Gamification of the Classroom
Sponsor: WSU Intelligent Robot Learning Laboratory
Mentors: Chris Cain, Matthew Taylor, Sean Brasier, Chris Fifield, Alex Joens, Patrick McSweeney, Kevin Toombs

Motivation
- Games are very engaging, school is not.
- Games have been applied to other fields with great success.
- A more motivated student is a more successful student.
- There is a game for everyone.
- By learning a student’s personality profile or gaming preferences, they can be matched with a game that maximizes their classroom motivation and engagement by tying effort in class to progress in the game.

Project Goals
- Create a game that students enjoy and find motivating
- Develop a database system to record student interactions with the game.
- Develop a framework for connecting the classroom to the game, in order to keep students engaged.
- Analyze data from database to find correlations between gaming preferences and game engagement.

Design
- Designed with mobile game microtransactions in mind, replacing the monetary payments with classroom ties.
- Design a motivating and engaging game with playing limitations such that students are not distracted from completing their coursework.
- Add ties back to class such that effort in class influences game progression.

Implementation

Process Flow Diagram
1. Punctually enters grades and lab attendance.
2. Tailors rewards based on students interest, active participation, and continued improvement.
3. Offers in-game incentives to attend class and actively contribute.
4. Wants to play the game.
5. Enjoys the game.
6. Collects data.
7. Unlocks content, activates bonuses.
8. Earns in-game incentives by attending and actively contributing.
9. Unlocks in-game content by submitting assignments on time and showing positive grade trends.
10. Earns in-game bonuses by improving test scores.

Glossary & References
Unity: Game engine used in development.
BrainHex: Game personality test.

Results
- Successful deployment in CptS 121!
- Out of the 112 students in the class who said they ever play games, 25 of them engaged with our game.
- Engaged 32% of targeted BrainHex class (Achiever).
- Peak average playtime was 30 minutes a week, was higher with new content.
- 48% of students who interacted with our game reported increased motivation over the semester. This is 28 points higher than the class average.
- Tests show that our game scales up to 800 concurrent users on a single server.

Impact & Future Work
- Developed a framework that will be used to attempt to prove future correlations between player preferences and game engagement, as well as between game progress and motivation or engagement in class.
- Developed a modular database to capture player information.
- Developed a framework for communication between TAs, professors and the game to maximize classroom connections.
- Collected gameplay statistics during the semester for Chris Cain’s research.
- Reusable framework allows for easy implementation of new content for future groups.

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Team Baratheon