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The Relationship Between North Carolina Secondary Agriculture Teachers' Use of Time Management Practices and the Quality of the Supervised Agricultural Experience Program Component

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Experience plays an important role in properly preparing agriculture students, but without supervision, the experience may do more harm than good. If the practice is incorrect, then the performance is likely to be incorrect (Binkley & Tulloch, 1981). While this may be stating the obvious, this is the model that has been successfully used in agricultural education from its beginning. The basic problem solving teaching model calls for application of material once it has been taught. Through this experiential learning process, students reinforce information learned in class and generate ideas to apply to new situations which leads to new learning. "The value of experiential learning in agricultural education has long been recognized as an important part of the educational process" (Cheek, Arrington, 1990, p. 12).

For years students learned sound, practical lessons about agriculture through their home projects. Then, a decline was seen in the use of the project method. Moore (1979) pointed out that "the passage of the Vocational Education Act of 1963 signaled the start of the decline of projects. The 1963 act expanded the scope of agriculture to include training for nonfarm agricultural occupations. . . . In some states, this was interpreted to mean that projects were still required but they could be off-farm projects as well as on-farm projects. In many states, however, the interpretation was 'projects were no longer required'" (p. 219).

The project method has endured as a sound educational system. However, over time subtle changes have occurred which are reflected in the various names that have been used to refer to the project method. These changes generally reflect a broadening of this component of the agricultural education program. However, even with these changes the system has always been based on supervised learning through the student's own efforts and experiences outside the classroom setting. The term Supervised Agricultural Experience (SAE) was used by the researcher in this study in all situations except when using a direct quote containing an older term. Today, SAE may be defined as "all of the agricultural, both occupational and nonoccupational, activities of educational value conducted by students outside of the class setting where students apply the knowledge, skills, and attitudes that have been learned in the instructional program and where supervision is provided by parents, employers, teachers, and others" (Cheek & Arrington, 1990, p.12).

The value of this teaching tool cannot be overstated. Morton (1984), feeling that SAE should be considered equal in importance to classroom and laboratory instruction, wrote that "students with lower-quality SOE programs are likely to be less prepared for their vocation" (p. 16). SAE also prepares students with experiences that reach beyond mastering technical skills. Morris and Williams (1984) pointed out that "feelings about oneself are important in career development" (p. 54). They went on to conclude that

students who received a more programmatic approach to SAE instruction had a higher level of self-esteem than students who received a less programmatic approach to SAE instruction. The importance of SAE has also been recognized by those who are not as directly involved. In the National Academy of Sciences' report Understanding Agriculture: New Directions for Education (1988), while the authors felt SAE may not always be possible, they concluded that "four years of SOE should remain the goal . . ." (p. 41). SAE is a component of the agricultural education program that seems to have stood the test of time. However, in recent years the tide has been obviously shifting, and we are now seeing fewer students involved in any type of SAE (Miller, 1984).

What could cause this decline in SAE when the project method has been given credit for the success of the agricultural education program? Several possible reasons have been offered, one of which is teacher involvement. The authors of the National Academy of Sciences report Understanding Agriculture: New Directions for Education (1988), listed "involved teachers" as one of the characteristics of high-quality SAE programs. Miller (1980), noted that 42 percent of North Carolina teachers did not regularly visit students. Without the involvement of the teacher in the planning and supervising of student programs, the quality of the programs will suffer. An Ohio study examining the quality of students' SAE programs showed that the number of SAE visits made to the students was associated with higher student SAE scores in terms of scope (Anyadoh & Barrick, 1990). While a high student SAE score is not exactly the same as a high-quality SAE program component, it was assumed that they were an indicator of program quality. Similarly, according to Morton and McCracken (1979) SAE quality can be improved by increasing the amount of attention given by the instructor through project visitation.

