires and answer sheets for all of the junior and senior students who are enrolled in the vocational agriculture classes at your high school. To reduce cost and bulk of postage, we have included only enough test booklets for your largest class, either juniors or seniors. We have assumed that these instruments will be administered during regular class time, and that your regular classes will be no larger than the number of test booklets which we have included. If there are not enough materials, please call us immediately at 515/294-5872, and we will forward more materials.

We know that it would be impossible to completely coordinate the administration of these instruments among the thirty participating schools. We do not expect that the teachers administer them at the same time on the same day. As a matter of fact, it is our belief that the results would be better if the instruments were administered over a longer period. Therefore, we hope that you can administer these to your junior and senior vocational agriculture students between the dates of December 9 to January 17. Because of differing lengths and time of class periods among the schools, we are not attempting to coordinate any more than the order of instrument administration. Please fit our suggestions as best you can into your own situation.

We suggest that the instruments be administered on five different days. The first should be the questionnaire, followed by the four parts of the achievement test in the following order: (1) Animal Science, (2) Plant and Soil Science, (3) Mechanics, and (4) Management. The questionnaires will not take as long as the achievement tests, but we hope that you will make sure that all items are completely answered. Each of the parts of the achievement test will take approximately fifty minutes, forty minutes of which will be allowed for actual testing.

Enclosed you will find a sheet labeled "Test Administration". This contains the complete set of standardized directions for the administration of the Agri-Business Achievement Test. The paragraphs starred (**) are to be read aloud to the students. Although any soft leaded pencil may be used to mark the answer sheets, we have included pencils for your convenience. Please do not allow the students to use pens.

After all of the instruments have been completed by all of your junior and senior students in vocational agriculture (which will hopefully be on or before January 17), please return the test booklets, answer sheets, and completed questionnaires in the self-addressed, stamped envelop which we have included. We would like for you to keep one copy of the test booklet for your reference. The answer sheets will be scored and results will be made available to you as soon as possible. You may want to use the results of these achievement tests as a teaching-learning situation.

To reiterate, you might find the following helpful:
Check List of Data Collection:

_____(1) Administer the instruments, both the questionnaire and the achievement test to your high school junior and senior vocational agriculture students sometime between December 9 and January 17.

_____(2) Administer questionnaire - Will take approximately 30 minutes.

_____(3) Have each student complete the Name Block, Grade, Sex, Birth Date, and School information on his answer sheet. Specific directions for this are given in "The Pre-Test Session" part of the Test Administration directions.

_____(4) Administer the Achievement Test - Probably four different days would work best.

a) Animal Science Test - Allow approximately fifty minutes
b) Plant and Soil Science Test - Allow approximately fifty minutes
c) Mechanics Test - Allow approximately fifty minutes
d) Management Test - Allow approximately fifty minutes

_____(5) Return test booklets, answer sheets, and completed questionnaires to the Agricultural Education Department, Iowa State University.

_____(6) Review Test results with your students - Sometime in February.

If you have any questions, please call, We will be anxiously awaiting your completed instruments.

Sincerely,

Harold R. Crawford	Bennie L. Byler	Tom Archer
Professor and Head	Assistant Professor	Graduate Assistant
Agricultural Education	Agricultural Education	Agricultural Education

TA/lra

Encl.

P.S. The information collected for the questionnaires and instruments will remain confidential and will be reported in summary form only. Comparison among schools will not be made.

APPENDIX E

TABLE OF MEANS AND STANDARD DEVIATIONS FOR PERSONAL, FAMILY, AND COMMUNITY VARIABLES

Table 85. Means and standard deviations for personal, family and community variables

Variable	Student group[a] Group 1 Mean	S.D.	Group 2 Mean	S.D.	Group 3 Mean	S.D.	Total Mean	S.D.
Semesters of vocational agriculture completed.	5.59	1.47	5.30	1.81	5.18	1.97	5.42	1.69
Grades received in vocational agriculture	4.53	1.73	3.61	1.67	4.84	1.75	4.46	1.77
Grades received in all courses	5.24	1.39	4.36	1.61	5.24	1.68	5.09	1.55
Years of posthigh school education planned.	1.78	1.33	3.66	2.08	2.32	1.66	2.26	1.71
Amount of certainty that I will enter the occupation I have chosen.	7.27	2.41	6.28	2.63	6.51	2.56	6.89	2.53
Amount of thought I have given to my choice of occupation.	7.83	2.14	7.54	2.06	7.18	2.59	7.59	2.25
My ability for the occupation I have chosen.	8.16	1.78	7.55	1.84	7.21	2.14	7.79	1.93
Amount of work experience I have had in the occupation I plan to enter	8.59	1.88	5.53	3.16	4.95	3.17	7.04	3.06
My knowledge of the occupation I plan to enter.	7.91	1.72	6.50	2.11	6.14	2.61	7.18	2.22
Value of my high school training for the occupation I plan to enter.	6.04	2.43	5.36	2.56	4.70	3.10	5.54	2.71

[a] Group 1 = Students who planned to enter an on-farm agricultural occupation.

Group 2 = Students who planned to enter an off-farm agricultural occupation.

