

## ANALYSIS OF THE CONTINUING DECLINE IN USE OF SUPERVISED AGRICULTURAL EXPERIENCE (SAE) IN NEW YORK STATE

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### Abstract

*Agricultural educators are confronted with a dilemma. They continue to espouse a theory of learning that requires Supervised Agricultural Experience (SAE) but their students practice fewer and fewer SAEs. The various dimensions of the theory-to-practice dilemma have not been adequately addressed by agricultural educators. Researchers have recommended changes in either espoused theories or theories-in-use, but with little measurable impact. With the dilemma and decline of SAE in mind, a descriptive study was conducted in 1996 to analyze the status and importance of SAE. The findings provided a snapshot of SAE in New York state, showed measurements of secondary school teacher attitudes toward various aspects related to SAE, and compared perceptions of teachers at central schools with those at BOCES (multiple-school programs). Data, compared with a precedent study conducted in 1983, indicated a 10% decrease in SAE practice since 1983. A low level of summer employment, limited release time for SAE supervision during the school day, decreased assistance with transportation costs, and complicated scheduling problems with competing school activities were the most formidable barriers identified. A comprehensive overhaul of thinking about and practice of SAE was recommended in order to raise up innovative interventions that might arrest the decline of SAE.*

Agricultural educators are confronted with a dilemma. On the one hand, they continue to espouse a theory of learning that requires Supervised Agricultural Experience (SAE). On the other hand, their students practice fewer and fewer SAEs. Various dimensions of this dilemma have been addressed by researchers, but with little visible impact.

Agricultural educators have conducted considerable inquiry into experiential learning process expressed through the SAE approach. Dyer and Osborne (1995 and 1996) examined all the relevant literature on SAE research and found that SAE programs lacked definition, focus, and direction. Osborne (1988) also reported that teachers generally supported SAE but found great difficulty in implementing the concept with students.

Increasingly, for at least that past 30 years, a change in focus of agricultural education away from production agriculture to a wider array of food

system interests has become evident. This lessening of focus has contributed to ambiguity and discrepancy, creating uncertainty about SAE (Boone, Doerfert & Elliot, 1987). As a result, participation in SAE has declined. Penrod (1984) reported that as few as 30% of agricultural education students in New York state had SAEs in 1982. Other states, reportedly, have higher levels of SAE participation (Dyer & Osborne, 1995). Nation-wide efforts have encouraged incorporation of SAE principles into science-oriented and specialty areas of instruction, departing from a more singular occupational focus (National Research Council, 1988).

A precedent New York study, completed in 1983, indicated that secondary teachers of agriculture still espouse support of the concept of experiential learning but have general difficulty utilizing these concepts in their instructional design (Berkey & Sutphin, 1983). A recent study indicated that Tennessee teachers had positive perceptions of SAE planning and supervision activities (Swortzel,

1996). There were even signs that teachers thought SAEs were even more important than in previous eras (Bobbitt, 1986). Deterrents to SAE effectiveness were discovered to be lack of facilities, low student desire, inadequate teacher time for supervision, student participation in other school activities, and various economic factors (Foster, 1986). Lack of agricultural background, inadequate resources, and large student-teacher ratios are additional inhibiting factors (Lambreth, 1986).

### Objectives

With the decline of SAE in mind, this study was designed in 1996 to analyze and document the status and importance of SAE in New York state compared to the 1983 baseline information. The findings provided a snapshot of SAE, showed measurements of agricultural educator attitudes toward various aspects related to SAE, and compared perceptions of teachers at central schools with those at multiple-school programs conducted by the Board of Cooperative Educational Services (BOCES) in New York State. The research design allowed comparison with a precedent study completed in New York state with the same population group 13 years ago (Berkey & Sutphin, 1983). This study:

1. Described characteristics of agricultural educators, especially related to the SAE portion of their educational programs.
2. Measured perceptions of agricultural educators toward the benefits, current practices, and importance/support of selected factors related to SAE.
3. Compared and contrasted the characteristics of agricultural educators and their SAE programs in 1996 with agricultural educators and their SAE programs in 1983.
4. Recommended future research on SAE at the state, national, and international levels.

### Methods

A descriptive survey in the form of a mail questionnaire, using a total population sample, consisting of all secondary school agricultural educators (N=222) was chosen. The New York State agricultural educators' directory was the source of names and addresses.