Increased demands on instructor time may be contributing to the decline in SAE participation and teacher involvement. Cole (1981) reported average work weeks of between 45 and 65 hours for agricultural education instructors. With the push for more comprehensive agriculture programs, increased student-to-teacher ratios and a high demand on accountability, instructor work-loads have become more time consuming. This increased consumption of instructor time may be contributing to the decline in SAE participation. Foster (1986) reported that "no teacher time assigned for SOE supervision" was a factor of above average importance in limiting SAE participation by students.

Research seems to indicate that improving time management practices could help instructors perform their tasks more quickly. For example, a University of Nebraska-Lincoln (1982) study found that agriculture teachers who participated in time management workshops reduced their time devoted to curriculum planning by one-half. Dillon (1979) stated, "Vocational agriculture teachers who are conducting a full-day school program, complemented with FFA and supervised occupational experience phases, must be efficient managers of time in order to serve all students" (p. 141). He also wrote that teachers had indicated a desire for formal instruction in time management. Better time management can reduce the amount of time required for certain tasks; however, whether an instructor chooses to apply new-found time to SAE depends on the priority that the instructor places on SAE.

Experts in time management feel that time management principles can be applied universally, according to a report from The University of Nebraska-Lincoln (1982). The report suggested that time management principles may be applied to any occupation,

including education. The report went on to cite Fred Luthans, a business management expert, as recommending that persons familiar with a given occupational area should be the ones to apply the time management principles to that occupation.

A review of the literature yielded several other factors related to time management and quality of SAE. Dillon (1977) found that instructors spend an average of six percent of their working hours on SAE. Blezek (1985) found classroom instruction to have the highest priority in Nebraska, and Dillon (1977), in the same state, found that the task of classroom teaching required the largest amount of instructor time. It is possible that these two variables could have been correlated. Blezek (1986) reported instructors perceiving SAE priority to be 4.25 on a 5.0 point scale. With more students to supervise, the amount of time available for each student is less. Instructors in Lambert's (1986) study listed "large student-teacher ratios" as a factor of above average importance in preventing departments from having SAE programs. No significant difference was found between experienced and first year instructors in terms of time devoted to SAE (Dillon, 1979), however no indication of SAE program component quality was given. Arrington and McCracken's (1983) study provided evidence of a strong relationship between scope of SAE and length of teaching contract. However, Foster (1986) listed "limited number of extended contract days" as a factor not limiting SAE participation. Other factors listed by Foster as not limiting SAE were transportation not provided by the school district and limited mileage budget for on-site instruction. However, informal interviews with teachers revealed a concern about travel time in large school districts.

Purpose and Objectives

The primary purpose of this study was to determine the relationship existing between the quality of the Supervised Agricultural Experience (SAE) component of the secondary agriculture program in North Carolina and the instructors' levels of time management. In addition to this primary purpose, this study also examined relationships between SAE quality and other variables suggested in the literature that possibly impact on SAE quality. In fulfilling the purpose and objectives of this study, the following research questions were answered:

> What is the current status of the quality of the SAE program component in North Carolina, and what is the current level of time management practices used by secondary agricultural education instructors?
>
> What is the relationship between the agricultural education instructor's level of time management practices and the quality of the SAE component of the program?
>
> What is the relationship between other factors described in the literature and quality of the SAE component of the program?

Procedure

An ex post facto research design was used in this study. As described by Borg and Gall (1989), the dependent variable, SAE program quality, was observed first and the

objective of the research was to explain the variability in the dependent variable in terms of the independent variable level of time management. The independent variable was not manipulated. Additional independent variables were also examined as possible, or rival, explanations for variability in SAE program quality as a means of controlling extraneous variables.

The population for this study consisted of the 327 secondary agriculture education instructors in North Carolina. Names were obtained from an updated copy of the 1991-1992 North Carolina Agricultural Education Directory. Using Krejcie and Morgan's (197) formula for determining sample size, it was determined that 177 subjects would be included in the sample to obtain a 5 percent degree of accuracy at a 95 percent confidence level. The 177 subjects were then selected using a table of random numbers.

