

Enhancing Statistics Classroom Review Through A Cooperative Fantasy-Themed Board Game

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Rationale

- Course with final project instead of exam
- Un-graded formative assessment for the "extra" days in lieu of exam review
- opportunity to help students review and solidify the material learned in the course

Background

- Small Liberal Arts College on a semester system
- Second course in Statistics (Modeling) - $n < 20$
- Required course
 - Statistics and Economics-Mathematics majors
 - Course content relevant for senior major assessments for both
- Elective course for Data Science minor

Game Development

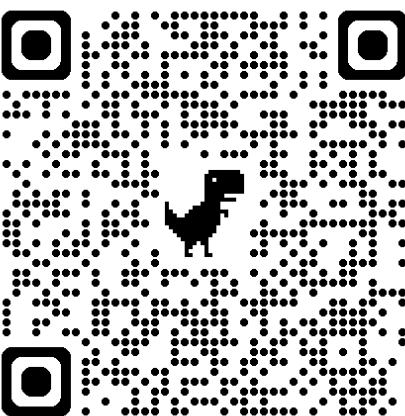
Objective: cooperative Fantasy-style review board game

- Selected the four main topics to cover
- Conversation with generative AI program guided . . .
 - identification of game structure based on my prior board game experience
 - lay out of corresponding storyline, names, and narrative framework
- I developed the review questions to insert in the narrative framework
- Used a free online map generator for the visual representation which students enjoyed
- Classroom response quiz generated from the questions
- Students were allowed to use notes while answering questions

Tools

Tools that were utilized to facilitate the creation of the review game:

- Online Fantasy Game Map Creator
- Generative AI
- Classroom Response System



Game Introduction

"You are a group of valiant heroes in the land of Statistical Modeling on a journey to recover the lost scrolls of knowledge. On your quest, you will pass through four regions: the plains below Mount Regressionmore, the caverns within the ANOVA Abyss, the marshlands surrounding the Logistic Lagoon, and the forests shrouding the walls of the Blocking Bastion. At the end of your journey, you will face the ghost of Modelith the Magnificent, the magical tyrant who is said to have hidden the scrolls among their horde of untold riches."



Game Materials

To play, you will need:

- Printouts of game board OR projector displaying the game board
- Printed or shared game instructions
- 8 Dice
- Questions in a Classroom Response System

Discussion

The game achieved all my criteria:

- a game system requiring players to answer all questions
- fun activity for students
- review of main content for course
- collaborative
- appropriate difficulty for students to revisit course material

This review game model can be modified and accessible to nearly any statistics classroom!

Selected Student Feedback

Students were incentivized to fill out an anonymous survey after the game.

By the Numbers

13/18 students completed the game review survey

All 13 indicated they enjoyed the game, with 11 giving it a 5 out of 5

All found it at least somewhat helpful, with 9 indicating it was very helpful

Student Comments

"I thought it was a fun way to work together and review the previous sections we have learned throughout the semester."

"I think it could be expanded upon and be even longer. It was super fun and a great study tool."

"It was really fun and a great way to end the semester!"

What's Next?

With longer preparation time, I plan to incorporate some of the following:

- Hire students with visual art backgrounds to help design and create the game map
- Hire students with creative writing backgrounds to help develop the story and narrative framework
- New story settings
- New gameplay mechanisms
- Build a semester long game framework
- Implement this review game model in a large course setting

Contact Information

If you are interested in exploring this review game model with me, here is my contact information:

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I am happy to...

- Share materials (QR code links to Google Folder)
- Chat about my approach
- Collaborate on new games