

Student Benefits from School Farm Activities  
As Perceived by Administrators and Instructors

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While practical experiences play an important role in vocational agriculture, providing these experiences for a diverse group of students is difficult. Innovative (or renewed) methods must be utilized to meet students' needs and to accomplish educational objectives. One approach to expanding experiential learning for students is the systematic use of school or vocational agriculture farms. Phipps (1980) indicated that the use of school farms in the vocational agriculture instructional program has fluctuated over the years. In the early 1900's, schools offering vocational agriculture frequently owned farms so students could receive practical training. Since the initiation of the Smith-Hughes Act in 1917, various other program components have been derived and implemented which have reduced the necessity of vocational agriculture school farms. Williams (1980) outlined these terms, which include "farm practice," "cooperative vocational education," and "supervised occupational experience." The 1970's, however, found educators returning to school-based experiential learning for some vocational agriculture students.

School-based experiential learning provides an alternative to learning activities that are farm-based, home-based, and agribusiness-based. School farms have the potential for meeting the needs of a diverse group of students. The vocational agriculture enrollments in many schools has shifted from primarily "farm boys" to a mix of boys and girls from farms and cities during the 1960's and 1970's (Warmbrod, 1980).

Objectives

This research study (McCarthy, 1981) was designed to accomplish four objectives:

1. to determine the characteristics of school farms operated by selected vocational agriculture departments in Iowa, Kansas, Missouri, and Nebraska.
2. To identify how school farms are utilized in vocational agriculture instructional programs in the four states.
3. To identify personal and situational characteristics of teachers and school administrators primarily responsible for school farms in the selected vocational agriculture departments.

4. To identify the benefits high school vocational agriculture students derive from school farm activities as perceived by vocational agriculture teachers and the superintendents or principals having the major responsibility for the operation of these school farms.

#### Methodology

A preliminary survey was mailed to vocational agriculture teachers in Iowa, Kansas, Missouri, and Nebraska to identify programs with school farms, and to identify the vocational agriculture teacher and the administrator (superintendent or principal) with primary responsibilities for the school farm. These procedures identified 113 departments in the four state area for this study as follows:

<u>State</u>	<u>Departments Identified As Operating School Farms</u>	<u>Number in the Selected Sample</u>
Iowa	51	26
Kansas	12	12
Missouri	35	18
Nebraska	15	12
	113	68

Since a number of teachers from each state did not respond to the preliminary survey, the total population of departments with school farms may be greater than 113. Therefore, the 68 departments included in this study were recognized as a "selected sample."

A mail questionnaire was used to collect data from the vocational agriculture teacher and administrator identified as having fundamental responsibility for the school farm. The questionnaire gathered personal and situational data from the respondents. It also included 53 items to secure perceptions of the benefits vocational agriculture students receive from their involvement in school farm activities. The six vocational agriculture program objectives and their contributing objectives served as a basic frame of reference for development of the benefit items used in the questionnaire (U.S. Department of Health, Education, and Welfare, 1966). Administrators and instructors were asked to rate each item on a 1 to 9 scale where 1 = no benefit, and 9 = great benefit. Usable data were received from 41 administrators and 45 vocational agriculture instructors. Frequencies, means, ranks, and percentages were used to provide a descriptive analysis of the data.

#### Findings

The findings are organized to answer four research questions that parallel the objectives of this study.

Research Question 1: What are the characteristics of school farms operated by selected schools in Iowa, Kansas, Missouri, and Nebraska.

A majority (73.4%) of the school farms were located one mile or less from the classroom and 55.6% of these school farms were 10 acres or less in size. Approximately one-fourth (24.4%) of the schools utilized a person other than the vocational agriculture instructor to supervise student activities on the school farm. Almost all of the vocational agriculture teachers (99.3%) and school administrators (92.7%) viewed the school farm as an important teaching resource for the vocational agriculture department. Further, 86.7% of the teachers and 87.8% of the administrators indicated a willingness to initiate a school farm if their departments did not presently operate one.

The most common activities conducted on the school farms and the percentage of departments using the activity are reported in Table 1. As one would probably expect producing field crops and operating machinery were the two most frequent activities conducted on these school farms. Livestock were raised on less than one-third of the school farms participating.

Research Question 2: How are school farms utilized in vocational agriculture instructional programs in the four states?

Teachers were asked to rank the use of the school farm by the vocational agriculture department (Table 2). The primary use of these facilities was to supplement the vocational agriculture classroom

Table 1

*Percentage of Departments Conducting Various Activities on School Farms*

School farm activity	Percent
Producing field crops	82.2
Operating agricultural machinery and equipment	71.1
Conserving the soil and other natural resources	68.9
Conducting no-till or minimum tillage operations	66.7
Conducting yield tests on feed grains	66.7
Conducting fertilizer demonstrations	66.2
Conducting herbicide demonstrations	60.0
Conducting plant population and yield tests	60.0
Conducting land judging contests	53.3
Conducting insecticide demonstrations	44.4
Conducting yield tests on small grains	33.3
Raising livestock	31.3

Table 2

*Rank Order Regarding the Use of the School Farm by the Vocational Agriculture Department*

Method of use	Rank
Serves as a laboratory for the vocational agriculture classes.	1
Provides a place to make money for the FFA chapter and/or the vocational agriculture department.	2
Provides a place for non-farm students to gain supervised occupational experience.	3
Provides a place to demonstrate new agricultural practices to the community.	4
Provides a place for agricultural experimentation activities.	5

by serving as a laboratory. Perhaps the relatively close distance ( $\bar{x}$  = 2.1 miles) allowed the instructors to use the farm frequently as a laboratory to support classroom instruction.