An instrument that had been developed, tested, validated, and implemented in 1983 was adopted, with only minor updates in format and language, to allow data comparison (Berkey & Sutphin, 1983). The questionnaire included items about (a) type of school; (b) teacher background in agricultural education, teaching experience, and certification status; (c) type and scope of school laboratory facilities; (d) percentage of students in FFA; (e) type and scope of SAE; (f) teacher attitude toward the value of SAE; and (g) current practice and importance of SAE.

A questionnaire packet and a postcard reminder were mailed to all agricultural educators, with a replacement questionnaire packet sent to all non-respondents after four weeks. There were 135 surveys received by return mail, representing a 61% response; identical to the response rate in 1983 (Berkey & Sutphin, 1983).

A telephone follow-up of 24 randomly-selected non-respondents revealed differences from respondents in one, two, or three ways: (1) non-respondents did not consider themselves teaching agriculture subject matter (e.g. taught only technology or mechanics); (2) non-respondents did not use SAE; or (3) non-respondents were located in the New York city area. These same three characteristics described non-respondents in the 1983 survey.

### Participation in SAE

Participation in SAE had decreased 10% since 1983. Only 29% of agricultural students had SAEs at the time the survey was completed in 1996 (19%

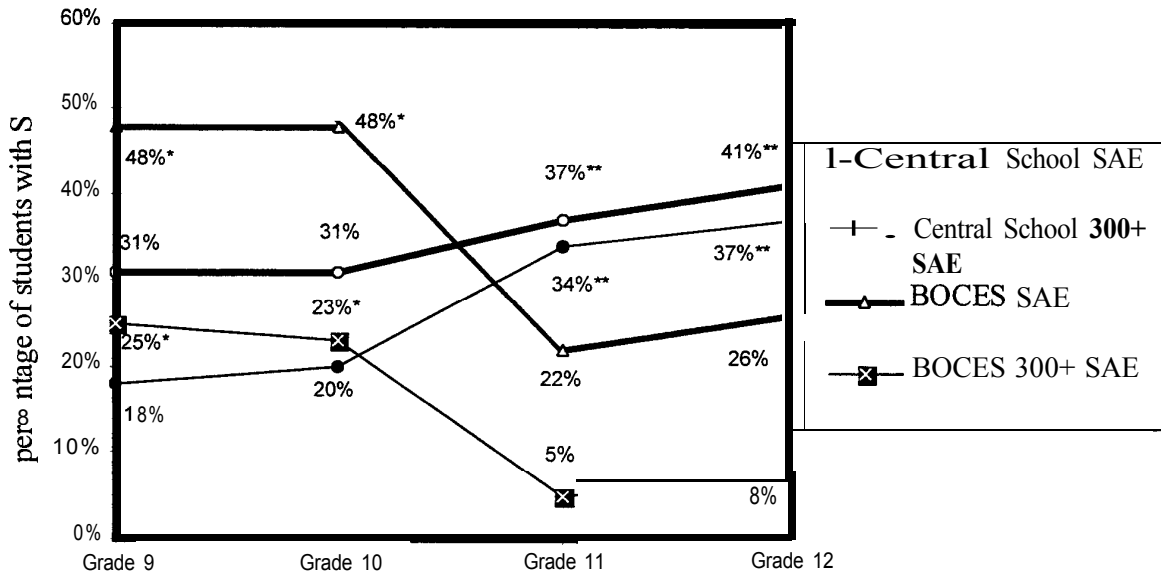
had SAEs of 300+ hours), down from 39% participation in 1983 (28% had SAEs of 300+ hours) (Berkey & Sutphin, 1983).

had SAEs (7% had SAEs of 300+ hours). Figure 1 shows percentage of students with SAE by grade level.

Almost half (48%) of the 1996 respondents taught at central schools and 39% taught at BOCES (multiple-school programs). The remaining 13% were either teaching at a city school, prison, or other non-traditional institution. Comparisons between central school and BOCES respondent groups were made using cross-tabulations and t-tests, analyzed on SPSS software. Central school teachers reported that 34% of their students had SAEs (25% had SAEs of 300+ hours), whereas BOCES teachers reported that 25% of their students

### Current SAE Practices

Agricultural educators responded to twelve statements describing practices commonly associated with successful SAEs (see table 1). Current practice was measured with a yes/no selection. Importance of the twelve items was rated on a four-point likert-type scale: 1 =not important; 2=limited importance; 3=important; 4=essential. Data compiled from this section of the survey allowed comparisons between espoused theory



\* Less than 10% of BOCES agricultural enrollment is ninth and tenth graders.

