

Relationship of Selected Factors Toward Student
Participation and Perceptions of Supervised
Occupational Experience Placement Programs

John W. Slocombe
Assistant Professor

Department of Agricultural
Engineering
Kansas State University

Supervised occupational experience (SOE) placement programs are an effective method for students to develop occupational abilities in agriculture. Pilgrim and Williams (1984) reported earlier research conducted by Williams (1977) where he found:

...differences among students with ownership, employment, and responsibility experiences concerning the importance of SOE in developing some occupational abilities. Deductively, it would seem logical to conclude that within any given type of SOE student perceptions may vary.
(p. 52)

Student perceptions of SOE placement programs may be influenced by a variety of factors including personal and situational characteristics, the vocational agriculture instructor, and the local community. Pilgrim and Williams (1984) reported that one way to improve student perceptions and participation in SOE placement programs is to provide preparatory instruction in the vocational agriculture class.

In an effort to provide materials for vocational agriculture instructors to use preparatory instruction about SOE placement programs to vocational agriculture students, a SOE placement program instructional packet was developed at Iowa State University (Williams, 1983). Slocombe (1983) used a posttest control group design to evaluate the effectiveness of the instructional packet by student knowledge of SOE placement programs, student attitude toward SOE placement programs, and SOE placement program planning (hereafter identified as dependent variables). The population consisted of vocational agriculture departments in the north central and south central districts in Iowa during the fall semester of the 1982-83 school year. The study was restricted to the two districts so the experiment could be monitored through on-site visitations with resources available. The randomly selected sample consisted of 29 vocational agriculture departments. Two levels of the experimental variables were used: (a) the experimental treatment group was provided the instructional packet; and (b) the control group was provided a brief outline of the instructional packet. The sophomore class was determined most appropriate since these students are generally 16 years of age, the minimum age required for employment, by the completion of the school year. Using these measures and procedures, the instructional packet did not enhance student preparation for participating the SOE placement programs.

*Journal of the American Association of
Teacher Educators in Agriculture
Volume 26, Number 3, pp.37-47
DOI: 10.5032/jaatea.1985.03037*

Pilgrim and Williams (1984) reported that students participating in SOE placement programs differ considerably from the "traditional" vocational agriculture student. However, the literature is almost void of research that describes these student differences and their relationship in SOE placement programs. Based on these findings, it seemed logical to reanalyze the Slocombe (1983) study to investigate which factors influenced the participation and perceptions of students in SOE placement programs.

Purpose of the Study

The purpose of this research was to determine the relationship of selected factors toward student participation and perceptions of SOE placement programs. The specific objectives were:

1. to identify personal and situational characteristics of sophomore vocational agriculture students in selected schools in central Iowa.
2. to identify professional and situational characteristics of vocational agriculture instructors in selected schools in central Iowa.
3. to determine if differences exist in student performance on the dependent variables when grouped by selected characteristics.
4. to determine if relationships exist among selected teacher characteristics and student performance on the dependent variables.

Methodology

Population and Sample

The population consisted of sophomore vocational agriculture students and vocational agriculture instructors in the north central and south central vocational agriculture/FFA districts in Iowa during the 1982-83 school year. The randomly selected sample consisted of 322 student and 29 instructors.

Instrumentation

Two instruments were used in collecting data for the study. One was designed to be completed by the students, the other was designed to be completed by the instructors. The student instrument contained four parts.

Part I--SOE Placement Program Knowledge Inventory. A criterion referenced test of 24 multiple-choice items with four alternatives each used to assess the student's knowledge of SOE placement programs. To insure content validity, the researcher evaluated the contents of the test based on the problem areas, study questions, and learner needs outlined in the instructional packet (Williams, 1983). To further refine the items and alternatives of the knowledge inventory, it was field tested with a class of sophomore vocational agriculture students in Story County, Iowa. The final instrument consisted of eight items pertaining to each of the three problem areas of the instructional packet. The knowledge inventory yielded a reliability coefficient (Cronbach's alpha) of .698. The inventory was scored and reported on a percentage basis.

Part II--SOE Placement Program Attitude Inventory. To measure each student's attitude toward SOE placement programs, an attitude inventory utilizing the semantic differential technique was developed. The instrument consisted of six broad attitudinal concepts, two from each problem area of the SOE placement program instructional packet (Williams, 1983), with six seven-step scales bound by appropriate bipolar adjectives. The bipolar adjectives were taken from those recommended by Osgood, Succi, and Tannenbaum (1971), the originators of the semantic differential technique. To insure content validity, the researcher selected the bipolar adjectives based on the dimension of meaning they represented and their appropriateness for the concept being measured. Then, the instrument was evaluated by teacher educators in the Department of Agricultural Education at Iowa State University. The attitude inventory was further refined through a field test with a class of sophomore vocational agriculture students in Story County, Iowa. The concepts and bipolar adjectives were randomly arranged on the instrument.