Rankings two and three revealed that instructors utilized the school farm more as a place to make money for the FFA chapter and vocational agriculture department than as a place for non-farm students to gain supervised occupational experience.

Finally, demonstration and experimentation activities were ranked fourth and fifth, respectively. The vocational agriculture instructor may not possess the expertise to carry out experimentation activities. However, several successful school farms utilized demonstration activities to introduce new agriculture technology to vocational agriculture students and adults in the community.

Other findings revealed that 62% of the departments utilized the school farm for group or cooperative ownership of crops and livestock. Almost one-fourth (24.4%) used the farm for individual student ownership of livestock or crops. Finally, 12.3% of the vocational agriculture students attained their primary supervised occupational experience (SOE) from school laboratories (5.6% on school farms, 5.0% in agricultural mechanics laboratories, and 1.7% in greenhouses).

The following three items present a partial profile of the 45 teachers included in the study:

1. A majority (77.8%) of the teachers were teaching in single-teacher departments with a mean enrollment of 61.3 students, 39.6 farm students, and 21.7 non-farm students.
2. About one-half (49.2%) of the teachers had taught six years or less. The mean years of teaching was 9.6.
3. Almost two-thirds (64.7%) of the teachers had been responsible for a school farm six or more years.

A partial profile identifying the fundamental characteristics of the 41 school administrators participating in this study is as follows:

1. They had a  $\bar{x}$  of 12.3 years of experience as a school administrator and 5.9 years of experience with a vocational farm. Five percent had previous experiences as a vocational agriculture teacher.
2. Almost one-half (48.8%) were or had been involved in farming, and over one-third (36.6%) had been employed in an agribusiness firm.

Table 3 presents the means and standard deviations (based on a 1 to 9 scale, 1 = no benefit, 5 = average benefit, and 9 = great benefit) for the 53 benefits as perceived by vocational agriculture instructors and school administrators. The 53 benefits are grouped under the six program objectives for vocational agriculture (U.S. Department of Health, Education, and Welfare, 1966).

Teachers and administrators alike rated most of the benefits above five (average benefit) on a nine-point scale, indicating that both groups of educators perceived a number of student benefits resulting from students' participating in agricultural activities on school farms. In general, respondents indicated that school farms helped accomplish the generic objectives of vocational education in agriculture.

The five greatest benefits students receive from school farm activities as perceived by vocational agriculture instructors were: (a) increasing participation in the FFA, (b) promoting group activities which develop individual leadership abilities, (c) teaching students to respect the opinions, feelings, and concerns of others, (d) generating circumstances for students to market agricultural products, and (e) allowing students to understand the financial requirements of a farm business.

The five greatest benefits students receive from participating in school farm activities as perceived by administrators were: (a) generating circumstances for students to market agriculture products, (b) providing students with supervised occupational experience in production agriculture, (c) involving students with the total crop production cycle, (d) allowing students to apply the principles of soil

Table 3

*Mean Ratings and Standard Deviations for Benefits Students Received from Agricultural Activities on School Farms as Perceived by Vocational Agriculture Teachers (n=45) and School Administrators (n=41)*

Benefits	Teacher Mean	Administrator Mean
<b>A. Development of production agricultural competencies.</b>		
1. Assists students in developing skills necessary to obtain a start in farming.	6.58	6.22
2. Teaches students to produce agricultural products efficiently.	6.56	6.39
3. Teaches students to efficiently market agricultural products.	6.36	6.10
4. Allows students to understand the financial requirements of a farm.	6.67	6.12
5. Develops an understanding of the need for efficient mechanization in agriculture.	5.82	5.73
6. Allows students to make management decisions based upon an analysis of farming records.	6.47	6.42
7. Teaches students to conserve soil and other natural resources.	6.42	6.20
8. Allows students to develop effective human relation skills.	5.84	4.93
9. Teaches students to make efficient use of machinery, equipment and other physical resources of the farm business.	5.69	5.68
10. Teaches students to make efficient use of farm labor.	5.24	4.71
11. Encourages students to participate in activities to improve their home and its surroundings.	5.16	4.73
<b>B. Development of competencies needed in agricultural occupations other than production agriculture.</b>		
1. Allows students to apply the principles of soil science.	6.53	6.54
2. Involves students with the total crop production cycle.	6.49	6.56
3. Develops competencies in business management which prepare students for agricultural occupations off-the-farm.	5.38	5.90
4. Develops mechanical abilities needed in non-farm agribusiness occupations.	5.09	4.56
5. Develops competencies in livestock production needed in non-farm agribusiness occupations.	4.00	4.29
6. Develops an understanding of the services related to processing agricultural products.	4.67	5.49
7. Generates circumstances for students to market agricultural products.	6.73	6.63
8. Develops an understanding of the service and supplies provided by non-farm agribusinesses.	6.18	6.05
9. Allows students to understand selling principles used by agricultural supply and service businesses.	5.91	5.83
10. Develops student interaction with agribusiness so they can understand how agricultural businesses are financially operated.	5.53	5.78
11. Allows students to discover what employers expect from employees.	4.49	4.63
12. Allows students to understand business policies and procedures.	5.09	5.15
13. Allows students to learn how agribusinesses maintain effective customer relations.	5.20	4.78
14. Increase students' respect for other person's property.	6.13	5.66
15. Encourages use of records similar to those used by agribusinesses.	5.78	6.44
16. Teaches students to interpret records and reports in making agribusiness management decisions.	6.02	6.42
17. Allows students to practice business procedures.	5.91	6.24
18. Teaches students to follow established policies and regulations.	6.04	6.20

