Is the Virtual Grass Greener? Video Game Simulation Use as a Teaching Tool

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Technology has become an integral part of our lives

Instructors must find new, innovative ways to hold students’ attention

Technology-based assignments and projects are growing in popularity

Objective

Utilize video game “Farming Simulator” to assist with instruction of undergraduate students enrolled in farm and ranch management courses at TTU and UTM
“Farming Simulator” Video Game

- Provides player with true-to-life farming “experience”
- Player must make all production and financial decisions
  - Can produce a variety of crops and/or livestock
  - Farm machines and implements can be purchased
  - Loans can be obtained for farm financing
Methods

- Sample consisted of undergraduate students enrolled in a junior level Farm and Ranch Management class during the Spring 2018 semester
  - Texas Tech University (53 students)
  - University of Tennessee at Martin (35 students)

- Farming Simulator game was installed on university computer lab machines at TTU and UTM

- TTU and UTM students played game during multiple lab sessions
  - All students completed tutorial exercises and accompanying lab assignment

- Students completed classroom assessment techniques (CATS) survey upon completion of game component of the course
Results

Seen/heard of Farm Simulator prior to this class

TTU
- I had not seen or heard of Farm Simulator before this class: 30%
- Yes, I play it regularly: 6%
- Yes, I have played it some: 18%
- I had seen/heard of it, but not played it before this class: 45%

UTM
- I had not seen or heard of Farm Simulator before this class: 43%
- Yes, I play it regularly: 11%
- Yes, I have played it some: 34%
- I had seen/heard of it, but not played it before this class: 19%

TOTAL
- I had not seen or heard of Farm Simulator before this class: 23%
- Yes, I play it regularly: 8%
- Yes, I have played it some: 25%
- I had seen/heard of it, but not played it before this class: 44%
Results

Enjoyed the game, overall

TTU
- Yes: 26%
- No: 74%

UTM
- Yes: 83%
- No: 17%

Total
- Yes: 27%
- No: 73%
Results

Game likes

- The game was fun to play
- I don't have a farming background, so I was able to somewhat "experience" farming
- The game interface was interesting/different from typical class lectures/labs
- Other
Results

Game dislikes

- The game was too complicated to figure out
- I don’t think the game was a very good simulation of actual farming
- I had to play the game outside of my regular lecture/lab time
- Other

TTU
- 19%
- 40%
- 36%
- 6%

UTM
- 17%
- 40%
- 23%

Total
- 18%
- 32%
- 31%
- 19%

- The game was too complicated to figure out
- I don’t think the game was a very good simulation of actual farming
- I had to play the game outside of my regular lecture/lab time
- Other
Results

- Play game for leisure (if not a part of the class)
Results

Difficulty of keyboard-control operations

TTU
- Very easy, I had no trouble adjusting to the keyboard controls
- Relatively easy at first, and got easier as the game was played
- Difficult at first, but got easier as the game was played
- Very difficult, I had a lot of trouble using the keyboard controls

UTM
- Very easy, I had no trouble adjusting to the keyboard controls
- Relatively easy at first, and got easier as the game was played
- Difficult at first, but got easier as the game was played
- Very difficult, I had a lot of trouble using the keyboard controls

Total
- Very easy, I had no trouble adjusting to the keyboard controls
- Relatively easy at first, and got easier as the game was played
- Difficult at first, but got easier as the game was played
- Very difficult, I had a lot of trouble using the keyboard controls
Results

Real-world farm/ranching experience

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TTU

- 0-3 years: 9%
- 4-6 years: 22%
- 7-10 years: 26%
- 10+ years: 43%

UTM

- 0-3 years: 3%
- 4-6 years: 23%
- 7-10 years: 52%
- 10+ years: 22%

Total

- 0-3 years: 7%
- 4-6 years: 22%
- 7-10 years: 26%
- 10+ years: 35%
Results

Accuracy of farm decision-making process replication

![Pie charts showing accuracy levels for TTU and UTM.](chart.png)
Results

- Game application of course principles

- TTU
  - 28% Many of the topics/principles covered in class could be applied
  - 28% Some of the topics/principles covered in class could be applied
  - 28% A few topics/principles covered in class could be applied
  - 13% Very little or no topics/principles covered in class could be applied

- UTM
  - 34% Many of the topics/principles covered in class could be applied
  - 3% Some of the topics/principles covered in class could be applied
  - 23% A few topics/principles covered in class could be applied
  - 4% Very little or no topics/principles covered in class could be applied

- Total
  - 31% Many of the topics/principles covered in class could be applied
  - 18% Some of the topics/principles covered in class could be applied
  - 18% A few topics/principles covered in class could be applied
  - 33% Very little or no topics/principles covered in class could be applied
Results

Most applicable course topics

- TTU
  - Enterprise selection and management: 19%
  - Capital and cash management: 6%
  - Risk management: 40%
  - Other: 36%

- UTM
  - Enterprise selection and management: 17%
  - Capital and cash management: 3%
  - Risk management: 49%
  - Other: 31%

- Total
  - Enterprise selection and management: 18%
  - Capital and cash management: 5%
  - Risk management: 43%
  - Other: 34%
Results

Interest in incorporating game into lab

- TTU
  - Yes (explain why): 6%
  - No (explain why): 9%
  - Maybe (explain why): 2%
  - No response: 83%

- UTM
  - Yes (explain why): 26%
  - No (explain why): 17%
  - Maybe (explain why): 3%
  - No response: 54%

Total
  - Yes (explain why): 13%
  - No (explain why): 11%
  - Maybe (explain why): 5%
  - No response: 72%
Results

Interest in incorporating game as class project
Conclusions and Future Plans

- Students enjoyed the game overall
- Students will want to install game on personal computers
- Students REALLY want game controllers instead of using keyboard controls

Future plans
- Further integrate game into lab portion of the courses
- Develop semester-long game project
  - Introduce “friendly-competition” among students
- Expand game to other courses such as agricultural finance