

## AN ANALYSIS OF BENEFITS DERIVED FROM SUPERVISED OCCUPATIONAL EXPERIENCE PROGRAMS

*Willie J. Rawls  
Teacher Education*

*Agricultural Education  
Tuskegee Institute*

Supervised occupational experience (SOE) programs are designed and conducted, along with FFA activities and classroom and laboratory instruction, to develop skills, concepts and values needed by workers in the agriculture industry. SOE programs systematically involve students in "real life" agricultural experiences which are planned and supervised as part of the vocational agriculture curriculum.

Research on the educational and occupational benefits derived from SOE programs is limited. As educators are called upon to defend the cost-effectiveness of their instructional programs, the need for such research will become more apparent.

This article is based on a study of parental perceptions of the benefits derived from vocational agriculture SOE programs in Iowa (Rawls, 1978).

### *Objectives*

The primary objectives of this research were to:

1. Analyze educational and occupational benefits derived from SOE programs;
2. Determine if parents, grouped according to the FFA degree level of their children, perceive the SOE benefit constructs differently; and
3. Determine if significant relationships exist between the SOE benefit constructs.

### *Methodology*

Parents of students enrolled in vocational agriculture programs in Iowa during the 1977-78 school year comprised the

target population for the study. A stratified random sample incorporating four subsamples of parents was used. The four groups were: (1) parents of students with no FFA degree, (2) parents of students with the Greenhand degree, (3) parents of students with the Chapter Farmer degree, and (4) parents of students with the Iowa Farmer degree. There was a total of 446 in the sample.

A questionnaire was developed to collect data from the sample. Parents in the sample were instructed to indicate how beneficial they perceived 40 SOE benefit statements to be to their children. The benefit scale ranged from one (no benefit) to 99 (much benefit). The data were transformed to normal deviates, with transformed scores ranging from 167 to 733 and 500 representing the mid-point. A scale value of one received a -2.33 normal deviate score, a scale value of 50 received a 0.00 normal deviate score and a scale value of 99 received a normal deviate score of 2.33 (Warren, *et al*, 1969). To eliminate negative numbers and decimal points, the normal deviates were multiplied by 100 and then added to a constant of 500 (Cress, *et al*, 1970).

Questionnaires and cover letters were mailed to the homes of participants in the sample. Four follow-up mailings to the nonrespondents were made at two week intervals. These procedures yielded a 63 percent return of properly completed questionnaires.

The Statistical Package for the Social Sciences (SPSS) (Nie *et al*, 1975) was used to analyze data. Factor analysis, PA 2-principal factoring with iteration, was used to identify statistically acceptable benefit constructs. Means and standard deviations were computed for each construct by subsample. Analysis of variance was used to test for significant difference among the subsample of parents on the benefit constructs. When significant differences were observed ( $p < .05$ ), the Scheffe' post hoc test was used. The Pearson Product Moment correlation was used to identify significant relationships between benefit constructs.

## Results

Using a minimum eigenvalue of 1.00, factor analysis results identified three constructs from the 40 benefits statements which accounted for 98 percent of the total variability. A fourth concept, which did not meet the criterion eigenvalue, accounted for the remaining two percent of variance and was comprised of eight benefit statements.

Table 1 contains results of the factor analysis of the three significant benefit constructs. Seventeen variables loaded at .50 or higher on the first construct, which was identified as Work Attitude. The variables related to work attitude accounted for 89 percent of the total variability. The second benefit construct identified by the analysis included nine variables related to Occupational Development. Nine variables loaded .47 or higher on this factor and accounted for five percent of the variance. The third benefit construct accounted for three percent of the total variance. Six variables, relating to formal and informal communication, loaded at .45 or higher on this factor, which was named Human Development Skills.

Alpha internal consistency measures of the three benefit constructs ranged from a high of .97 on Construct I to a low of .88 on Construct III. The reliabilities show high internal consistency and are adequate for evaluation purposes.

The means, standard deviations and analysis of variance for parental perceptions of benefit constructs derived from students' SOE programs are reported in Table 2. There were significant differences among subsample means on two of the three constructs. This indicates dissimilarities among subsamples of parents relative to the benefits their children derived from their programs in the Work Attitudes and Occupational Development factors. The benefit construct where no significant difference existed was Human Relation Skills. This indicates similarities among subsamples of parents relative to this factor.

Parents of Iowa Farmer Degree recipients rated all three benefit constructs above midpoint on the scale, while parents of Chapter Farmer Degree recipients and parents of students who attained no FFA degree each rated two different benefit construct above midpoint. The Occupational Development construct was not rated above midpoint by parents of Chapter Farmer Degree recipients and the Human Relations construct was not rated above midpoint by parents of students who attained no FFA degree. Parents of Greenhand Degree recipients rated only the Work Attitude construct above midpoint. This same construct was rated above midpoint by all four subsamples of parents, which could indicate that parents of all vocational agriculture students perceive their sons and daughters as deriving a strong work attitude from their SOE programs.

