Gamifying the Introduction of the Three-Circle Model of Ag Ed

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Introduction/Need for Innovation or Idea

The three-circle model represents a balanced and efficient School-Based Agricultural Education (SBAE) program, making it a staple of SBAE since the first printing of the diagram in the 1975 edition of the FFA Advisors Handbook (Croom, 2008). The three-circle model is a Venn diagram depicting equal implementation of leadership development (FFA), work-based learning through Supervised Agricultural Experiences (SAE), and classroom instruction (Croom, 2008). Developing effective and well-received lessons that promote student motivation is a pillar of every classroom (Williams & Williams, 2011). Using gamification in content review is a widely used practice; however, the use of game-based learning to introduce and develop understanding of content is much less prevalent (Hancock et al., 2024). Gamification is an effective method to introduce real-world scenarios based on foundational content to SBAE students across grade levels. The Ag Games is an innovative classroom unit to introduce the components of the three-circle model. Additionally, the lesson meets the criteria of the FFA Greenhand Degree, which entails students learning FFA history, mission, creed, and emblem, as well as planning for an SAE (Mozo, 2021). Implementing these introductory topics can present challenges for teachers entering the classroom through non-traditional routes, many of whom may have limited experience with the three-circle model. The 2024 National Agricultural Education Supply & Demand Study found that 53% of new hires in SBAE were alternative licensure route completers (Smith et al., 2025). Incorporating lesson ideas like The Ag Games into certification coursework or early career professional development (Ford et al., 2024) could help new SBAE teachers, specifically industry professionals transitioning into the classroom, build their confidence when introducing the three-circle model to their students.

How it Works/Methodology/Program Phases/ Steps

The Ag Games is composed of five lessons over five consecutive class days at the beginning of the semester. Each lesson incorporates an in-class lecture, a gamified activity, and an individual quiz. At the end of the week, the winning team is announced, and victory speeches are given. Students on the winning team could earn prizes like one free homework pass and free admission to the first FFA football tailgate of the year. The activities are designed as a competition to introduce a new element of the three-circle model to students.

First, divide students into teams. At the end of the unit, teams will be ranked based on their team members' quiz scores and the total number of students who are eligible to earn the FFA Greenhand Degree at the end of the unit. Topics and activities could include:

1. Agricultural Construction Career Development Event (CDE) – Teams work together in three relay-style events: nail relay, tape measure accuracy, and tool identification.
2. Extemporaneous Public Speaking Leadership Development Event (LDE) – Teams are given a random item from around the ag building and have 10 minutes to develop a *Shark Tank* style pitch selling the item.
3. Agricultural Experience Tracker (AET) Scavenger Hunt – Teams complete a scavenger hunt on AET's website, allowing students to establish initial plan for an SAE.
4. Aquaculture CDE – This lesson coincides with the plumbing lesson and connects teams to the plumbing portion of the CDE where they work on using PVC to build out the water control manifold system

5. Creed Speaking LDE – Students individually recite the first paragraph of the FFA Creed. The team with the highest grade on average is awarded the point.

Results to Date/Implications

The Ag Games was implemented with 57 first-year SBAE students. There was a 100% participation rate on the quizzes. The overall average score was 86%. Activities perceived as more *fun* earned higher quiz scores. The Ag Construction CDE relay had the highest average score while the Creed Speaking LDE earned the lowest average score. One of the main focuses of this lesson is for students to begin to meet the requirements of the FFA Greenhand Degree. A total of 49 of 57 students (86%) earned the FFA Greenhand Degree by the end of the semester. However, since this lesson was in the first few weeks of the semester, some students switched classes and did not have the continued opportunity to earn the FFA Greenhand Degree. Overall, students were very receptive to the lessons, and many reported that it was their favorite unit they participated in throughout high school.

Future Plans/Advice to Others

We intend to continue incorporating the Ag Games into introductory SBAE courses by expanding the activities beyond the initial week. The order of the events will be rearranged to be classroom-based first before transitioning to hands-on activities in the lab. Based on the positive feedback received from this unit, we intend to incorporate more gamification (Hancock et al., 2024) into other appropriate introductory topics in the future. While the Ag Games were implemented in a high school SBAE classroom, we believe they would be relevant and useful in courses for pre-service and alternative certification SBAE teachers. Teacher educators should consider incorporating a version of the Ag Games for their undergraduate and alternative license students to model gamification. The Ag Games could easily be modified to fit the resources available in the program, format of the course, as well as the time of the lessons. The Ag Games hold the potential to help build student self-efficacy around topics related to FFA and SAE in which students may not be as familiar and model gamification lessons.

Cost/Resources Needed

While the lesson does not need extensive physical resources, it requires significant time commitment for content development, material preparation, and classroom instruction. The planning and development of lesson content is the most substantial time investment, which involves intentional planning to ensure the effectiveness of the lesson. Before teaching the lessons, instructors must print the necessary documents, and many of the lab activities require additional setup time, taking approximately 30 minutes each day. Each lesson is designed for one hour and fifteen minutes. The necessary materials are readily available in most academic settings, including paper, a classroom, event examples and rubrics, and presentation/slideshow access, which keeps costs minimal. If the lesson were to be implemented with future classes, reusable resources would make the lesson preparation less time consuming.

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