

Gamifying Career Competency Exploration for Youth in Agriculture

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Introduction/Need

Within a rapidly evolving agricultural sector, Career exploration resources can help bridge the gap between theoretical classroom knowledge and the practical demands of a modern workforce. A solution can be found within educational approaches that prioritize experiential learning by learning through real-life contexts, “learning by doing,” and solving authentic problems (Knobloch, 2003). These experiences are key for fostering student agency and career readiness as learners apply knowledge beyond the classroom (Thies et al., 2025). Research has shown that students value experiential learning experiences for achieving professional goals, but students also face challenges with self-efficacy and specific communication competencies (Hendrix & Morrison, 2018; Knobloch et al., 2016). Game-based learning has emerged as an effective method for enhancing this experiential model by simulating complex scenarios in a controlled environment (Fujimoto, 2015). In one study, interactive simulations allowed students to develop “noncognitive” skills such as grit, optimism, and self-efficacy (Smith & Thapa, 2022). Game-based learning was selected because it allows youth to engage in authentic, decision-driven scenarios in a low-risk environment. Building on this foundation, *Harvesting Holdings* was developed to gamify career competency exploration. By simulating an agricultural stock market, the game provides a platform for youth to practice negotiation, decision-making, and verbal communication to better prepare them for the professional landscape.

How it Works

In response to the need for career exploration tools, authors designed the *Harvest Holdings* game and implemented it with 48 4-H youth participants across three groups (aging 12-15) during an on-campus career exploration event at a Midwestern university. *Harvest Holdings* was designed to engage youth to explore how they developed 21st-century skills by playing an educational game. *Harvest Holdings* is a competitive team-based simulation that utilizes cards representing stocks of different agricultural companies to engage players with specific career competencies. Players manage their agricultural stocks, seeking out the majority of shares by engaging with skills such as verbal communication, decision-making, and negotiation. The game is played in rounds, wherein groups strategize to work with and against one another. A round consists of all playing concurrently negotiating and trading cards until they get a winning hand. Between rounds, players are given the opportunity to engage in coaching sessions to identify skills utilized as well as areas for improvement for the next round.

Following the game, players complete a career skills worksheet to self-assess how they applied various competencies during the simulation. The career skills evaluated covered six competencies: Verbal/Sign Communication, Listen & Observe, Resiliency, Helping Others & Collaboration, Negotiation and Adaptability, and Decision-Making & Problem Solving (Partnership for 21st Century Learning, 2019). Players indicated whether they believed these skills were used and to what degree [None (0), Low (1), Medium (2), High (3)]. Additionally, they were asked to respond to the following questions “Why is this career skill important?” and “How could you develop this skill?” By requiring players to explain the importance and development of each skill, the worksheet serves as a tool for deepening the connection between the simulation and real-world application. This qualitative data, combined with self-assessed usage ratings on a 0–3 scale, provides a comprehensive view of how participants internalized the workshop's learning objectives

Results to Date

After gameplay ceased, participants completed a worksheet for players to reflect upon career skills. The following table summarizes participant self-assessments across six key competencies, showing that foundational communication skills received the highest ratings. The quotes highlight students’ abilities to connect the skill competencies to navigating real-world challenges and professional environments.

Table 1

Participant Self-Assessment of Career Skill Usage and Perceived Importance

| Skill Competency | Average Rating | Direct Quotes on Importance |
|-----------------------------------|----------------|---|
| Listen/Observe | 2.69 | “essential in all effective situations”; “to learn more about what others need” |
| Verbal/Sign Communication | 2.67 | “communication is key”; “important part of every career” |
| Helping Others & Collaboration | 2.50 | “working together is a must”; “to let everyone give ideas” |
| Decision-Making & Problem Solving | 2.40 | “important to be able to solve problems”; “every second of every day” |
| Negotiation & Adaptability | 2.24 | “helps you adapt to real world situations”; “need to negotiate in the business world” |
| Resiliency | 2.21 | “to learn from mistakes and improve”; “show how you can keep going after challenges” |

Future Plans/Advice

Evaluation results indicated that while participants valued career skill development, they did not perceive the game’s educational impact universally. To address the need for continued development on educational impact, future versions should better align game mechanics with specific career competencies to ensure participants more consistently reflected on their personal skill growth. Additionally, participants indicated the game instructions were confusing at times. The initial walk-through of the game requires ample time (~10 min) for players to understand game mechanics. From the evaluation worksheets, players struggled with the volume of rules. Future iterations will focus on streamlining the rulebook and extending the orientation phase to ensure players can fully engage with the intended career competencies.

Costs/Resources

Five primary resources can be used to facilitate *Harvest Holdings*. These resources include the *Harvest Holdings* instruction guide, the gameplay presentation, the game cards, the career skills worksheet, and an optional workshop evaluation sheet. All of these resources can be downloaded for free on the National Learner Centered Teaching (NLCT) Partnership website (Author et al., n.d.). Costs for those who wish to implement the game would be related to the printing and/or laminating of the resources. Additionally, time is required to print and/or laminate materials in order to facilitate gameplay.

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