

Cultivating Collaboration: Developing AFNR Team-based Challenges for Authentic Learning in Agricultural Education

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Introduction & Need for the Idea

The Illinois Postsecondary and Workforce Readiness (PWR) Act has encouraged secondary schools to implement instructional approaches that emphasize authentic learning experiences and the development of essential employability skills. One initiative supported by the Illinois State Board of Education (ISBE) is the implementation of Team-Based Challenges (TBCs), which engage students in collaborative, problem-driven learning experiences aligned with real-world industry needs. Under the state's College and Career Pathway Endorsements framework, TBCs are intended to provide students with opportunities to demonstrate critical thinking, communication, collaboration, and career-readiness skills through authentic assessment practices (ISBE, n.d.). Authentic assessments have gained increasing attention in career and technical education (CTE) because they allow students to apply academic and technical knowledge in meaningful contexts while fostering deeper engagement and skill development (McCarthy, 2023; Ross, 2024). Recent literature further suggests that authentic, problem-based learning environments improve student motivation, self-efficacy, and workforce preparedness by emphasizing open-ended problem solving and student voice in the learning process (Lim, 2023; Sheppard & Conner, 2024).

In agricultural education, TBCs offer a promising way to strengthen experiential learning and career preparation by integrating authentic agricultural industry problems into classroom instruction. Agricultural education programs are uniquely positioned to implement TBCs due to their longstanding emphasis on applied learning, supervised experiences, and community partnerships. However, many agricultural educators lack access to structured examples, resources, and professional development related to designing authentic, problem-based TBCs. As Illinois schools continue implementing the PWR Act, there is a growing need to develop replicable TBCs specifically designed for agricultural education settings that enhance both technical agriculture content knowledge and essential employability skills.

How it Works

To initiate the TBC project, a small team of Illinois agricultural educators was assembled to provide guidance regarding appropriate challenge topics for specific Agriculture, Food, and Natural Resources (AFNR) pathways and courses. Resources provided by ISBE were used to ensure each challenge included the required components: a challenge title, a challenge statement, the competencies addressed, potential solution products, and relevant industry partners. Following the initial planning phase, one challenge was created for each AFNR pathway and reviewed for alignment and quality.

After these initial challenges were developed, agricultural industry partners were contacted to provide feedback and assist in identifying authentic issues currently facing the agriculture industry. Through email correspondence, phone calls, and virtual meetings, six organizations contributed to the development and review process, including the Illinois Pork Producers, Illinois Soybean Association, Illinois Department of Natural Resources, Delight Flower Farm, Illinois Section of the American Water Works Association, and Nutrients for Life. Their involvement ensured the resulting challenges reflected realistic agricultural scenarios while strengthening connections between classroom instruction and industry expectations. The

developed challenges can either be used as stand-alone projects in classes or as part of ISBE's College and Career Pathway Endorsement program. To be most effective, challenges must be open-ended, realistic, and involve students receiving feedback from industry professionals.

Results to Date

Through the collaboration of agricultural educators and industry partners, the AFNR Team-based Challenge (TBC) Library and Guide was completed in May 2026. The final resource includes 32 unique TBCs, representing all eight AFNR pathways, as well as five challenges specifically designed for middle school agricultural education programs. Each challenge is industry-approved, classroom-ready, and aligned with ISBE guidance for effective TBCs. Included within each challenge are a challenge overview, a challenge statement, possible solution products, technical and employability skills addressed, and suggested industry partners. Additionally, the accompanying guide provides recommendations regarding appropriate courses and instructional units for implementation, along with considerations for successful classroom use.

To support implementation, the library and guide were introduced to agricultural educators through both virtual and in-person professional development workshops, including sessions at the Illinois Association of Vocational Agriculture Teachers Conference. The resource was also made publicly available on the Illinois Agricultural Education website and presented as a poster at the Illinois Career Connections Conference, hosted at Illinois State University. These dissemination efforts have increased awareness of TBCs and encouraged greater adoption of authentic, industry-centered instructional practices within agricultural education programs across Illinois.

Future Plans & Advice to Others

Future plans include continued promotion of TBCs and expansion of industry partnerships to maintain the challenges' relevance and authenticity. Illinois agricultural education staff also plan to collaborate annually with agricultural organizations to host statewide challenge competitions in which students complete and present solutions to authentic agricultural industry problems. These events will allow industry professionals to provide students with direct feedback as they evaluate proposed solutions.

For others interested in implementing similar initiatives, the most important recommendation is to establish strong partnerships with agricultural businesses, organizations, and industry representatives. These collaborations ensure challenges accurately reflect current industry issues while enhancing student understanding of agricultural career pathways. Additionally, providing professional development opportunities for teachers regarding the development and implementation of TBCs can significantly improve classroom integration and instructional effectiveness.

Cost & Resources Needed

The financial cost of developing the AFNR TBC Library and Guide was minimal, with the primary investment being staff time. One member of the Illinois agricultural education state staff coordinated the project over the course of a year. Most collaboration and development activities occurred virtually via email, phone, and online meetings.

Essential resources included a computer with internet access, access to ISBE TBC materials and guidance documents, and collaborative support from agricultural educators and industry professionals. Google Docs was utilized to develop and organize the guide and challenge library, while ChatGPT assisted in generating initial challenge ideas and supporting graphic development. Overall, the project demonstrates that meaningful, industry-driven instructional resources can be developed efficiently through collaboration, strategic partnerships, and the effective use of accessible digital tools.

References

- Illinois State Board of Education (n.d.). *College and career pathway endorsements*.
<https://www.isbe.net/Pages/College-and-Career-Pathway-Endorsement.aspx>
- Lim, T. (2023). Problem-based learning: Benefits, challenges, and the way forward. In K. Heng, S. Sol, & S. E. Kaing (Eds.), *Innovations and challenges in Cambodian education: Youth's perspectives*. Cambodian Education Forum.
<https://doi.org/10.62037/cef.book.2023.09.05>
- McCarthy, J. (2023). *Creating authentic assignments in CTE*.
<https://www.edutopia.org/article/creating-authentic-assignments-cte?>
- Ross, J. (2024). *The rise and impact of authentic assessment in education*.
<https://edcircuit.com/the-rise-and-impact-of-authentic-assessment-in-education/>
- Sheppard, E., & Conner, C. (2024). The impacts of authentic learning on student outcomes [Doctoral dissertation, University of Missouri- St. Louis].
<https://irl.umsl.edu/dissertation/1468/>