Realities, Constraints, and Choices: Scenario-Based Learning for Future Agricultural Educators

Dr. Kendrick Lee Spencer
601 S. National Ave
Springfield, MO 65897
417 – 836 – 5096
kendrickspencer@missouristate.edu

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Problem-based learning (PBL) is a well-established strategy for supporting student decision-making, construction of knowledge, and collaboration skills (Hmelo-Silver, 2004). PBL is focused learning organized around the investigation, explanation and resolution of a pertinent problem (Barrows, 2000). In an undergraduate Course and Program Planning class, I expanded these approaches by immersing agricultural education majors in fully developed "case study schools" designed to mirror the complexity of authentic school-based agricultural education (SBAE) programs. Although case studies and PBL are not new instructional innovations, the purposeful incorporation of simulated tensions, community expectations, resource limitations, and administrative constraints created an instructional environment that more accurately reflects the realities new teachers face. This design highlighted teaching as a continual process of situated decision-making. These problems ground instruction in real-world situations (Hmelo-Silver, 2004).

How it works

The Course and Program Building class prepares future agricultural educators to design and manage comprehensive SBAE programs. Students create professional artifacts related to program management, including a Program of Activities (POA), a year-long teacher calendar, and a career development event training guide, as well as curricular artifacts such as course scope and sequence documents and unit plans.

To ground these assignments in realistic decision-making, I developed four context-rich school scenarios that represented both traditional SBAE elements such as course offerings, SAEs, and FFA participation, and non-traditional features such as limited facilities, science-integrated SBAE coursework, and community tensions regarding program identity. Each scenario included demographic data, available resources, program values, community expectations, administrator perspectives, and letters from administrators and alumni and supporter groups outlining constraints and required events.

Students were randomly assigned to scenario teams of 3 to 4 "teachers." They selected teaching responsibilities within their scenario and completed five major artifacts, each accompanied by memos from administrators or stakeholder groups. These memos introduced parameters and tensions students were required to address, ensuring all decisions were grounded in the scenario context rather than personal preference.

Results to date

Thirteen undergraduate students participated (nine females, four males; all White; all former SBAE students in the state). Students' reactions could be summarized into three main observations.

First, students exhibited shock and resistance. Students initially expressed surprise, and in some cases frustration, when they realized the scenarios imposed constraints on their decision-making. Many resisted the requirement to justify decisions using scenario-specific information rather than personal preferences. As one student noted, “I would have never even applied for this position. What would we even do here?” This reaction was an intentional instructional design feature, reflecting the social and regional identities of the students and their assumptions about what SBAE “should” look like.

Secondly, students were combatting their implicit bias. Students frequently attempted to modify their assigned scenarios to better match their preconceived notions of effective SBAE programs. Comments such as, “If we do not have a shop, where does our Perkins funding go?” or “How can we have a quality FFA chapter if students do not go to National Convention?” reveal how the scenarios prompted students to confront their assumptions. Assignments reinforced that each program was a successful, fully functioning chapter and could not be fundamentally altered, requiring students to reconcile personal biases with community-driven expectations.

Lastly, over time, students increasingly accepted their scenarios as legitimate teaching contexts. The structured constraints helped them think more deeply about community engagement, administrator relationships, and adapting instruction to local needs. One student shared, “I never thought of how I would deal with an adult who was angry with my program. This helped me think through how I would handle that situation.” Others recognized the value of connecting FFA opportunities more meaningfully to instruction rather than relying on traditional event participation.

Future Plans and Advice

Scenario-based instruction proved effective for grounding course content and expanding students’ understanding of the diverse realities of SBAE programs. The constraints required students to think creatively, defend instructional choices, and move beyond familiar courses, SAEs, and FFA events.

Future iterations will align scenarios with actual programs in the state and incorporate opportunities for students to visit or interview teachers whose contexts resemble the scenario schools. Additional materials may include deeper community profiles, funding data, or policy constraints to enhance realism.

Cost/ Resources needed

Scenario construction required analysis of state-level FFA program data, including program size, community characteristics, and local agricultural industry connections. These data informed structured prompts used to generate narrative scenarios and stakeholder memos in ChatGPT 5.0. While the AI-generated outputs required substantial editing to ensure realism, using ChatGPT significantly reduced development time, shifting from several days to roughly two hours of preparation and refinement per assignment.

References

Barrows, H. S., & Tamblyn, R. M. (1980). *Problem-based learning: an approach to medical education: Vol. v.Volume 1* (1st ed.). Springer Publishing Company.

Hmelo-Silver, C. E. (2004). Problem-Based learning: What and how do students learn? *Educational Psychology Review*, *16*(3), 235–266. http://www.jstor.org/stable/23363859