

## **DEVELOPING A MODEL FOR SUPERVISED AGRICULTURAL EXPERIENCE PROGRAM QUALITY: A SYNTHESIS OF RESEARCH**

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### **Abstract**

*The objectives of this investigation were to synthesize research related to SAE program quality, identify areas of deficiency, and to develop a model for conducting research related to SAE program quality. Overall, research in this area is primarily descriptive, survey, non-programmatic, and empirically deficient. Findings revealed that no standardized criteria exist by which to measure SAE program quality. Teacher attitudes and past SAE experience strongly influence SAE program quality. However, the number of teachers with high school SAE experience as students is declining, emphasizing the need for teacher educators to provide pre-service and beginning teachers with SAE instruction. Also, due to changing curricula and diverse student populations, school-site lab facilities are essential. Future research in this area should be directed toward determining the empirical value of SAEs; effects of SAE program type and quality on student achievement; influence of learning styles on SAE program effectiveness; effective teaching methods for SAE instruction; role of classroom instruction on SAE program quality; effects of SAE programs as experiential learning sources for problem solving methods; factors contributing to program quality; criteria to evaluate program quality; lab facilities needed to address student diversity; and SAE program needs of rural, suburban, and urban students.*

A quality education is a birthright of every United States citizen. Some of the greatest educational controversies, however, have focused on the definition of “quality” and how to achieve it. For centuries educators believed they had the answer: memorization and drill (Moore & Moore, 1984). By the 19th century, however, only 3% of all students graduated high school (Herren, 1987).

With the emergence of the philosophies of John Dewey early in the twentieth century, attitudes toward education were rejuvenated. Dewey proposed basing education on the personal experiences of the learner and charged teachers with the responsibility of providing those experiences (Dewey, 1938). Agricultural educators responded with the implementation of supervised agricultural experience (SAE) programs (Stimson, 1942).

Much research has been conducted pertaining to SAE programs in an effort to aid program partners in administering effective SAEs. The purpose of this synthesis was to amass the results of those studies and amalgamate findings in a referential manner. Barrick, Hughes, and Baker (1991b) expressed the need for such a compilation and synthesis of past research in order to provide the profession with a basis from which future research efforts could be directed.

Findings presented in this work are part of a larger study which synthesized published SAE-related research into 13 major subject areas: (a) perceptions; (b) benefits; (c) participation; (d) scope; (e) administration; (f) teacher satisfaction; (g) time requirements; (h) supervision; (i) evaluation; (j) program quality; (k) student and teacher backgrounds; (l) facilities; and (m) relationship between FFA and SAE.

## Objectives

The primary objective of this investigation was to synthesize SAE-related research to identify areas of deficiency. A second objective was to develop a model for conducting research related to SAE program quality.

## Procedures

Five sources were used to gather data to meet the objectives of the study: Journal of Agricultural Education, The Journal of the American Association of Teacher Educators in Agriculture, Dissertation Abstracts International, Proceedings from Regional and National Agricultural Education Research Meetings, and ERIC Documentation Reproduction Service. Studies appearing in these references were located through a library systems search completed at the University of Illinois and consisted of articles published from 1964 through June, 1993.

## Findings

Limited research has been conducted to either define SAE program quality, or to determine how that quality should be measured and/or evaluated. Likewise, in nearly all of the studies reviewed, researchers either failed to define "quality" or associated quality with scope. According to Case and Stewart (1985), however, it is possible that an SAE program score could be calculated as an indicator of program quality. Morton (1980) did so using a formula based on scope and labor income. Foster and Riesenber (1985) reported that the opinion of parents was valued by teachers as the highest indicator of quality. Warren and Flowers (1992) concluded that teachers must take time to plan, practice, and evaluate SAEs. Likewise, Herren and Cole (1984) recommended that students receive credit for SAE participation.

Not all teachers grade SAE programs, however. Berkey and Sutphin (1984) reported that 41% of the agricultural education teachers in

New York did not consider SAE programs when assigning grades. Shelhamer (1984) reported that just over half of the teachers in a Montana study graded SAEs. Osborne (1988b) noted that regular evaluation of SAE programs is a common practice among most teachers in Illinois, but that only 51.3% of the teachers in Illinois counted SAE programs as a portion of students' grades in agriculture (Osborne, 1988a). Osborne (1988a) also reported that 42% of the teachers reported having no minimum standards or scope guidelines for the major types of SAEs.

