

**A Shot in the Arm for Teacher Competence Development:
Implementing a Veterinary Science-focused Pre-service Teacher Mentorship Experience**

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Introduction and Need for the Idea

Competent agriculture teachers should, as a community of learned professionals, be well-versed in agricultural subject matter (Wells & Hainline, 2021; Wells et al., 2023). Agricultural subject matter can encompass a range of areas, such as animal science and veterinary science (Phipps et al., 2008). Regarding the two aforementioned subject matter areas, scholars (i.e., Ikner et al., 2023) have noted that these topics generate considerable student interest, thereby likely popularizing courses in animal and veterinary science within Agricultural Education programs. Consequently, agriculture teachers should be appropriately prepared to teach such technical agriculture subject matter areas (Wells et al., 2023).

Teacher competence development is a lengthy, substantial process that involves a variety of inputs, such as early field experiences, formal coursework, and practical work experience (Whittington, 2005). Competent teachers are better able to facilitate student learning and promote academic achievement (Lindström et al., 2025). Further, teachers who perceive themselves as more competent in their technical agriculture subject matter (such as veterinary science) are more likely to remain in the profession over the long term, thus promoting the retention of effective, qualified agriculture teachers (Solomonson et al., 2021).

Not surprisingly, challenges in the delivery of traditional undergraduate-level agricultural teacher education programming remain (Granberry et al., 2023). One such challenge is the availability of credit hours allocated to addressing pre-service agriculture teachers' acquisition of technical agriculture subject-matter knowledge (Granberry et al., 2023). As numerous agricultural teacher education degree programs continue to be reduced to 120 credit hours, it is imperative that agricultural teacher educators consider approaches to streamline and maximize program practices (Granberry et al., 2023). One such solution may be to facilitate a formalized, structured pre-service teacher mentorship program.

How it Works

We recently launched the Veterinary and Animal Science Training for Teachers (VASTT) project, which was funded by the United States Department of Agriculture's (USDA) National Institute for Food and Agriculture (NIFA) in the amount of \$494,000.00. Specifically, we received funding to administer the VASTT project via the Professional Development for Agricultural Literacy (PDAL) grant program (Award No. 2025-67037-44950). The primary purpose of the VASTT project was to provide agriculture teachers with comprehensive, hands-on training in veterinary science practices, provide curriculum resources and teaching aids for use in their respective Agricultural Education programs, and facilitate interdisciplinary interactions and collaborative efforts between agriculture teachers and university faculty members. A secondary purpose of the VASTT project, however, was to facilitate a semester-long, intensive mentorship experience between pre-service agriculture teachers and veterinary science faculty members.

To initiate the mentorship experience component of the VASTT project, we met to collaboratively develop an electronic, Google Forms-based application for prospective mentees

(i.e., pre-service agriculture teachers) to complete. Within the application, we designated the following requirements: (1) enrollment in the undergraduate-level Agricultural Education degree program, (2) a minimum grade point average of 2.75, (3) successful admission into the Murray State University Teacher Education Program, (4) prior completion of the introductory-level animal science course with at least a grade of “B”, and (5) minimum classification as a sophomore. Beyond indicating that they met each of these five requirements, we asked applicants to respond to two open-response questions regarding the mentorship experience. After screening the applicants, we selected two undergraduate Agricultural Education to serve as mentees for the semester.

At the start of the semester, we met with the two mentees to discuss expectations and responsibilities throughout the following 16-week semester. Said expectations and responsibilities included: (1) assisting veterinary science faculty members in facilitating classroom- and laboratory-based activities within an introductory-level veterinary science course that served students enrolled in the Pre-veterinary Medicine and Veterinary Technology academic majors, (2) helping administer a university-hosted FFA Veterinary Science Career Development Event (CDE) during the second half of the semester, (3) keeping a weekly reflective journal detailing the mentees’ experiences, and (4) participating in an end-of-semester audio- and video-recorded Zoom interview with the VASTT project director.

Results to Date and Implications

To date, the VASTT project has served two undergraduate Agricultural Education students as mentees. During the end-of-semester interview with each mentee, the project director asked detailed questions about their experiences. Both of their responses indicated that they believed the mentorship experience was valuable for their growth as pre-service agriculture teachers, noting that their semester-long experiences helped them overcome deficits in their degree program coursework (i.e., a lack of veterinary science-specific coursework). Based on our experiences working with these two mentees, we believe that our approach had positive consequences for helping develop pre-service agriculture teachers’ competence in veterinary science subject matter.

Future Plans and Advice to Others

We intend to serve 16 mentees throughout the project. As this mentorship experience resulted from interdisciplinary, collaborative efforts, we believe that agricultural teacher educators should consider developing similar grant- or institution-funded initiatives that include a pre-service teacher mentorship component to address coursework deficits.

Costs and Resources Needed

The largest input was federal funding, which can be replaced with institutional student worker budget funds if available. We paid each mentee \$10.00 per hour worked, with the expectation that they would work 15 hours per week for 16 weeks, yielding a total investment of \$2,400.00 per mentee per semester. The total budget for all 16 mentees is \$38,400.00. Beyond funding, the other significant investments for a successful mentorship experience are time and effort to help appropriately serve each mentee and faculty member.

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