

Evaluation of Instructional Materials on Supervised  
Occupational Experience Placement Programs

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Supervised occupational experience (SOE) programs are characterized as an integral part of the instructional program to equip vocational agriculture students with experiences for agricultural occupations. With more non-farm youth enrolled in vocational agriculture and more students desiring to obtain experience through cooperating agricultural businesses, preparation for occupational experience is becoming more important (U.S. Office of Education, 1967). Research conducted by Pilgrim (1983) and Fletcher (1983) revealed that preparatory instruction in selecting and developing SOE placement programs should be provided in the vocational agriculture class. The primary responsibility for providing this instruction rests with the vocational agriculture teacher (Briers, 1978).

A dilemma arises of how to provide adequate instruction on SOE placement programs with teacher preparatory time at a premium. To assist teachers with this problem, an instructional packet containing subject matter content and instructional aids was developed (Williams, 1983a) to reduce preparation time and insure appropriate content. The instructional packet was developed for vocational agriculture teachers to use in teaching advanced students how to develop SOE programs that include placement (employment) in agricultural businesses and on farms. Research conducted by Pilgrim (1983), Fletcher (1983), and Williams (1983b and 1983c) suggested content and methods to include in the packet.

The effectiveness of instructional materials is unknown until the materials have been tried in the classroom and evaluated in terms of whether or not they have brought about the desired behavioral changes in students (Ridenour, 1965). Briers (1978), Townsend (1981), Birkenholz (1982), and Hosseini (1982) advocated evaluation of instructional materials to determine their teaching and learning value. Thus, a study of the SOE placement program instructional packet was the thrust of this study at Iowa State University (Slocombe, 1983).

Purpose of the Study

The primary purpose of the study was to determine the effectiveness of the instructional packet on preparing students for SOE placement programs as evaluated by (a) student knowledge of SOE

placement programs, (b) student attitude toward SOE placement programs, and (c) student SOE placement program planning. A secondary purpose was to describe personal and situational characteristics of sophomore vocational agriculture students in selected schools in central Iowa. The hypotheses investigated in this study were:

Ho<sub>1</sub>: There is no significant difference between the SOE placement program knowledge scores for the experimental and control treatment groups.

Ho<sub>2</sub>: There is no significant difference between the SOE placement program attitude scores for the experimental and control treatment groups.

Ho<sub>3</sub>: There is no significant difference between the SOE placement program planning scores for the experimental and control treatment groups.

## Methodology

### Design and Sample

A posttest control group experimental design was used in the investigation. A sample of 40 schools was randomly selected from the population, defined as those schools offering vocational agriculture in the north central and south central vocational agriculture/FFA districts in Iowa during the 1982-83 school year. The sample was divided randomly into two groups of 20 schools each; one group of schools was assigned to the experimental treatment and the other group served as the control treatment. Of the 40 teachers contacted, 29 teachers agreed to participate. Teachers not agreeing to participate indicated their unwillingness to alter their instructional program during the specified time period. The experimental units consisted of sophomore vocational agriculture classes while the students comprised the sampling units.

### Description of Treatment Levels

The independent variable manipulated by the researcher was the degree to which teachers had access to the instructional packet on SOE placement programs. The experimental group was provided the instructional packet while the control group was provided with a list of problem areas, study questions, suggested references, and learner needs outlined in the instructional packet. The control group teachers were instructed to use materials and methods they would ordinarily use to teach their sophomore students about SOE placement programs.

### Monitoring of Treatment

To insure that the treatment was administered within the constructs of the investigation, the experimental and control groups were monitored during the experiment through on-site visitations and telephone conversations. A minimum of three telephone conversations were conducted with each teacher during the experiment to assess their progress in teaching the unit. Further monitoring of the experiment was performed through on-site visitations to three schools in each group. The visitations enabled the researcher to observe the experimental and control treatments being used by vocational agriculture teachers in preparing students for SOE placement programs.

### Dependent Variables and Instrumentation

One instrument containing four parts was developed to measure the dependent variables and to elicit personal and situational information from the students.

Part I--SOE Placement Program Knowledge Inventory. A criterion referenced test of 24 multiple-choice items with four alternatives each was used to assess each student's knowledge of SOE placement programs. To insure content validity, the project team evaluated the contents of the test based on the problem areas, study questions, and learner needs outlined in the instructional packet. 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 was administered as a posttest and 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. Research conducted by Kotrlik (1978), McMillion (1966), Birkenholz (1982), and Hosseini (1982) reported success with the semantic differential technique with vocational agriculture students. The instrument consisted of six broad attitudinal concepts, two from each problem area of the instructional packet, and 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 project team selected the bipolar adjectives based on the dimension of meaning they represented and their appropriateness for the concept being measured. The instrument was then evaluated by teacher educators in the Agricultural Education Department 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 attitude inventory

was administered as a posttest with the concepts and their bipolar adjectives randomly arranged.