The quality and size of SAE programs has been found to be significantly and positively related to the length of teacher contract, number of supervised visits made by teachers, type of SAE program conducted by the student, travel funds available, teacher assistance with fairs (Arrington, 1981; Arrington & McCracken, 1983; Case & Stewart, 1985), parental support and encouragement, pupil-teacher ratio, students' career plans, the dependency of the family on farm income, availability of released time (Gibson, 1988), number of years of high school agriculture completed by the agricultural education teacher (Anydoh & Barrick, 1990), number of years the student was in the agriculture program (Anydoh & Barrick, 1990; Gibson, 1988), amount of time the teacher teaches agriculture courses, years of experience, the teacher's involvement in adult education programs, number of teachers in the particular agriculture program (Straquadine, 1990), teacher priority of SAE, and time devoted to SAEs (Warren & Flowers, 1992).

While classroom instruction was found to improve SAE program quality, no study could be found which supported the inverse position. Case and Stewart (1985) concluded that the number of class hours spent on SAE instruction, and the use of SAE examples during instruction, improved SAE program quality. Likewise, Anydoh and Barrick (1990) and Gibson (1988) reported a positive relationship between SAE quality and the amount of

classroom instruction on SAEs. Jones (1981) reported SAE programs to be effective teaching “methods.”

Many educators believe SAE programs to be valuable not only in the application of theory, but also as an experiential learning tool (Benson, 1981; Warren & Flowers, 1992). Harris and Newcomb (1985) reported that agricultural education teachers believed classroom instruction should be related to SAE programs. Discussing SAE problems in class was one strategy that Illinois teachers reported they often used to help students conduct SAE programs (Osborne, 1988b). In contrast, however, a study by Chuatong (1987) revealed little relationship between student problem-solving ability and their level of involvement in SAE programs.

Classroom SAE instruction may be emphasized more in larger and less specialized classes. Briers (1979) found that as class size increased, the number of in-class hours spent on SAE instruction also increased. Burnett and Smith (1983) reported that only 58% of the respondents in a national study of horticulture teachers reported teaching a unit on SAE.

Several studies have been conducted concerning the use of various instructional packets and their influences on various aspects of the SAE program. Morris (1981) and Morris and Williams (1984) reported that use of an SAE instructional packet enhances students’ self-image. Jones (1981) found that instructional materials aid in student achievement, especially in mechanics and animal science. Slocombe (1983) reported that instructional packets greatly aided in teaching about placement programs. Haynes (1981), however, reported that SAE instructional materials used in his study were of no help in instilling student work values.

Teachers may be the greatest determinants of SAE program quality. Harris and Newcomb (1985) reported that teachers who provide high

quality SAE programs recognize the educational value of SAEs more than do those who provide low quality SAEs. Ingvalson (1983) reported that as teachers’ expectations rose, so did the attitudes and achievement of students. Long and Israelsen (1983) also found a strong relationship between teacher emphasis and student achievement. However, French (1985) concluded that neither the best nor worst teachers considered their SAE programs to be strong. Both groups felt that SAEs had more to offer than was being provided.

A possible explanation for this attitude may be related to the lack of adequate college-level training in conducting SAE programs. Agricultural education teachers in 12 north central states identified one characteristic of being an effective teacher as having a high percentage of students with active SAE programs (Miller, Kahler, & Rheault, 1989). Yet as early as 1947, Kirkland (cited in Barrick, et al., 1991a) reported that teachers perceived the training they had received to be insufficient in administering SAE programs. Pfister (1983) identified the greatest areas of weaknesses during student teaching to be adult education, SAE programs, record books, and FFA. Only 13% of the teachers in Osborne’s (1988a) study had completed a course on SAE programs. Dugan and Sutphin (1984) concluded that approximately one-half of the teachers in their study needed additional training using SAEs.

In other studies dealing with teacher preparation, McCall (1992) reported that teachers certified by alternate methods of certification operated less effective SAE programs. Teachers most likely to have students with high quality SAEs include those with master’s degrees (Guiler, 1962) and those who participate in professional events (Harris & Newcomb, 1985).

Demands on teacher time affect SAE program quality. Teachers in multi-teacher programs are likely to place more emphasis on SAE programs (Harris & Newcomb, 1985). Gibson (1988)

reported a negative relationship between the quality of the SAE programs and the number of out of school activities (other than FFA) required of the teacher. Anyadoh and Barrick (1990) and Gibson (1988) also found a negative relationship between the distance the teacher lived from school and the quality of the SAE program.