\*\* Central school enrollment declined 25%, from the previous year, for both the eleventh and twelfth grades.

Figure 1: Students with SAE and 300+ Hour SAE by Grade Level

(importance) and theory-in-use (self-reported current practice), as conceptualized by Argyris & Schon (1996).

Comparison of 1996 and 1983 data yielded findings that reinforced the perception of continual decline in the use of SAE, as illustrated in Figure 2.

Current practices of 1996 central school respondents ranged from a low of 5% for “conducting an annual review of SAE”, to a high of 60% for “have summer employment”. The 1996 central school respondents reported an increase in

use for only one (out of twelve) SAE practice; “provision of additional credit for students completing an SAE of 300+ hours” rose from 28% in 1983 to 57% in 1996.

Agricultural educators from central schools had decreased use of ten practices. The biggest decline was for “conducting annual SAE reviews,” practiced by 22% of central school teachers in 1983; and by only 5% in 1996. Other big declines were for “provision of a school vehicle” and “provision of mileage reimbursement.” Vehicles had been available to 56% and mileage

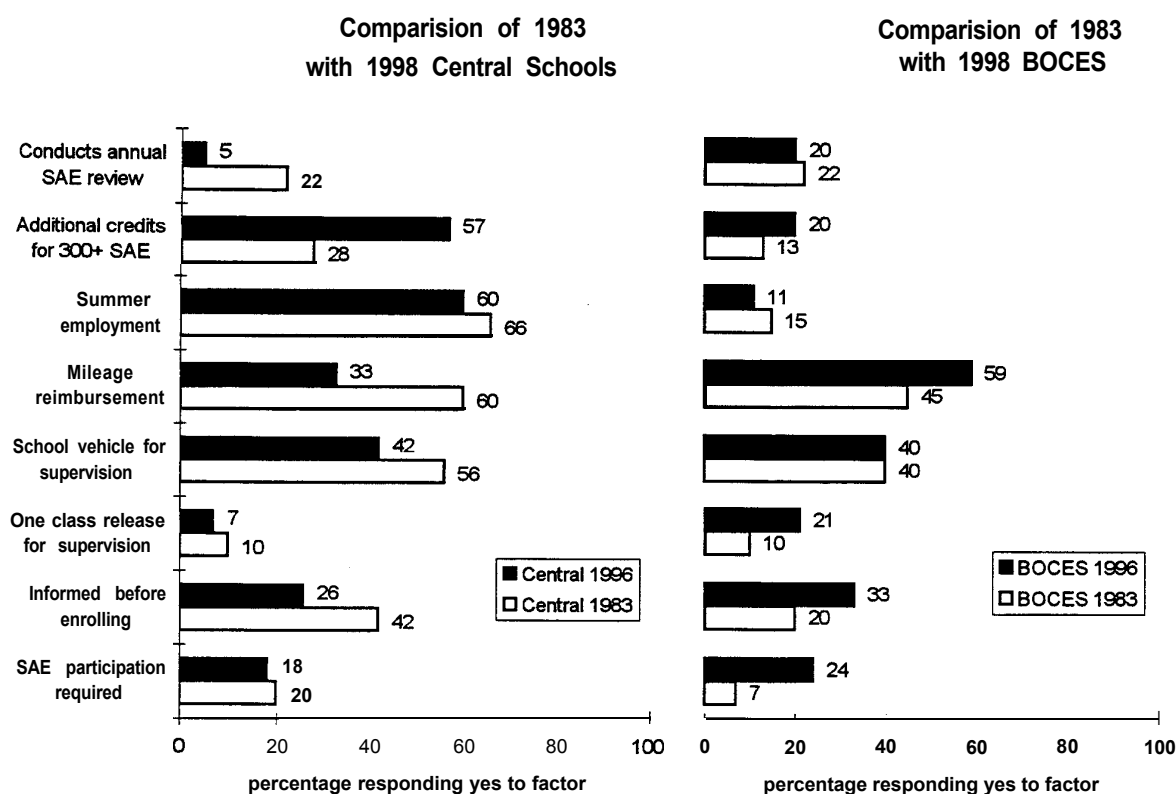


Figure 2. Comparison of 1996 and 1983 Central Schools and BOCES on SAE.

