# Self-Efficacy of Oklahoma SBAE Teachers in Introductory Animal Science Standards

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## Introduction

Oklahoma has a rich history in livestock production, and animal science courses have become a staple in the school-based agricultural education classroom (Hedglen, 2003). Desilva (1994) attributed animal agriculture as a major source of protein in both Oklahoma and the world as a whole. Oklahoma Supervised Agricultural Experiences (SAEs) are dominated by livestock projects (Oklahoma Youth Exposition, 2019). Animal science in Oklahoma typically focuses on cattle, sheep, swine, and goats (CIMC, 2016). The state curriculum for ninth grade Introduction to Agriscience contains 14 units, eight of which are devoted to animal science (CIMC, 2016). Species featured in learning objectives include beef cattle, swine, dairy cattle, sheep, horses, goats, poultry, and small animals (CIMC, 2016). Historically, livestock evaluation has been the most popular Career Development Event across the state (JudgingCard, 2020). As such, animal science holds a prominent place across the three-circles of school-based agricultural education (SBAE) in Oklahoma (Oklahoma FFA, 2019). Snider (2019) found Oklahoma SBAE student teachers were most competent in teaching animal science than any other pathway.

The researchers were interested in delving deeper into the animal science species and topics taught in Oklahoma SBAE classrooms. Three objectives guided the study: 1. Describe Oklahoma SBAE teachers who teach animal science standards in their Introduction to Agriscience course, 2. Describe SBAE teachers' self-efficacy in teaching across all animal science standards, and 3. Describe any relationships between the variable of the study.

## Theoretical Framework

The study was underpinned in Bandura's (1977) theory of self-efficacy, or a person's belief concerning their ability to be successful in a given context. Ajzen (1991) stated self-efficacy informs an individual's intention which largely dictates behavior in a given environment. Conversely, environmental factors impact an individual's sense of self-efficacy in a specific context (Bandura, 1978). The researchers propose the environment of Oklahoma SBAE with its emphasis in animal science is related to teachers' self-efficacy in those areas.

## Methodology

To achieve the aims of this study, a census was attempted with Oklahoma SBAE teachers in the 2019-2020 school year ($N = 450$). Teachers were contacted through email and directed to an instrument hosted on Qualtrics. Three attempts to collect responses followed Dillman's (2014) tailored design method. The instrument was designed to collect self-reported ratings of competence in each of the standards associated with animal science included in CIMC's (2016) Introduction to Agriscience curriculum. Participants ranked their perceived competence to teach each standard on a five-point Likert-type scale, ranging from low competence (1) to high competence (5). Items filtered responses to those who taught the various species within the course. The instrument was checked for face and content validity by agricultural education faculty and returned a Cronbach alpha rating of 0.98.

## Findings

Objective one sought to describe the SBAE teachers who responded to the instrument. A response rate of 38% was achieved ($n$ =170). Of these, 159 Oklahoma SBAE teachers taught

Introduction to Agriscience. Respondents were 51.6% male, 61% traditionally certified, 55.3% taught in a rural setting, and 45.3% were the sole SBAE teacher in their school district. Participants averaged 14 years of experience with 85 students enrolled in their SBAE program. Beef cattle was the most popular species taught, with 98.7% of participants reporting the inclusion of this unit. Swine, sheep, goats, and dairy cattle also were taught by at least 80% of respondents. More than 50% of SBAE teachers taught the poultry and horse units. The small animal unit was the least popular with 42.1% of teachers dedicating class time to this material. Objective two focused on self-efficacy of Oklahoma SBAE teachers in relation to their competence in teaching animal science standards. Participants were overwhelmingly confident in their ability to teach animal science standards. Ranges of competency ratings were within one point with all participants ranking themselves as at least moderately competent. No self-identified insecurities were identified. Objective three was addressed by calculating correlations to assess the relationships among study variables. The most statistically significant finding of this objective highlighted the discrepancy between sexes in relation to animal evaluation standards. Females are statistically significantly less confident in their ability to teach evaluation, especially in species included in the livestock evaluation Career Development Event (see Table 1).

Table 1

*Correlations Between Gender and Self-efficacy in Animal Evaluation Standards*

| | Beef Cattle | Goats | Horses | Sheep | Swine |
|---|---|---|---|---|---|
| Pearson's $r_{pb}$ | -0.29 | -0.22 | -0.27 | -0.19 | -0.24 |

Note: All point-biserial correlations statically significant at $p < .05$.

## Conclusions

Animal science is a popular topic in Oklahoma SBAE courses. However, this study was not able to determine why poultry and horses were a less common topic than other livestock species. Oklahoma SBAE teachers are self-efficacious in teaching animal science standards in the Introduction to Agriscience course. The environment of Oklahoma SBAE with its heavy emphasis on animal agriculture may explain this mindset (Bandura, 1977; 1993). Although in the main Oklahoma SBAE teachers are confident in their ability to teach animal science, females are less confident than males in evaluation standards.

## Implications and Recommendations

Self-efficacious teachers are more likely to be effective educators (Aziz & Quraishi, 2017; Tschannen-Moran & Hoy, 2001). Are Oklahoma SBAE teachers effective animal science instructors? Is the animal science emphasis an attractor for SBAE teachers who are already self-efficacious in these topics? What are the implications for other teachers less interested in animal science? Specialized professional development in animal evaluation should be delivered to target female Oklahoma SBAE teachers. Examples of successful female livestock and horse judging coaches should be highlighted by state SBAE staff and teacher educators. Additional research could explore why some species, such as poultry and horses, are less popular than others in the Introduction to Agriscience course.

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