Factor analytic techniques revealed that six distinguishable concepts were being measured by the instrument. In addition, inter-correlations among subscales were positive and homogeneous. The attitude inventory yielded a reliability coefficient (Cronbach's alpha) of .948. These findings supported the procedure used in computing a summative attitude score.

Part III--SOE Placement Program Planning Inventory. This inventory was developed to assess the degree to which students had selected and planned their individual SOE placement program. Each of 14 statements describing a SOE placement program planning activity was weighted on a 1 to 9 importance scale by a jury of teacher educators as an indicator of good SOE placement program planning. Then, questions that elicited yes or no responses from the student were developed based on the original statements. The inventory yielded a reliability coefficient (Cronbach's alpha) of .711. A summative score was produced by adding the weighted values (jurors' mean importance scores) for yes responses of each student. Inventory scores were reported on a percentage basis.

Part IV--Student Data Questionnaire. This instrument was designed to collect student personal and situational data. The response framework consisted of multiple choice, dichotomous, and completion questions.

The instructor instrument was designed to collect teacher professional and vocational agriculture department data. The response framework consisted of multiple choice, dichotomous, and completion questions.

Data Collection

The vocational agriculture instructors administered the data collection instruments. Usable data were obtained from 322 students and 29 instructors, a 100% response rate.

Data Analysis

Percentages were used to determine personal and situational data. One-way analysis of variance was used to test for differences among students' performance on the dependent variables when grouped by selected characteristics. The Duncan post hoc test was used to identify differences between all possible pairs of group means. Pearson product-moment coefficients of correlation were computed to determine if relationships existed among selected instructor characteristics and student performance on the dependent variables. The direction of the correlation was not hypothesized; therefore, a two-tail test of statistical significance was performed. The .05 alpha level was used.

Findings

Table 1 shows the characteristics and situations of the 322 subjects in the study. Twenty-four percent of the students lived in a city or town. Similarly, 28% of the students were involved with SOE placement programs and 50% were interested in obtaining employment experience in off-farm agricultural occupations before high school graduation. Almost equal numbers of students indicated a strong interest in pursuing production agriculture and off-farm agricultural occupations upon completion of their formal education. Finally, 65% of the students planned to obtain post-secondary education after high school graduation.

Table 2 shows the characteristics and situations of the 29 vocational agriculture instructors in central Iowa during the 1982-83 school year. On the average, vocational agriculture instructors had taught for 9.7 years; 7.9 years in the present school district. Sixty-six percent of the instructors averaged 30 months of work experience in agribusiness occupations. Two-thirds had completed a college

Table 1

Characteristics and Situations of Sophomore Vocational Agriculture Students in Central Iowa

Characteristics of situation	Percentage
Place of residence	
City of town	24
Rural area, not a farm	12
On a farm	64
Type of present SOE	
Animals and/or crops	58
Farm placement	16
Agribusiness placement	8
Laboratory - school facilities	4
None	14
Preferred employment experience before graduating from high school	
Production agriculture	50
Agricultural mechanics	19
Forestry	1
Horticulture	1
Agricultural sales and service	6
Agricultural processing	4
Natural resources	10
Other	2
Non-agriculture	7
Occupational Plans	
Production agriculture	38
Off-farm agriculture	33
Non-agriculture	11
Undecided	18
Attend a vocational school, college, or university after high school graduation	
Yes	65
No	35

Note. n = 322 students from random sample of 29 schools.

course about SOE placement programs. Therefore, most of the instructors should have been familiar with the procedures used in conducting SOE placement programs.

The average number of students enrolled in vocational agriculture was 43.77, with an average of 17.55 students engaged in SOE placement programs. Normally, instructors spent 8.25 days teaching students about SOE placement programs; this year they spent an average of 11.14 days.