Table 1. Current Practices and Importance of Each Factor for New York Agricultural Educators: A Comparison of Central School Respondents with BOCES Respondents

Factor	*	Current Practice			Importance *			t-value
		Yes%	No%	n	mean	s.d.	n	
Appropriate SAE opportunities are made available to all agriculture students in your classes, including the disadvantaged and disabled.	C <sup>1</sup>	56.1	43.9	57	3.35	2.57	48	.84
	B*	52.9	47.1	34	2.92	.87	27	
You are employed during the summer for SAE supervision.	C	60.3	39.7	58	3.24	.91	51	2.94 <sup>***</sup>
	B	11.1	88.9	36	2.46	1.39	26	
The students in your classes may earn additional credit toward graduation for 300 hours SAE beyond agriculture class requirements.	C	56.9	43.1	58	3.00	.78	52	3.43 <sup>***</sup>
	B	20.0	80.0	35	2.30	.95	27	
Student schedules are arranged with guidance counselor(s) to accommodate your student's SAE.	C	20.0	80.0	60	2.78	.76	50	-1.08 <sup>***</sup>
	B	37.1	62.9	35	3.00	1.00	27	
You are provided release time from school to supervise student SAE one period per day.	C	06.7	93.33	60	2.78	.97	51	.53 <sup>***</sup>
	B	20.6	79.4	34	2.65	1.17	29	
You are given additional release time for SAE as needed based on the number of students.	C	09.1	90.0	55	2.74	.94	47	.50
	B	30.3	69.6	33	2.62	1.21	29	

Table 1 Continues

Table 1. Continues

Factor	*	Current Practice			Importance* *			t-value
		Yes%	No%	n	mean	s.d.	n	
SAE orientation is conducted for new guidance and administrative personnel involved with SAE.	C	13.3	86.7	60	2.67	.92	52	.39
	B	08.6	91.4	35	2.58	.97	24	
You are provided a school vehicle for SAE visits.	C	41.7	58.3	60	2.60	.93	50	.78***
	B	40.0	60.0	35	2.41	1.18	29	
You are provided mileage reimbursement for use of your personal vehicle for SAE visits.	C	32.8	67.2	58	2.57	.98	49	-.80
	B	58.8	41.2	34	2.78	1.25	27	
Participation in SAE is required for all agricultural students.	C	17.7	82.3	62	2.40	.93	56	-.43
	B	23.7	76.3	38	2.50	1.08	32	
Students are informed of the SAE requirement before they enroll in your class.	C	25.8	74.2	58	2.35	.97	46	.24
	B	33.3	66.7	36	2.29	1.10	31	
An annual review of SAE is conducted by school administration.	C	05.0	95.0	60	2.31	.81	52	-.79***
	B	20.0	80.0	35	2.48	.99	23	

\*C = Central High School Respondent, B = BOCES Respondent

\*\* = Four-point likert type scale: 1 = not important, 2 = limited important, 3 = important, 4 = essential

\*\*\* = Significant at .01 alpha level

reimbursement to 60% of central school teachers in 1983, while only 42% had a school vehicle and 33% reimbursement in 1996. There was a big decrease on one other item; 42% of central school respondents "informed their students about SAE before enrollment" in 1983; while 26% responded affirmatively in 1996.

### Perceived Importance of SAE Practices

The most important SAE practice was that "appropriate SAE opportunities should be made available to agriculture students, including the disadvantaged and handicapped." Both the central school and BOCES respondents rated it highly with means of 3.35 and 2.92 (see table 1). However, in

spite of its rated importance, only half of all respondents reported following this practice in current teaching activities.

Summer employment was the second most important item identified by central school teachers, with a mean score of 3.24. Only nine (14%) of the central school respondents had employment for 21 days or more in the summer. BOCES respondents gave summer employment a much lower mean score of 2.46; still in the slightly important range, but ranked as their eighth most important item (out of the twelve factors). Only one of the BOCES respondents (2%) reported a summer contract longer than 20 days.

The central school respondents thought it was important (mean of 3.00) that students receive additional credit beyond the agriculture class requirements for 300+ hours of SAE, even though only 57% were operating consistently with this belief about SAE. Extra credit for 300+ hours of SAE was considered of lesser importance (mean 2.30), given by fewer BOCES teachers (11%), and ranked as the tenth most important item (out of twelve).

The increase in importance and practice of giving extra credit for 300+ hour SAEs may signal an emerging trend, reinforced by comments written on questionnaires by respondents. More and more agricultural educators, particularly those in central schools, show signs of stress, compounded by the high level of effort required to implement effective SAEs. Three sample written comments were: "I feel 'taxed to the max' just to do what I do at present. . ."; "Each year there are larger classes, more duties, and less time"; and "I have little free time to push students between class preparation and FFA activities."