Researchers have identified several obstacles to conducting quality SAE programs. A lack of student motivation, limited student opportunities, lack of teacher time, poor student record keeping practices, inadequate financial resources and facilities, and low parent interest were obstacles cited by Osborne (1988a). Miozi (cited in Lee, 1985) reported that excessive paperwork, too many students, and a lack of farm backgrounds by the students discouraged teachers in West Virginia from implementing SAE programs. Georgia teachers perceived six of the twenty most difficult responsibilities of teaching agricultural education having to do with conducting SAE programs. Only adult education problems exceeded SAE difficulties (King & Miller, 1985).

The relationship between facilities and SAE program quality has largely been unexplored, although several researchers cite the need for adequate school-site SAE facilities. Anyadoh and Barrick (1990) concluded that a significant positive relationship exists between availability of school facilities and the quality of SAE programs. Beeman (1967) reported that a majority of agricultural education teachers and school administrators agreed that schools should provide land to agriculture programs for instructional use. Berkey and Sutphin (1984) concluded that school labs are potentially viable sources of SAE programs since over 50% of the schools had land labs and over 1/3 had greenhouses or forestry plots. Likewise, over one half of the schools in Briers' (1979) study provided some kind of facility for SAEs. Bingham (1969) identified a need for more SAE facilities.

Williams and McCarthy (1985) reported that school farms in Iowa were used primarily as a laboratory for class instruction. However, the study also found that the farms were used more as a fund-raiser for FFA activities than for SAE experience (only 5.6% of the students gained primary SAE experience on school farms). Administrators and teachers disagreed on the value of school farms. Administrators perceived marketing experience and SAEs as the greatest advantage, while instructors perceived FFA participation and development of individual leadership abilities as the greatest value.

### **Conclusions and Recommendations**

Overall, research addressing the quality of SAE programs is best characterized as descriptive, survey, and non-programmatic. No experimental studies were found which provided empirical data to support the hypothesis that SAE programs at any level of quality are educationally beneficial to students. Experimental studies should be conducted to assess the educational value of quality SAE programs.

No research-based, standardized SAE program criteria have been published by which to determine SAE program quality. Nationally, a major research effort is needed to identify common standards and criteria by which SAE program quality should be measured.

SAE programs lack definition, focus, and direction. Even though new curricula have emerged, SAE programs have changed little. New models of the SAE concept should be designed and implemented in response to changing student populations and curricula.

The use of classroom instruction and instructional materials improves the quality of SAE programs. In larger classes, devotion of at least a portion of class time may be needed to maintain program quality. Classroom SAE instruction should be provided to all students.

No empirical evidence could be found to support the value of SAE programs as an instructional tool. Experimental studies should be conducted to determine the experiential learning value of SAE programs, and to determine their usefulness in generating meaningful, student-oriented problems to be used in problem-solving teaching.

Teacher expectations strongly influence SAE program quality. Teachers who participated in high school SAEs are more likely to support and do a better job of administering SAE programs. Although a majority of teachers indicated such participation, the number of teachers with SAE experience may be decreasing. Teacher education institutions must become more active in providing beginning teachers with the background and knowledge to effectively administer SAE programs and in adapting experiential learning activities from SAEs to the classroom.