Table 2

Characteristics and Situations of Vocational Agriculture Instructors in Central Iowa

Characteristic or situation	\bar{X}
Years taught vocational agriculture	
Total	9.71
In present school	7.87
Months agribusiness experience	30.00
Number of students enrolled	43.77
Number of students with SOE placement programs	17.55
Days spent teaching about SOE placement	
Normally	8.25
This year	11.14

Note. n = 29 vocational agriculture instructors

Table 3

Analysis of Dependent Variables by Location of Residence

Residence	\bar{X}	SD	F value
	Knowledge score		
In a city or town	59.49	17.72	5.67**
In a rural area, not a farm	65.35	13.57	
On a farm	66.12	13.82	
	Attitude score		
In a city or town	5.55	.91	.98
In a rural area, not a farm	5.62	.81	
On a farm	5.70	.70	
	Program planning score		
In a city or town	36.95	22.34	1.39
In a rural area, not a farm	43.48	18.27	
On a farm	37.86	20.60	

Note. **p < .01

To determine if differences existed between the three dependent variables and student characteristics, the single classification analysis of variance was employed. The student characteristics included in the analysis were: (a) place of residence, (b) present type of SOE program, (c) employment experience preferred before high school graduation, (d) plans to attend a vocational school, college, or university, and (e) occupational plans upon completion of formal education.

Table 3 shows a significant difference existed between student knowledge score and location of residence. The highest score was obtained by students living on farms. Students living in a rural area, but not on a farm, obtained a score of 65.35, slightly less than the on-farm students. The lowest knowledge score was achieved by students living in a city or town. The post hoc test revealed the significant difference was between students living in a city or town and students living on a farm. No significant difference existed between the attitude scores and program planning scores of students in the three residence locations.

Table 4 shows that students with production SOE programs achieved the highest knowledge scores. The data reveal that students with other types of SOE programs tended to perform similarly on the SOE placement program knowledge inventory. An F value of 3.11 (and the post hoc test) revealed a difference existed at the .01 alpha level between students with animals and crops for SOE programs and students with on-farm placement SOE programs.

Attitude scores of students in the six types of SOE programs exhibited very little variation. A nonsignificant F value indicated student attitudes toward SOE placement programs were homogeneous regardless of their present type of SOE program. Students working in an off-farm agribusiness achieved the highest program planning score. A significant difference existed between program planning scores for students working in an off-farm agribusiness and students with no SOE program.

There was only one significant difference between the dependent variables and employment experience preferred before high school graduation. As shown in Table 5, the post hoc test indicated a highly significant difference existed in student attitude toward SOE placement programs between students wanting employment experience in production agriculture and students desiring employment experience in agricultural processing. On the other hand, no significant difference was found in student knowledge and program planning scores when students were grouped by employment experience preferred.

Table 6 shows a significant difference in knowledge scores between students who planned to continue their formal education after high school graduation and those who did not. Surprisingly, these plans had very little affect upon the students' attitude and program planning scores.

Table 4

Analysis of Dependent Variables by Present Type of SOE

Present type of SOE	\bar{X}	SD	F value
	Knowledge score		
Raising animals or crops	67.09	13.80	3.11**
Working on a farm, not home farm	59.05	14.45	
Working in off-farm agribusiness	62.17	17.26	
Working with school facilities	60.11	16.64	
Other	61.11	11.79	
None	62.47	17.94	
	Attitude score		
Present Type of SOE			.61
Raising animals or crops	5.70	.73	
Working on a farm, not home farm	5.52	.83	
Working in off-farm agribusiness	5.64	.90	
Working with school facilities	5.59	.91	
Other	5.76	.64	
None	5.65	.73	
	Program planning score		
Present Type of SOE			2.45*
Raising animals or crops	37.46	20.07	
Working on a farm, not home farm	40.75	22.50	
Working in off-farm agribusiness	47.78	24.86	
Working with school facilities	44.33	19.78	
Other	35.28	18.57	
None	31.00	17.39	

Note. * $p < .05$, ** $p < .01$

Table 5

Analysis of Student Attitude Toward SOE Placement Programs and Employment Experience Preferred Before High School Graduation

Occupational area	\bar{X}	SD	F value
Production agriculture	5.75	.67	3.73**
Agricultural mechanics	5.62	.81	
Forestry	5.34	.58	
Horticulture	5.75	.67	
Agricultural sales and service	5.38	.75	
Agricultural processing	4.62	1.17	
Natural resources	5.71	.64	
Other agriculture	5.57	.81	
Non-agriculture	5.75	.94	

Note. ** $p < .01$

Table 6

Analysis of Dependent Variables by Plans to Attend a Vocational School, College, or University After High School Graduation

Plan to obtain post-secondary education	\bar{X}	SD	F value
	Knowledge score		
Yes	66.29	13.58	9.11**
No	61.04	16.92	
Plan to Obtain Post-secondary Education	Attitude score		
Yes	5.69	.71	2.03
No	5.57	.85	
Plan to Obtain Post-secondary Education	Program planning score		
Yes	38.70	20.44	.21
No	37.58	21.53	

