Enhancing Collaborative Learning in Agricultural Communication Internship Courses through the TPACK Model

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Introduction

Many agricultural communication programs in the United States require an internship course as part of their graduation requirements. Typically, these courses involve a combination of classroom instruction and hands-on work experience, with classroom activities including reflective journals, site-supervisor reports, and student reports on their internship projects. Collaborative learning among peers is particularly beneficial for internship courses, as it provides a diverse range of concrete internship experiences in the classroom. This abstract proposes the use of the Technological Pedagogical Content Knowledge (TPACK) model, developed by Mishra and Koehler (2006), to enhance collaborative learning in agricultural communication internship courses.

How it works

The TPACK model is a framework for understanding the complex interplay between technology, pedagogy, and content knowledge in the context of teaching and learning (Mishra & Koehler, 2006). The model was developed to help educators integrate technology effectively into their teaching practice. This model has been widely adopted as a theoretical base in educational research to guide the design of technology-enhanced learning environments. The TPACK model consists of three knowledge domains: technological knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK). The model proposes that effective technology integration requires a deep understanding of all three domains, as well as the interplay between them (Figure 1). Mishra and Koehler (2006) argue that "technology cannot be understood without considering the context in which it is used, and the goals and content that it is meant to support" (p.1029). In other words, technology should not be viewed as a separate entity from pedagogy and content knowledge, but rather as an integral component of effective teaching and learning.

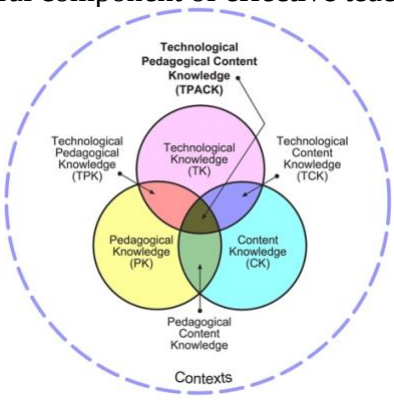

Figure 1. TPACK Framework

For the Agricultural Communication Internship course at Iowa State University, the instructor aimed to provide students with a deeper understanding of their internship experience by incorporating two critical content knowledge (CK) areas: communication theory and industry perspectives. To achieve this, the instructor collaborated with a course designer to integrate various pedagogical knowledge (PK) approaches, including lecturing, peer-based learning, reflection, and guest speakers. Additionally, they worked alongside a technology specialist to utilize technology knowledge (TK), including professional video recording and virtual collaboration tools such as Canvas Studio functions and discussion boards.

To address the communication theory content, the instructor recorded a series of mini-lectures on various communication theories in a professional recording studio. For the industry perspective content, several industry professionals were invited to the university campus studio to record their perspectives on the career competencies desired from agricultural communication graduates (Figure 2). These video materials were professionally edited and integrated into the Canvas course, where students were required to reflect on their internship experience after reviewing both types of video materials. They were also encouraged to engage in peer-to-peer interaction to foster a collaborative learning experience.

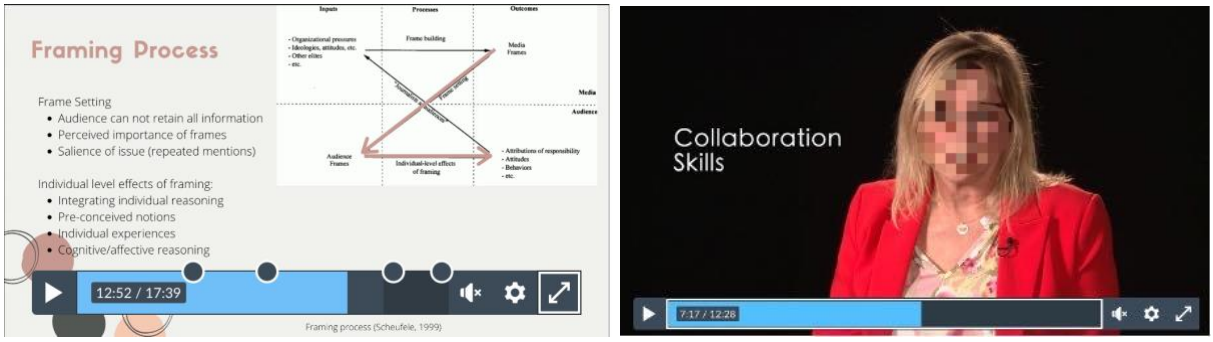

Figure 2. Video Materials: Theory lecture (left), industry professional video (Right)

Results

The incorporation of CK, PK, and TK resulted in a collaborative and engaging learning experience. Since Fall 2021, the TPACK-inspired learning materials have been integrated into the agricultural communication internship course, with 59 students enrolled so far. Notably, student interactivity has increased. and feedback on the course indicates appreciation for the resulting collaborative learning. For instance, one student remarked, "I was able to read about my peers' experiences and perspectives. I enjoyed having that type of interaction." Another student stated, "The discussion posts based on our internships helped me the most in this course. I liked being able to read about other experiences in their internships."

Advice to Others

Forming a team with a solid grasp of content, pedagogy, and technology is crucial for successful application of TPACK. If resources permit, collaborating with a course designer and technology specialist can be highly advantageous. The TPACK model can be applied not only to course content delivery but also to assessments and student collaboration (Harvey & Caro, 2017; Njiku, Mutarutinya, & Maniraho, 2021; Schmidt, 2009). It is advisable to gather feedback from students to ensure that the content is relevant, the technology is accessible, and the pedagogy is effective.

Cost/Resources Needed

The cost and required resources will depend on the nature of the content, technology, and pedagogy utilized. In the example presented in the abstract, an internal grant of $8,000 was obtained to cover the costs of the distant learning service provided by the Brenton Center of Iowa State University, including a technology expert, a course design specialist, professional video recording and editing services, and travel compensation.

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