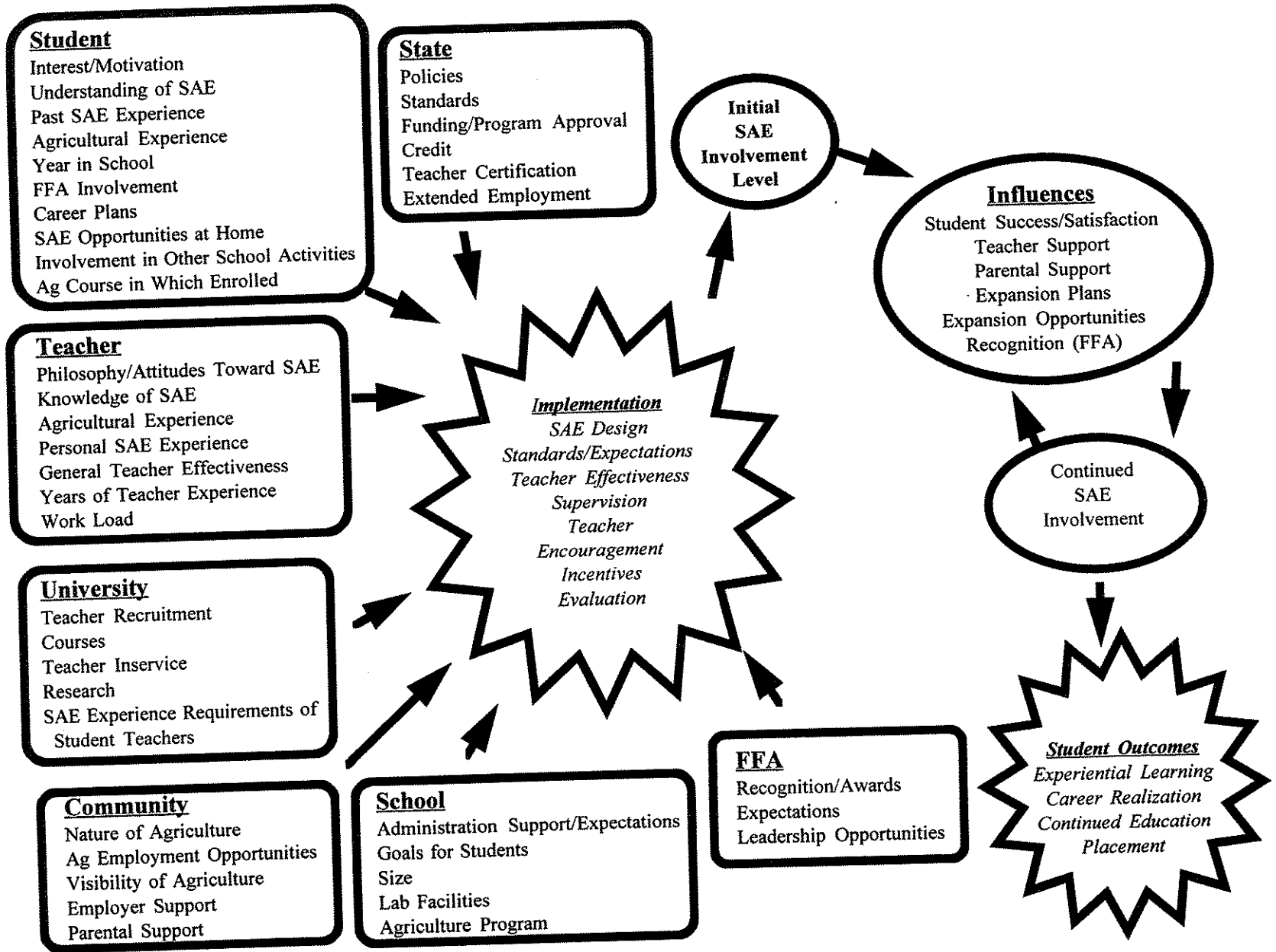
School-site lab facilities are essential if teachers are to provide quality SAE programs for today's students. Both teachers and administrators agree that SAE facilities should be provided by schools. With an increasing number of students living in suburban and urban areas, the responsibility and opportunity to provide quality SAE projects is quickly shifting from program partners to the school. In planning for agricultural education programs, school systems should provide adequate lab facilities (both production and non-production oriented) for students to conduct quality SAE programs.

### **Research Deficiencies**

Analysis of the findings from research pertaining to SAE program quality revealed several areas of deficiency. Figure 1 provides a theoretical model for conducting SAE research. Using this model as a guide, future research should attempt to answer the following questions:

- 1 What is SAE program quality, and what are the key determinants?
- 2 What is the instructional value of SAE programs?
- 3 What are the effects of SAE program quality on student achievement?
- 4 Do students of varying learning styles achieve more/less from SAE programs?
- 5 What is the role of a teacher education program and teacher inservice in preparing beginning teachers to assist with quality SAE programs?
- 6 What methods are most effective in preparing teacher candidates to effectively provide SAE programs to their students?
- 7 How do the type and quality of SAEs influence the value received by the student?
- 8 Which teaching methods are most effective in providing SAE instruction at the secondary level?
- 9 What facilities are necessary for a quality SAE program, and how do they impact today's SAEs?
- 10 How do the SAE needs of rural, suburban, and urban students differ?
- 11 How do community characteristics affect SAE program quality?
- 12 What effects do grading/evaluation methods have on student SAE program quality?
- 13 Do state/national policies have an impact on SAE program quality?

Figure 1. Theoretical Model for Conducting SAE Research



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