Group 3 = Students who planned to enter a non-agricultural occupation.

Table 85 (Continued)

Variable	Student group[a] Group 1 Mean	S.D.	Group 2 Mean	S.D.	Group 3 Mean	S.D.	Total Mean	S.D.
Amount of training my high school has provided for the occupation I plan to enter.	5.68	2.49	4.48	2.75	3.84	2.86	4.96	2.77
Amount of encouragement received from my father to continue my education beyond high school.	4.30	3.43	5.67	3.53	4.81	3.63	4.68	3.53
Amount of encouragement received from my mother to continue my education beyond high school.	4.93	3.42	6.58	3.02	5.43	3.68	5.36	3.48
Amount of encouragement received from my father to attend a postsecondary area vocational school.	3.43	3.22	3.53	3.31	3.31	3.57	3.41	3.33
Amount of encouragement received from my father to attend a four-year college or university.	2.07	2.89	3.95	3.53	2.43	3.16	2.49	3.15
Amount of encouragement received from my mother to attend a postsecondary area vocational school.	2.54	3.17	4.83	3.45	2.69	3.36	2.98	3.38
Amount of encouragement received from my vo-ag instructor to attend a post-secondary area vocational school.	3.23	2.91	3.17	2.95	2.65	2.56	3.06	2.83
Amount of encouragement received from my vo-ag instructor to attend a four-year college or university.	2.51	2.83	3.56	3.51	2.32	2.78	2.64	2.98

Table 85 (Continued)

Variable	Student group[a] Group 1 Mean	S.D.	Group 2 Mean	S.D.	Group 3 Mean	S.D.	Total Mean	S.D.
Value of my high school vo-ag courses completed in preparing me for the occupation I plan to enter.	6.16	2.52	5.42	2.35	3.96	2.74	5.41	2.72
Value of the FFA program in preparing me for the occupation I plan to enter.	5.81	2.85	4.88	2.92	3.33	2.69	4.95	3.01
Value of my vo-ag courses completed in preparing me to attend a postsecondary area vocational school.	4.87	2.73	4.82	2.77	3.77	2.85	4.55	2.81
Value of my vo-ag courses completed in preparing me to attend a four-year college or university.	3.82	2.76	4.32	2.74	3.12	2.65	3.71	2.76
Value of my high school courses in preparing me to attend a postsecondary area vocational school.	4.59	2.74	5.13	2.62	4.40	2.82	4.63	2.75
Value of my high school courses in preparing me to attend a four-year college or university.	4.19	2.91	5.27	2.86	4.16	3.02	4:37	2.96
Value of my supervised occupational experience program (Supervised farming or agri-business placement) in preparing me for the occupation I plan to enter.	6.10	2.89	5.31	3.19	3.71	2.78	5.29	3.09
My chances of success as a student if I were to attend a four-year college or university and study animal science.	4.42	2.85	5.54	2.96	3.38	2.81	4.32	2.94

Table 85 (Continued)

Variable	Student group[a] Group 1 Mean	S.D.	Group 2 Mean	S.D.	Group 3 Mean	S.D.	Total Mean	S.D.
My chances of success as a student if I were to attend a four-year college or university and study plant and soil science.	3.87	2.71	4.75	2.81	2.99	2.59	3.78	2.75
My chances of success as a student if I were to attend a four-year college or university and study agricultural mechanics.	5.29	2.79	5.28	2.72	5.32	3.09	5.29	2.86
My chances of success as a student if I were to attend a four-year college or university and study agricultural management.	5.19	2.67	5.58	2.69	4.04	2.71	4.93	2.74
My chances of success as a student if I were to attend a postsecondary area vocational school and study animal science.	4.87	2.86	5.74	2.87	3.80	2.93	4.72	2.95
My chances of success as a student if I were to attend an area vocational school and study plant and soil science.	4.51	2.76	4.98	2.90	3.45	2.67	4.29	2.81
My chances of success as a student if I were to attend a postsecondary area vocational school and study agricultural mechanics.	6.13	2.66	5.76	2.73	5.84	3.11	5.98	2.80
My chances of success as a student if I were to attend a postsecondary area vocational school and study agricultural management.	5.81	2.75	6.13	2.63	4.43	2.83	5.48	2.82

APPENDIX F

TABLE OF MEANS AND STANDARD DEVIATIONS FOR AGRIBUSINESS ACHIEVEMENT TEST SCORES

Table 86. Means and standard deviations for agribusiness achievement test scores

Agribusiness achievement test	Student group[a]							
	Group 1		Group 2		Group 3		Total	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Animal Science	57.32	8.38	60.20	8.45	54.46	9.70	57.02	8.97
Plant and Soil Science	55.97	9.42	57.26	10.14	53.04	9.58	55.37	9.70
Agricultural Mechanics	59.57	8.95	59.78	8.95	58.37	8.86	59.27	8.93
Agricultural Management	58.99	10.15	59.95	10.63	55.58	10.54	58.20	10.46

[a]Group 1 = Students who planned to enter an on-farm agricultural occupation.

Group 2 = Students who planned to enter an off-farm agricultural occupation.

Group 3 = Students who planned to enter a non-agricultural occupation.