Table 3 (continued)

C. Orientation to career opportunities in agriculture.		
1. Aids students in understanding the importance of agriculture.	6.49	5.88
2. Allows students to recognize employment opportunities in farm and non-farm agricultural occupations.	5.67	5.27
3. Generates situations where students can evaluate specific information regarding jobs in agriculture.	4.80	4.88
4. Allows students to recognize their abilities, talents, and interests which relate to careers in agriculture.	5.64	5.51
5. Provides students with supervised occupational experiences in production agriculture.	6.47	6.61
6. Helps students recognize the need for continuing education after high school to keep up with new developments in agriculture.	5.56	5.66
D. Development of the ability to secure placement and to advance in an agricultural occupation.		
1. Helps students recognize employment agencies and organizations they can use in seeking an agricultural occupation.	4.47	4.49
2. Enables students to analyze opportunities for self-employment.	5.11	5.17
3. Allows students to analyze agricultural career opportunities with respect to their personal interests and abilities.	5.11	5.32
4. Increases students' interest in seeking employment in agriculture.	5.87	5.46
5. Allows students to develop abilities, aptitudes, and skills that are helpful in applying and interviewing for employment.	4.82	4.34
6. Generates the incentive for students to plan and pursue educational programs appropriate to job requirements.	4.76	4.76
7. Provides students with an understanding of ways and means to progress and advance in agricultural occupations.	5.02	4.95
E. Development of human relations abilities.		
1. Generates an appreciation for the dignity of work.	6.53	6.05
2. Teaches students to respect the opinions, feelings, and concerns of others.	6.76	5.83
3. Dictates group interaction which generates the development of communication skills.	6.56	6.10
4. Promotes the development of desirable behavioral patterns.	6.33	5.90
5. Develops acceptable personal practices and work habits.	6.29	5.95
F. Development of leadership abilities.		
1. Generates increased student participation in the FFA.	6.84	6.17
2. Promotes group activities which in turn develops individual leadership abilities.	6.80	6.15
3. Generates an incentive for the development of community improvement activities.	6.02	5.42
4. Provides students with opportunities for involvement with local civic organizations.	5.53	4.90
5. Promotes the development of desirable relationships between farm and non-farm people.	6.20	5.22
6. Encourages students to participate in organizations or agencies which develop policies and programs affecting agriculture.	5.33	5.29

Note. Scale ranges from 1 = no benefit to 9 = great benefit. Benefits are listed under the six major program objectives for vocational agriculture.

science, and (e) encouraging use of records and reports similar to those used in agribusiness.

Teachers and administrators alike rated item B.5., "develops competencies in livestock production needed in non-farm agribusiness occupations," lowest, with a mean score of 4.00 and 4.29, respectively.

### Recommendations

Based upon the findings of this study, the following recommendations for further research were made:

1. Ways and means of utilizing school farms in the vocational agriculture instructional program should be included in preservice and inservice vocational agriculture teacher education programs.
2. Alternative ways of managing vocational agriculture school farms as a teaching-learning resource should be investigated.
3. Guidelines for using school farms to support the classroom/laboratory instruction, FFA activities, and SOE components of vocational agriculture should be developed for use by teachers and administrators.
4. In addition to responses from teachers and administrators, perceptions of vocational agriculture students and their parents should also be assessed.

### References

- McCarthy, D. A. (1981). *Vocational agriculture student benefits from agricultural activities on school farms*. Unpublished doctoral dissertation, Iowa State University, Ames.
- Phipps, L. J. (1980). *Handbook on agricultural education in public school*. Danville, IL: Interstate Printers and Publishers, Inc.
- U.S. Department of Health, Education, and Welfare, (1966). *Objectives for vocational and technical education in agriculture*. Washington, DC: U.S. Government Printing Office.
- Warmbrod, J. R. (1980). Agricultural education in the 1980s. *The Agricultural Education Magazine*, 52(7), 6-8.
- Williams, D. L. (1980). Experimental learning in agricultural education. *The Agricultural Education Magazine*, 52(11), 4-5.