Factor analytic techniques revealed that six distinguishable concepts were measured by the instrument. In addition, intercorrelations 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. Questions that elicited yes or no responses from the students were developed based on the original statements. The inventory, administered postexperiment, 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 administered postexperiment to collect student data related to selecting and planning SOE placement programs in vocational agriculture.

#### Collection of Data

Teachers in both the experimental and control treatment groups administered the data collection instruments to their students. The instrument was mailed one week before teachers completed their SOE placement program units. Usable data were obtained from 15 schools in the experimental treatment group and 14 schools in the control treatment group. A total of 322 student responses were received.

#### Analysis of Data

The effectiveness of the instructional packet was tested using the independent *t*-test. The .05 alpha level was used in testing the hypotheses. Student characteristics were assessed by nominal variables; thus, percentages were used to summarize the descriptive information.

#### Findings

Previous descriptive studies by Briers (1978), Williams (1977), and Byler and Kass (1976) on Iowa vocational agriculture students

Table 1

*Characteristics and Situations of Sophomore Vocational Agriculture  
Students in Central Iowa, 1982-83*  
(n=322)

Characteristic or situation	Percentage
Place of residence	
City or 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
FFA membership	
Yes	88
No	12
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

have shown a very production-oriented background. These studies, however, assessed freshmen, juniors, and seniors. Table 1 shows the characteristics and situations of sophomore vocational agriculture students in selected schools in central Iowa during the 1982-83 school year.

Contrary to similar studies of Iowa vocational agriculture students, 24% of the sophomore students lived in a city or town. Briers (1978) found that 76% of the students in his random sample lived on a farm; 13.7% lived in a town; and 9.8% lived in a rural area, not on a farm. 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.

The *t*-test as reported in Table 2 revealed no significant difference between the means of the SOE placement program knowledge scores; therefore,  $H_{01}$  was not rejected. Similarly, the *t*-test reported in Table 3 revealed no significant difference between the means of the SOE placement program attitude scores; therefore  $H_{02}$  was not rejected. A *t*-value of 1.29 as reported in Table 4 revealed no significant difference between the means of the SOE placement program planning inventory; thus,  $H_{03}$  was not rejected.

### Conclusions

There was no significant difference in SOE placement program knowledge scores, SOE placement program attitude scores, nor SOE placement program planning scores between the experimental and control treatment groups. Even though the experimental treatment group achieved a higher score than the control treatment group on each dependent variable, the instructional packet was not found to be significantly more effective in preparing sophomore vocational agriculture students for SOE placement programs than the procedures used by the control group teachers.

This finding differs from similar studies conducted by Birkenholz (1982), Briers (1978), Hosseini (1982), and Townsend (1981). The researcher contributes this difference to providing the control group teachers with materials related to the instructional packet. In addition, the duration of time between the treatment and the posttest measurements could have been lengthened to allow time for expected outcomes (dependent variables) to be observed in the students.

Table 2

*T-test of SOE Placement Program Knowledge Score*

Treatment level	n	Mean	S.D.	t-value
Experimental	15	65.97	9.44	1.26
Control	14	61.72	8.77	
Total	29	64.50	15.01	

Note.  $p > .05$

Table 3

*T-test of SOE Placement Program Attitude Score*

Treatment level	n	Mean	S.D.	t-value
Experimental	15	5.66	.361	.70
Control	14	5.56	.426	
Total	29	5.65	.771	

Note.  $p > .05$

Table 4

*T-test of SOE Placement Program Planning Score*

Treatment level	n	Mean	S.D.	t-value
Experimental	15	40.10	8.38	1.29
Control	14	34.88	12.84	
Total	29	38.31	20.80	

Note.  $p > .05$

### Recommendations

The following recommendations are made for further research.

1. A follow-up study of these students should be conducted to determine the long-term effects of using or not using the SOE placement program instructional packet on their involvement in SOE placement programs.
2. The study should be replicated with three experimental groups. The third group should not be provided with materials related to the instructional packet.
3. Instructional materials developed for use in vocational agriculture should be evaluated in terms of utility, feasibility, propriety, and accuracy. Students and teachers must be involved in the evaluation process in order to accurately assess the educational value of the instructional materials.

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