The instrument used to collect data in this study contained three major parts. Part One of the instrument consisted of a 15 item Likert-type scale to determine the instructors levels of time management practices. The time management scale was validated by a panel of four experts in the field of time management. SAE quality was assessed in Part Two of the instrument using an adapted version of a scale developed and validated by McCall (1992). This portion of the instrument was used to provide an overall score for the SAE component of the agricultural education program. The third part of the instrument consisted of seven demographic items dealing with selected items found in the literature to be related to SAE quality.

The entire questionnaire was pilot tested for clarity and to determine its reliability using a test-retest procedure. Internal consistency of the time management scale as assessed by calculating a Cronbach's Alpha coefficient of internal consistency (alpha = .75). The SAE quality scale was sent to 22 instructors twice, at two-week intervals using a test-retest procedure, and a coefficient of stability ($r = .87$) was calculated.

Each subject was mailed a packet containing a cover letter, a coded instrument, and a self-addressed return envelope. Appropriate follow-up procedures were administered yielding a total of 127 usable instruments. The total response rate was 71.8 percent. Of those responding, 78.7 percent were early respondents and 21.3 percent were late respondents. Nonresponse error was controlled by comparing (t-test) early and late respondents on the major variables. No statistical differences were found (alpha > .05), so the data were assumed to be representative of the sample, and data from all 127 respondents' ere used in the analyses.

Measures of central tendency, measures of variance, and correlational statistics were used to analyze the data. The practical significance of relationships were determined using Davis' (1971) conventions.

Results

Scores on the time management portion could have ranged from a low of 15 to a high of 60. The mean score for the instructors' levels of time management practices was 41.84, which was considered to be moderately effective. Almost all instructors used some form of time management, often involving only a daily to-do list, but few used the more advanced time management systems.

Scores on the SAE portion of the questionnaire could have ranged from a low of 2.0 to a high of 86.5. The mean score of the quality of the SAE program component was 39.09, which was considered moderately poor. SAE quality scores were cumulative and could not be calculated if the scale contained missing data, resulting in 34 unusable instruments for this part of the analysis. Examination of existing data from incomplete questionnaires revealed no significant differences from those used in the analysis. From the 93 instruments usable for calculating a quality score for SAE, 10.9 percent of the scores indicated a poor quality SAE program component, 53.6 percent were moderately poor, 31.8 percent were moderately good and 4.4 percent were good. These data show that 64.5 percent of the instructors have SAE programs that are below the median point of this scale. The majority of instructors (92.6%) are spending some class time teaching students about SAE, reporting 6.34 instructional days devoted to SAE per course. However, only 40.7 percent allow class time to update record books, while an average of 6.78 opportunities were allowed for this task. Most (81.7%) are spending some of their summer visiting SAE programs, however, only 50.8 percent reported visiting each SAE at least once. Most (60.7%) instructors do not require students to have an SAE and few (60.2%) apply SAE in determining grades. The majority (55.6%) of students do not participate in any type of SAE, and those that do participate can expect, on average, about two visits per year.

A Pearson product-moment correlation coefficient was used to determine the relationship between the SAE quality scores and the instructors' time management scores (see Table 1). A correlation coefficient of .20 was calculated, which was not significant at the .05 level and showed no relationship between the variables.

Table 1. Mean Scores, Standard Deviations and Correlation Coefficients of Research Variables with Quality of the SAE Program Component

	Mean	SD	r
Quality of the SAE program component	39.09[a]	16.13	
Instructor's level of time management	41.84[b]	4.93	.20
Instructor hours devoted to SAE per week	3.21	3.22	.26*
Priority of SAE with the instructor	5.65[c]	2.58	.46*
Number of students instructed	76.40	20.39	.11
Number of instructors in the program	1.55	0.69	-.07
Years of teaching experience	15.54	9.26	-.09
Months of instructor employment	11.54	0.81	.06
Miles from instructor's home to school	10.54	9.56	.14
Miles from school to most distant student's home	20.57	8.13	.13

*$p<.05$

[a]Maximum SAE Quality score possible = 86.5. Minimum SAE quality score possible = 2.0.

