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Evaluating Gamified Experiential Learning as a Mechanism to Bridge the Theory and Practice in Introductory Accounting

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INTRODUCTION & AIM

Background

- Traditional lecture-based accounting education overemphasises procedural content, limiting real-world skill transfer and reducing student motivation (Bui & Porter, 2012; Boyce et al., 2001).
- Gamification and simulation games create immersive experiential environments with immediate feedback — allowing students to practice decision-making in risk-free contexts (Garris et al., 2002; Squire, 2003).
- Farming Simulator 22™ (FS22) presents a unique opportunity to embed accounting practices — bookkeeping, cash flow, loans, and financial statements — within a commercially proven, engaging agricultural business context.

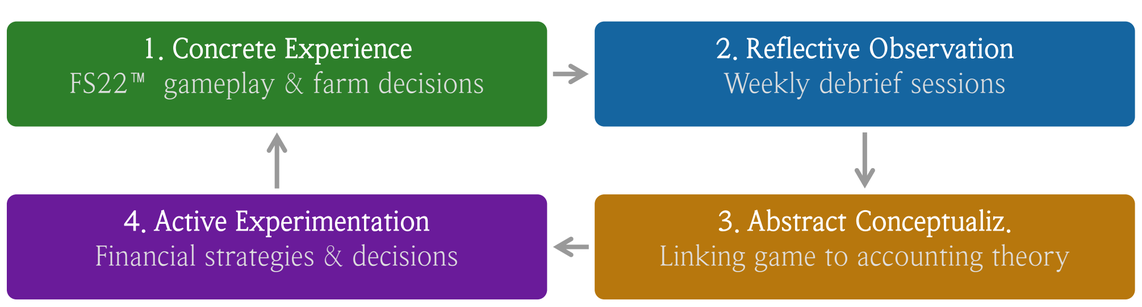
Research Aim

To investigate whether FS22™ as a gamified experiential learning intervention can bridge the theory-practice gap and improve understanding, engagement, and confidence in introductory accounting for undergraduates with no prior background.

Research Question

Can gamified experiential learning (Farming Simulator 22™) meaningfully improve novice undergraduate students' understanding of, engagement with, and confidence in applying introductory accounting concepts?

Figure 1. Kolb's Experiential Learning Cycle Applied to FS22™ Intervention



Theoretical Foundations

- Kolb (1984) Experiential Learning Theory: four-phase learning cycle maps directly onto FS22™ gameplay, debriefs, conceptualisation, and strategic re-play.
- Cognitive Load Theory (Sweller, 1988): agricultural context reduces extraneous cognitive load, freeing working memory to process accounting concepts.
- Self-Regulated Learning (Zimmerman, 2002): open-ended simulation environment scaffolds planning, monitoring, and evaluation of financial strategies.
- Social Constructivism (Vygotsky, 1978): peer-based farm management and group discussions promote collaborative knowledge construction.

METHOD

Research Design

- Mixed-methods exploratory sequential design (Creswell & Clark, 2018) — qualitative findings informed quantitative instrument design.
- 32 undergraduate students enrolled in Global Accounting & Financial Management, Semesters 1 & 2, 2024. No prior accounting knowledge required.
- Intervention: students managed a virtual farm using FS22™ alongside QuickBooks®, with accounting tasks (bookkeeping, cash flow, financial statements) embedded in gameplay throughout the semester.

Data Collection Method	n	Instrument / Purpose
Quantitative Survey (pre & post)	32	5-point Likert; attitudes, knowledge, motivation, outcomes
Semi-structured Interviews	8	45–60 min; stratified sampling across performance levels
LMS Analytics (Moodle + FeedbackFruit)	32	Participation, peer feedback, assignment submissions

Why Farming Simulator 22™ ?

- Commercially proven platform with 2.5M+ copies sold — high usability reduces technology adoption barriers for non-gamer students.
- Built-in income/expense tracking, equipment loans, crop market pricing, and balance sheets naturally embed double-entry bookkeeping without artificial constraints.
- Open-ended gameplay encourages self-regulated learning: students plan farm finances, execute purchases, and evaluate outcomes across multiple decision cycles.