Note. ** $p < .01$

Table 7

Analysis of Dependent Variables by Occupational Plans of Students

Occupational area	\bar{X}	SD	F value
	Knowledge score		
Production agriculture	70.31	12.78	2.11*
Off-farm agriculture	65.79	15.25	
Non-agriculture	66.20	13.58	
Undecided	58.33	17.13	
Occupational Area	Attitude score		
Production agriculture	5.98	.53	1.61
Off-farm agriculture	5.68	.70	
Non-agriculture	5.60	.95	
Undecided	5.38	.93	
Occupational Area	Program planning score		
Production agriculture	39.63	21.11	.99
Off-farm agriculture	39.11	21.10	
Non-agriculture	32.88	21.46	
Undecided	35.25	21.80	

Note. * $p < .05$

Table 8

Coefficients of Correlation Between Teacher/School Characteristics and the Dependent Variables

Characteristic	Knowledge score	Attitude score	Program planning score
Total years taught vo ag	-.024	.124	-.099
Number of students in vo ag	.163	.352	.013
Number of students with SOE placement	.146	.263	.146
Months agribusiness experience	-.147	.072	.091
Normal days SOE placement instruction	.219	.372*	.209
Number days SOE placement instruction this year	.271	.146	.226

Note. * $p < .05$

The final comparison examined was the students' occupational plans with each dependent variable. As shown in Table 7, the post hoc test revealed that students planning to pursue employment in production agriculture achieved a significantly higher knowledge score than students undecided about their occupational plans. No significant difference was observed in attitude nor program planning scores when students were grouped according to occupational plans.

Pearson product-moment coefficients of correlation were computed to determine relationships between selected instructor/school characteristics and student performance on the three dependent variables. In Table 8, four of the correlations between the teacher/school characteristics and knowledge score were positive; two were negative. The highest coefficients computed were between the knowledge score and: (a) number of days normally spent teaching sophomore students about SOE placement programs, and (b) number of days spent this year teaching sophomore students about SOE placement programs. These positive relationships indicate the more days teachers spent teaching about SOE placement programs, the higher the students scored on the knowledge test.

Comparison of the SOE placement program attitude score with teacher/school characteristics produced one significant, but relatively weak, correlation. As the days of instruction about SOE placement programs normally provided increased, the students' attitude score tended to increase. Five of the correlations between teacher/school characteristics and the SOE placement program planning scores were relatively low, but positive.

Conclusions and Implications

A trend throughout the findings was that students with a production agriculture background achieved higher scores on the dependent variables than other students. Students living on a farm, engaged in production SOE programs, wanting production agriculture employment experience, and with occupational plans in production agriculture possessed a more positive perception of SOE placement programs as revealed by the SOE placement program knowledge and attitude scores; however, these factors had an inverse effect on the participation of students in these programs. Students with off-farm SOE placement programs achieved significantly higher program planning scores than students involved in production agriculture. These findings suggest that students with a background in production agriculture may have more opportunities to develop occupational abilities and skills related to SOE placement programs than other students. Other students may require more time to develop an understanding and appreciation for SOE placement programs; in essence, they may have fewer opportunities to develop occupational abilities and skills because of situational characteristics. Vocational agriculture instructors should assist students with background in production agriculture in developing a SOE placement program that will complement their occupational objective. This could result in more positive student perceptions and participation in SOE placement programs.

A positive correlation existed between the amount of instruction students received about SOE placement programs and the SOE placement program knowledge and attitude scores. A positive relationship existed between student attitude and the number of students involved in SOE placement programs. These findings suggest that student perceptions about SOE placement programs are enhanced by the number of participating students. Additionally, vocational agriculture instructors should spend an adequate number of days teaching students about SOE placement programs. This could assist participating students to develop a more positive perception.

Finally, further research of other factors influencing student participation and perceptions of SOE placement programs should be conducted. An analysis of additional factors related to the students' personal and situational characteristics may be beneficial to vocational agriculture instructors in assisting students to plan and develop SOE placement programs.

References

- Osgood, C. E., Succi, G. J., & Tannenbaum, P. H. (1971). *The measurement of meaning*. Chicago: University of Illinois Press.
- Pilgrim, D. A., & Williams, D. L. (1984). The contribution of agribusiness placement SOE in developing the occupational ability of vocational agriculture students. *The Journal of American Association of Teacher Educators in Agriculture*, 25(3), 52-59.

(Continued on page 56)