

Pairing Content and Context: An Effort to Provide Contextual Experiences to Preservice Teachers

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Introduction

School-based agricultural education (SBAE) is unique regarding the quantity of content teachers are expected to master (Rice & Kitchel, 2016a). SBAE teachers are expected to have a broad understanding of the agricultural discipline as well as master several specialized content areas (Harlin et al., 2007). Teachers identified areas such as agricultural mechanics, animal science, and horticulture as content areas that required proficiency to be successful in SBAE (Harlin et al., 2007). However, early-career agricultural teachers often lack the content knowledge necessary to teach those courses (Harlin et al., 2007; Rice & Kitchel, 2015; Rice & Kitchel, 2016b). Early-career teachers reported feeling deficient in general agriculture and content-specific courses, i.e., animal science (Rice & Kitchel, 2016a). To compensate for these deficiencies, novice teachers relied heavily on coping strategies. Specifically, they avoided content they felt uncomfortable teaching, enlisted help from students with experience in the content area, and created class research projects (Rice & Kitchel, 2016a). However, the teachers felt a heightened sense of anxiety regarding addressing questions about unfamiliar content and how that impacted credibility with students (Rice & Kitchel, 2016a). Many teachers felt their teacher preparation program did not equip them with the content knowledge they needed to be successful upon graduation (Rice & Kitchel, 2015; Rice & Kitchel, 2016a). Preservice teachers expressed a general dissatisfaction regarding the amount and quality of content courses required during their teacher preparation program (Rice & Kitchel, 2015). While content knowledge is a concern for most preservice and early-career teachers, they also lack the contextual knowledge needed to apply the content knowledge they possess to create meaningful classroom lessons (Rice & Kitchel, 2015, 2016a). Scholars have recommended teacher preparation programs better prepare preservice teachers by incorporating agricultural content knowledge into the required pedagogical content courses (Rice & Kitchel, 2015). Thus, to provide content knowledge and pedagogical knowledge to preservice agricultural education students, Oklahoma State University developed a series of agricultural experiences as a required component of a teacher preparation course.

How it Works

Agricultural education, teacher preparation at Oklahoma State University includes a course focused on advising agricultural student organizations. The primary focus of the course is to prepare students to advise an FFA chapter and supervise supervised agricultural experiences (SAE). In an effort to reinforce agricultural content knowledge, students participate in four agricultural experiences that occur during scheduled lab time. These experiences are designed to simulate a high school student's SAE, as well as provide content and contextual knowledge to the preservice teachers.

The agricultural experiences feature the Oklahoma State University meat processing lab and the vegetable farm. Students were divided into equal groups and spent two labs in the meat processing facility and two labs at the vegetable farm. During the vegetable farm experience, students received hands-on training in planting various vegetable crops, operating a transplanter, harvesting vegetables, and building fences. Likewise, during the meat processing experience, the

students received hands-on training in making and packaging breakfast sausage, breaking down a carcass, calculating meat processing costs, and determining retail costs for meat products. The students were required to maintain a journal using the Agricultural Experience Tracker (AET) to reflect on their experiences and the skills and knowledge they acquired.

Finally, students were guided through the process of utilizing the content knowledge they gained from their experience to generate a ninth-grade agriscience lesson. The students utilized lab time after the experiences to create a lesson using the content knowledge they gained during the experiences. The students were expected to develop a slide deck of the lesson they planned to teach. This aspect of the experience sought to prepare preservice teachers to apply their content knowledge through the lens of an agricultural experience.

Results

Thirty-seven preservice teachers participated in these agricultural experiences during the spring semester of 2025. Students gained real-world experience in agricultural content areas while completing a non-paid placement SAE. Each student created a lesson featuring the content knowledge gained, which could potentially be implemented upon entering the profession. This process enabled students to make a connection between content knowledge and lesson creation. Many students expressed they believed the content knowledge gained during their experiences would be beneficial as they enter a future classroom. One student said, "It gave me more information and hands-on, real-world experience, and I think that will help me better connect to the lessons and to be able to teach students the topics better." Another student remarked, "I think this was a great way to look at different opportunities for my future students to learn about all the different aspects of agriculture." Overall, the students appreciated the opportunity to receive hands-on training outside of the classroom setting. The preservice teachers gained valuable skills which they believed bridged the gap between content knowledge and lesson generation.

Future Plans/Advice to Others

The agricultural education instructional team at Oklahoma State University plans to continue to develop opportunities to incorporate content knowledge acquisition into required pedagogical content courses. In the future, the instructor plans to modify these experiences to include more of the university farms to provide a broader range of agricultural content knowledge. Additionally, the instructor intends to collaborate with the farm supervisors to develop engaging lessons that build upon the students' experiences.

Teacher preparation faculty should consider incorporating content specific experiences into pedagogical courses to provide both content and contextual knowledge, thereby enhancing the overall learning experience. These experiences should be developed in concert with required subject area competencies. Likewise, these experiences and subsequent assignments should reflect the skills and knowledge necessary to be a successful teacher.

Costs/Resources Needed

The resources needed for these experiences include graduate students capable of providing supervision of the field experiences while providing quality feedback to the preservice teachers on how to implement the content in the classroom effectively. In addition, either university farm resources or community partnerships are necessary to provide real-world, hands-on experiences. Lastly, a subscription to (AET) is not required but is strongly encouraged.

References

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