### **Perceived Benefits of SAE**

Table 2 shows mean scores for four items that describe SAE benefits. The means are 3.75 to 4.52, indicating solid agreement by both BOCES and central schools teachers to the basic tenets guiding SAE philosophy. However, the data in table 2 also show that central school respondents perceived higher benefits from SAE than their BOCES counterparts. BOCES respondents scored consistently lower than the central school respondents, with significant differences measured on all four items.

The BOCES and central school mean scores on the fourth item, "SAE, as well as FFA and in-class instruction are necessities for a quality agriculture program" is an indicator of current and future problems. It suggests that New York agricultural educators are not unified in their belief that a quality program must have all three components. The low level of SAE is accompanied by the finding that only 66% of agriculture students from central schools and 57% of BOCES students had joined FFA in 1996.

### **Continuing Decline in SAE**

Without a doubt, the decline of SAE, in its various and serious dimensions, has been revisited through this study. From one perspective, it is affirming to learn that agricultural educators continue to espouse a theory of learning that emphasizes SAE. In addition to the results discussed in this paper, many of the New York agricultural educators affirmed, through written comments, their dissatisfaction with the current situation of declining SAE. However, from another perspective, this study exposes continuing decay in actual practice of a cornerstone teaching and learning philosophy. It is alarming to learn that seven in every ten students in New York agricultural education programs are missing experiential opportunities imbedded in SAE.

Table 2. Respondent's Opinions About the Benefits of SAE

Benefits of SAE*	**	Mean	SD	n	t value***
Students participating in SAE develop favorable work attitudes, values, and habits.	C	4.44	.53	62	1.08'
	B	4.28	.91	36	
Students develop technical skills and knowledge from SAE participation.	C	4.52	.54	62	1.99''
	B	4.22	.93	36	
The agriculture program, school, and community benefit from offering SAE to agriculture students.	C	4.40	.61	62	.80***
	B	4.28	.94	36	
In order to have a quality agriculture program, SAE as well as FFA, and in-class instruction is necessary.	C	4.14	1.04	62	1.71'''
	B	3.75	1.20	36	

\* = Likert-type scale: 1=strongly disagree; 2=disagree; 3=undecided; 4=agree; 5=strongly agree

\*\* C = Central High School Respondent; B = BOCES Respondent

\*\*\* = Significant at the .01 alpha

Various dimensions of the theory-to-practice dilemma have not been adequately addressed by agricultural educators. Most literature on SAE has recommended changes in either espoused theories or theories-in-use, with miscellaneous other suggestions for modifications in one or both. For example, the precedent 1983 New York study concluded with a recommendation that "strategies need to be identified to change policies in BOCES and central schools" (Sutphin, 1984). A positive change, as indicated by a 10% increase in the number of teachers with written policies in 1996, points to improvement. However, in spite of these efforts to articulate SAE requirements, the actual practice of SAE has continued to decline.

There are certainly no easy solutions to the problem of decline in quantity and quality of SAEs. Agricultural educators have been wrestling with this problem and experimenting with changes for years (Dyer and Osborne, 1995). Even though teachers at BOCES in 1996 improved in several categories of SAE espousal and practice compared to 1983, their SAE activity is still lower than counterpart teachers at central schools. Low levels of summer employment, limited release time for SAE supervision during the school day, decreased assistance with transportation costs, and complicated scheduling problems with competing school activities are formidable barriers to positive change.

Admittedly, there is nothing new about trying to leverage change in the way agricultural educators

think about and practice SAE. As recently as 1992, the National Council for Agricultural Education suggested a transition to three types of SAE: exploratory, entrepreneurship, and placement (National Council for Agricultural Education, 1992). Researchers report that adjustments in SAE curriculum have made little change in SAE programs (Dyer & Osborne, 1996). Now, in light of ongoing limited success, a more comprehensive overhaul or attempt at more lateral thinking about the concept of SAE may be needed. As a start, agricultural educators might be well-served to inquire into various aspects of the broader conceptualization about experiential learning, agriculture systems, and action research as a way of expressing SAE-type activity (Kolb, 1984) (Bawden, 1995) (Argyris & Schon, 1996). The magnitude of the problems facing SAE will require researchers and practitioners to embrace the challenge together. Over the next few years, New York researchers and educators will investigate and examine SAE espousal and practice, looking for innovative interventions to reverse the decline of SAE.

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