

Effective SAE Implementation: Evaluating Agricultural Educator's Competence in Integrating SAE and AET in the Classroom

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Introduction

According to Croom (2008), Supervised Agricultural Experience (SAE) is one of the three components of School-Based Agricultural Education (SBAE) and has been an integral part of SBAE since its inception. While SAE has been an essential element of SBAE for decades, agricultural educators report being unconfident in their ability to implement SAE in their programs (Sorensen et al., 2014). Additionally, improving the implementation of SAE in SBAE programs directly relates to the fifth priority research area in the national research agenda which is “Efficient and Effective Agricultural Education Programs” (Roberts et al., 2016). Furthermore, record keeping in the Agricultural Experience Tracker (AET), assisting students who are applying for proficiency awards, and aiding students applying for State and American FFA degrees have been listed as some of the duties agricultural educators feel the least confident in implementing (Sorensen et al., 2014). According to Sorensen et al. (2014), additional professional development should be provided to educators to support them in these areas.

Theoretical Framework, Purpose, and Objectives

The theoretical underlayment for this study is Bandura’s (1994) Self-Efficacy theory. This theory describes “...people’s beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives” (Bandura, 1994, p. 74). The purpose of this study was to evaluate the effects of a workshop on the ability of agricultural educators to assist students with record-keeping in the AET and support students applying for proficiency awards. This workshop has the potential to improve participating agricultural educator’s “... capabilities to produce designated levels of performance...” in these areas (Bandura, 1994, p. 74). The following research objective was assessed:

- 1.) Assess the effects of a two-day workshop on the perceived importance of agricultural educators and their competence to assist students with record keeping in the AET and support students applying for proficiency awards.

Methods

In this study, the researchers utilized a descriptive correlational design. The instrument assessed the perceptions of agricultural educators in [State A] on the importance of various aspects of SAE implementation and their competence to integrate these factors into their classrooms. The instrument utilized a Likert type scale ranging from 1 = None, 2 = Below Average, 3 = Average, 4 = Above Average, and 5 = Exceptional for the importance and competence scale. The instrument was distributed as a paper survey at the 2022 New Mexico State University AET and Proficiency Award Workshop. The instrument utilized a Borich scale to measure perceived importance and competence of SAE implementation (Borich, 1980). The instrument was distributed on a pre-test and post-test basis before and after the workshop. The instrument reliability was assessed post hoc using Cronbach’s alpha. The reliability coefficients for the importance and competence scales in the pre-test and post-test ranged from .932 - .951. According to Gliem and Gliem (2003), a reliability coefficient of .7 or higher is considered acceptable. The Cronbach’s Alpha test results suggest that there are no reliability concerns with the instrument. The researchers implemented a convenience sample which consisted of the active

agricultural educators and pre-service educators present at the workshop. The total sample for this study consisted of ($n = 22$) workshop participants with 20 of them being active agricultural educators in New Mexico and 2 being pre-service educators.

Results

The results from the data analysis are listed in Table 1. The items that saw the largest decrease in Mean Weighted Discrepancy Scores (MWDS) from the workshop include “Assisting students in making their applications measurable” and “Assisting students in entering barbers, etc. into AET” with a decrease of 4.3 and 3.9 respectively. Furthermore, the items with the highest post-test competence scores include “visiting student’s SAE’s” and “Assisting students in evaluating pictures for a proficiency award”.

Table 1

Pre-Test and Post-Test Descriptive Statistics for Proficiency Award Workshop ($n = 23$)
Note. IR = Importance Rating; CR = Competency Rating; S = Mean Weighted Discrepancy Scores

	Pre-Test			Post-Test		
	IR	CR	S	IR	CR	S
Visiting student’s SAE’s.	4.2	3.7	2.4	4.5	4.1	1.9
Assisting students with SAE record keeping.	4.5	3.2	6.2	4.5	3.6	4.4
Motivating students to complete proficiency award applications.	3.8	2.5	5.8	4.3	3.7	3.1
Assisting students with the writing of a proficiency award.	4.0	2.7	5.0	4.3	3.8	2.7
Assisting students with the financial portions of a prof. award.	4.1	2.8	5.9	4.3	3.6	3.2
Assisting students in evaluating pictures for a proficiency award.	3.7	3.2	2.5	4.4	4.0	2.1
Assisting students in making their applications measurable.	4.4	2.6	8.5	4.5	3.6	4.2
Assisting students in entering income/expenses into AET.	4.1	2.9	5.4	4.3	3.7	2.7
Assisting students in entering non-current inventory into AET.	4.0	2.7	5.8	4.3	3.5	3.3
Assisting students in entering current inventory into AET.	4.1	2.8	5.6	4.3	3.6	3.0
Assisting students in entering barbers, etc. into AET.	4.0	2.4	6.9	4.1	3.4	3.0

Assisting students with proficiency awards and AET record keeping has been cited as some of the areas of SBAE that agricultural educators feel the least confident in implementing (Sorensen et al., 2014). The results from this study suggest that the workshop was successful in increasing agricultural educator’s “...capabilities to produce designated levels of performance” in assisting students with proficiency awards and AET record-keeping since the MWDS decreased between 0.5 - 4.3 from the pre-test to the post-test (Bandura, 1994, p. 74). The areas assessed with the largest gain in knowledge include “Assisting students in making their applications measurable” and “Assisting students in entering barbers, etc. into AET”. The researchers recommend continuing to provide professional development in this area to improve the competence of agricultural educators in this area.

References

- Bandura, A. (1994). Self-efficacy. In V. S. Ramachaudran (Ed.), *Encyclopedia of human behavior* (Vol. 4, pp. 71-81). New York: Academic Press.
- Borich, G. D. (1980). A needs assessment model for conducting follow-up studies. *Journal of Teacher Education*, 31(3), 39–42. <https://doi.org/10.1177/002248718003100310>
- Croom, D. B. (2008). Development of the integrated three–component model of agricultural education. *Journal of Agricultural Education*, 49(1), 110–120. doi: [10.5032/jae.2008.01110](https://doi.org/10.5032/jae.2008.01110)
- Gliem, J. A & Gliem, R. R. (2003). *Calculating, interpreting, and reporting Cronbach’s alpha reliability coefficient for Likert-type scales*. Midwest Research to Practice Conference in Adult, Continuing, and Community Education, <https://scholarworks.iupui.edu/bitstream/handle/1805/344/Gliem%20%26%20Gliem.pdf?sequence=1&isAllowed=y>
- Roberts, T. G., Harder, A., & Brashears, M. T. (Eds). (2016). *American Association for Agricultural Education national research agenda: 2016-2020*. Gainesville, FL: Department of Agricultural Education and Communication.
- Sorensen, T. J., Lambert, M. D. & McKim, A. J. (2014). Examining Oregon agriculture teachers’ professional development needs by career phase. *Journal of Agricultural Education*, 55(5), 140-154. doi: [10.5032/jae.2014.05140](https://doi.org/10.5032/jae.2014.05140)