SELECTED REFERENCES

Selected References

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RESULTS & DISCUSSION

Figure 2. Mean Survey Scores — Post-Intervention (5-point Likert Scale, n=32)

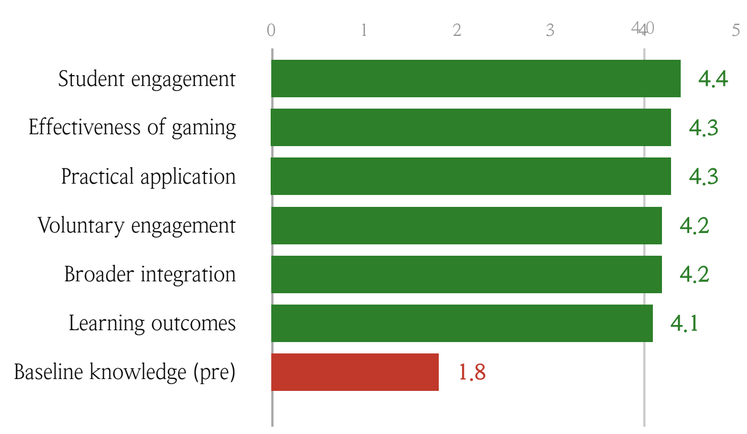

Table 1. Survey Construct Means (n=32)	Mean	Level
Student engagement & motivation	4.4	Very High
Effectiveness of gaming approach	4.3	Very High
Practical application & decision-making	4.3	Very High
Voluntary engagement outside class	4.2	Very High
Support for broader game-based integration	4.2	Very High
Self-reported learning outcomes	4.1	High
Baseline accounting knowledge (pre)	1.8	Low — novice confirmed

Table 2. Qualitative Themes (n=8 Interviews)	Key Finding
1. Practical Context	Agricultural scenarios made abstract principles tangible; "everything clicked" when managing real farm finances.
2. Engagement & Motivation	Students voluntarily extended learning via YouTube tutorials and peer strategy discussions outside scheduled class time.
3. Challenges / Curve	Initial overwhelm with farm complexity overcome through structured weekly debriefs and clear scaffolding.
4. Real-world Confidence	Accounting skills transferred beyond class; one student applied knowledge to assist parents with small business accounts.
5. Career Perspectives	Several students reconsidered accounting as a career path; one expressed specific interest in agricultural business accounting.

Insights from Qualitative Data

"Accounting was just numbers on paper. When I managed the farm's finances, everything clicked." — P3, F, 19
"I looked forward to our gaming sessions. I watched YouTube tutorials in my own time to improve my farm strategy." — P1, F, 18
"Seeing how cash flow works in practice — timing crop sales to buy equipment — made working capital real." — P7, M, 20

Study Limitations

- Single institution; n=32 survey, n=8 interviews; self-reported learning outcomes; short-term intervention only; no control group for comparative analysis.

CONCLUSION

Conclusion

- Commercial simulation games can effectively support introductory accounting education when pedagogically scaffolded with clear learning objectives, structured debriefs, and a graded rubric.
- Game-based learning significantly enhances engagement and motivation, addressing the persistent challenge of passive student participation in accounting courses.
- Experiential application through FS22™ led to deeper conceptual understanding and stronger real-world confidence than traditional lecture-based instruction alone.
- A balanced curriculum — combining gamified experiential tasks with conventional instruction — is preferred by students and is recommended for practical implementation.

FUTURE WORK

Future Research Directions

- Longitudinal studies: examine long-term retention of accounting concepts learned through gamified interventions.
- Comparative studies: benchmark FS22™ against established business simulations (e.g., Capsim, MarketSim, ERPsim).
- Randomised controlled trial: compare FS22™ + traditional instruction vs. traditional instruction only within a single course.
- Multi-institution replication across diverse institutional and cultural contexts to strengthen generalisability.

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