Table 3 shows the intercorrelations between benefit constructs. A significant relationship ( $p < .001$ ) existed between Work Attitudes and Occupational Development, as revealed by the coefficient value of .82. A coefficient value of .83 indicated that a significant relationship ( $p < .001$ ) existed between Work

Table 1

## BENEFIT FACTOR ASSIGNMENT BY HIGHEST FACTOR LOADING

Benefit Statements	Loading
<i>Factor I-Work Attitude</i>	
Provided experience in conducting business	.50
Provided motivation for learning	.50
Provided pride in ownership	.54
Provided an opportunity to learn on his/her own	.63
Developed pride in employment	.69
Promoted acceptance of responsibility	.74
Developed independence	.77
Developed self-confidence	.78
Aided in making career choices	.50
Encouraged learning while earning money	.48
Developed an appreciation for work	.69
Developed citizenship traits	.55
Developed abilities in cooperation	.63
Provided an opportunity to plan work	.61
Provided an opportunity to make decisions	.57
Provided an opportunity to solve problems	.59
Provided an opportunity to put plans into action	.56

Table 1, Continued

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Item	Loading
<i>Factor II-Occupational Development</i>	
Encouraged the use of approved agricultural practices	.69
Promoted interest in agricultural studies	.62
Provided a way to grow into farming	.57
Provided an opportunity for individualized teaching	.47
Helped attain advanced FFA degrees	.52
Developed skills needed in farming	.69
Encouraged the production of animals and crops	.78
Encouraged the use of approved marketing procedures	.67
Encouraged keeping records	.50
<i>Factor III-Human Relations</i>	
Extended education from school to the community	.46
Developed occupational skills needed in an off-farm agricultural occupation	.45
Promoted student-vocational agriculture teacher relationship	.47
Improved school attendance until graduation	.53
Helped maintain a favorable home environment	.59
Contributed to relationship between school and home	.68

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Table 2

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE FOR PARENTAL PERCEPTIONS  
OF BENEFIT CONSTRUCTS DERIVED FROM STUDENT SOE PROGRAM BY SUBSAMPLE

	Group 1*	Group 2*	Group 3*	Group 4*	F ratio
Benefit Constructs	<u>Mean</u> S.D.	<u>Mean</u> S.D.	<u>Mean</u> S.D.	<u>Mean</u> S.D.	
Work Attitudes	<u>522.12</u> 112.88	<u>507.36</u> 104.65	<u>548.88</u> 90.70	<u>587.10</u> 94.10	9.76** (4,3>1,2)
Occupational Development	<u>583.41</u> 124.58	<u>485.30</u> 121.02	<u>472.71</u> 105.19	<u>585.88</u> 85.00	17.23** (4, 1>2. 3)
Human Relations	<u>491.46</u> 118.48	<u>478.60</u> 115.18	<u>516.92</u> 105.20	<u>563.32</u> 98.79	8.43

\*Group 1 = parents of students who attained no FFA degree, Group 2 = parents of students who attained the Greenhand Degree as their highest degree, Group 3 = parents of students who attained the Chapter Farmer Degree as their highest degree, Group 4 = parents of students who attained the Iowa Farmer Degree as their highest FFA degree.

\*\*Group means significantly different at .05 level of probability.

Attitudes and Human Relations. A significant relationship ( $p < .001$ ) also existed between Occupational Development and Human Relations, as indicated by the coefficient value of .78. These statistically significant relationships indicate that the benefit constructs are not independent, but do in fact consistently measure parental perceptions of benefits derived by students from their SOE programs.

Table 3

INTERCORRELATION COEFFICIENTS BETWEEN BENEFIT CONSTRUCTS

Benefit Construct	Work Attitudes	Occupational Development	Human Relations
Work Attitude	1.00		
Occupational Development	.82***	1.00	
Human Relation	.83***	.78***	1.00

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

*Conclusions and Recommendations*

This research analyzed three benefit constructs derived from vocational agriculture SOE programs--Work Attitudes, Occupational Development and Human Relations skills. The analysis began with 40 benefit variables. Thirty-two of the variables loaded at .45 or higher on three factors. High internal consistency measures were observed among the variables contained in each of the constructs, indicating the achievement of strong evaluative structures. Based on the findings, the researcher concluded that parents perceived their sons and daughters deriving benefits from their vocational agriculture SOE programs in the areas of Work Attitudes, Occupational Development and Human Relations.

Parents of Iowa Farmer Degree recipients perceived all three benefit constructs as being derived from student SOE programs, while parents of Chapter Farmer Degree recipients perceived two benefit constructs, Work Attitudes and Human Relations, as being derived from student SOE. Two of the three benefit constructs, Work Attitudes and Occupational Development, were perceived to

be derived from students' SOE by parents of students who attained no FFA degree. Parents of Greenhand Degree recipients perceived students' SOE programs to provide benefits in only the Work Attitude factor. This observation may reflect the relative short period of time their sons and daughters were involved in SOE programs.

Finally, the research identified statistically significant relationships among the three benefit constructs, indicating that they are not independent but do consistently measure perceived benefits of SOE programs.

Parents of vocational agriculture students recognize the educational and occupational benefits derived from SOE programs and will generally support educational programs if they can see the benefits provided to their sons and daughters. Pre-service and inservice agricultural education programs should design and implement programs that include parental involvement.

Research needs to be conducted that will identify benefit constructs that may be derived from the classroom laboratory and FFA components of vocational agriculture programs.

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