[b]Maximum time management score possible = 60. Minimum time management score possible = 15.

[c]SAE priority scale from 1 to 10, with 1 being the lowest and 10 being the highest.

Several other variables were also compared with quality of the SAE program component. It was found that instructors spend an average of 3.21 hours per week on SAE.

The amount of time spent on SAE had a statistically significant but low relationship (r = .26) with quality of the SAE program component. On a scale of 1 to 10, with 1 being the lowest and 10 being the highest, instructors rated SAE priority at 5.65 on the average. Priority placed on SAE had a moderate relationship (4 = 46) with quality of the SAE program component and was significant at the .05 level. The remaining variables: (a) number of students instructed, (b) number of instructors in the program, (c) years of teaching experience, (d) months of instructor employment, (e) miles from the instructor's home to school and (f) miles from the school to the most distant student's home, were not significantly related at the .05 level to the quality of the SAE program component.

Conclusions

Based on the findings of this study, the following conclusions were drawn:

In terms of the quality of the SAE program component, SAE in North Carolina is in moderately poor condition. While most instructors inform students about SAE, the majority do not require SAE of any kind for all students and most students are not participating in SAE.

Instructors in North Carolina are using some time management practices, but there is room for improvement. Almost all instructors are making at least some effort to manage their time, but the practices being used may not be sufficient for the demanding schedules of agricultural education instructors.

The quality of the SAE program component in North Carolina should not be expected to improve by increasing the level of time management practices of the instructor as the sole treatment. There seem to be other factors that may be more related to the quality of the SAE program component.

Those teachers who place a higher priority of SAE tended to have higher quality SAE programs. This seems to indicate that it is the priority placed on SAE, more than the time required, that influences the quality of the SAE program component.

Those teachers who devote more time to SAE tend to have higher quality SAE programs. For the SAE program component to be of quality, involvement is needed from the instructor in the planning, practice and evaluation of the students' SAE programs.

Many of the variables thought to be related to SAE quality (a) number of students instructed, (b) number of instructors in the program, (c) years of teaching experience, (d) months of instructor employment, (e) miles from the instructor's home to school, and (f) miles from the school to the most distant student's home, were not found to be related in North Carolina. While this may seem surprising, it seems to indicate that the factors that contribute to the quality of the SAE component may be more in the realm of the teacher's influence than previously thought.

Recommendations

Instructors may benefit from increased time management practices, but this alone should not be expected to improve the quality of the SAE program component. In-service workshops, pre-service workshops and other courses should be conducted to provide time management instruction for teachers of agriculture. These activities should focus on the specific time management needs of these teachers rather than providing the more broad and general time management suggestions that are so common.

If the agricultural education profession believes that SAE is an important component of the secondary agricultural education program, steps should be taken to increase the priority placed on conducting SAE by the instructor relative to other tasks. This has implications for teacher education in preparing future agricultural education instructors, state supervisors in providing in-service for current instructors and professional and student organizations in providing recognition programs as motivating factors.

Longitudinal research should be conducted in the area of quality of the SAE program component to determine factors that contribute to SAE quality. Consideration should be given to studies that focus on those who teach in specific agricultural content areas (i.e., horticulture, agricultural production, agricultural mechanics). While the results of these studies will be less generalizable, they may provide more useful information in each case.

In the area of time management, further study is recommended in similar populations to develop an instrument that assigns weights to various time management practices based upon their relative value in increasing productivity.

This research study should be replicated in other states with a variety of groups of agricultural instructors to increase the external validity of this study.

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