

Waterloo ExL Community of Practice: Games and Simulations in the Classroom

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Location: DC 1301

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Game-Based Learning: Here, There, Everywhere**What makes a game a game?**

- Randomness
- Winner and loser – you know when someone wins
- Reward or prize – you get something out of it
- Fun, enjoyable
- Problem solving and challenge
- Rules, goals, objectives – not just playing in the sandbox
- Feedback and outcomes – immediately
- Story, context that is contrivance, outside of the real world. The narrative forces the player to step out of their shoes and into the game.
- Interaction and interactivity

Game characteristics that promote learning:

- Fun/enjoyability – students are interested and engage with the content in a fun way
- Story/fantasy/context – see the content in the context of the game, perhaps they must test their knowledge or are given an opportunity to apply something they learned
- Rules/goals/objectives – a framework in which the game is played
- Interaction/interactivity – interact with other students in the learning
- Outcomes and feedback – more immediately than submitting an assignment. You know right away if you get the answer right or not
- Problem solving/challenge – put knowledge to the test

One offs, “micro” games

- Quick games that could be thrown into any given lesson
- Used sparingly so that they are novel to students (maybe 1-2 times per term)
- Kyle uses to midterm/exam review to reinforce a topic
 - o Jeopardy
 - German language class with ~25 students
 - Construct categories and use a PPT as Jeopardy board
 - Students are put into teams
 - Kyle keeps track of points/correct answers
 - Students work together (interactivity), can learn from their peers, engage with content and test knowledge
 - Student have reassurance that they know the content – or they don't know it
 - Biggest challenge: can take time to set up the first time, but there are online editors that can help. Kyle spent time to ensure that the board looked authentic

and believes that this element (colours, fonts, format) helps it resonate with students – they feel more like they are in the game.

- [IF-At Cards](#)
 - Scratch card – students are divided into groups and must fill out the sheet selecting the correct answer. If they are correct a star appears, and if not they must try again. Like a scantron multiple choice but feedback is immediate.
 - You have to engage with your group and agree on the right answer
 - Competitive element to be the first one to get the most correct
 - No reward – being prepared for the exam is the reward! Kyle has also pretended there is a prize to entice students
 - Biggest challenge: finding the balance in the challenge of the question. Can't be too easy – has to be hard enough that it requires the group to working together – but if it's too hard it's not as enjoyable.
 - If you want to try this, CTE can help with the first integration, and then you are responsible for purchasing (cost is ~\$0.10 per sheet)
 - Consider having the students do the questions first, and then meet as a group to work through the IF-AT card – two stage testing
- Discipline specific game-based apps: Duolingo
 - Duolingo is a game-based language app – students have the opportunity to enhance their learning on their phone – there are no associated marks but it will help learning
 - People are trying to gamify everything – there may be something that applies to your discipline, such as Fold It, a science puzzle app that focused on folding proteins
- **More intensive, “macro” games**
 - Larger fixture of the class
 - Digital game based learning
 - Playing commercially-available games with relevant disciplinary content
 - Student may already be playing for fun and the game has relevance to discipline – they can uncover real world context in the game
 - Critique the accuracy/authenticity of the experience
 - Integrating gamification into the course
 - Encourage engagement through gamified means
 - Reward the completion of activities/tasks with points
 - Embed elements of choice into the course
 - Technology + fun + reward = better engagement
 - Example: [Civilization](#): The game's objective is to "Build an empire to stand the test of time": it begins in 4000 BC and the players attempt to expand and develop their empires through the ages from the ancient era until modern and near-future times.
 - Provide opportunities to reflect on the experience, talk about what happened
 - Example: Learning German by playing World of Warcraft in German with German players, participate in German discussion boards
 - Optional, but provides an opportunity to engage further with the course content and learning, students are interested because it's something they are already engaging with

- **Even more intensive**
 - Games as the learning experience
 - Extramural learning
 - Game becomes a learning experience
 - Learning that takes place outside of any educational context
 - The game itself does implicit learning
 - Requires space and time to discuss experience afterwards
- **Thorough, thoughtful integration**
 - Lee Sheldon's The Multiplayer Classroom (2012)
 - Students collaborating together in teams throughout the entirety of the course to learn with and from one another, motivated by game principles and designs
 - Focus on
 - Collaboration
 - Problem solving
 - Narrative
 - Engagement
 - Choice
 - Example: Jolanta Komornicka HIST 391: The Black Death
 - The course is set up to be a game – blend between a game and a simulation called “How to Play the Black Death... and Survive”
 - Course was redeveloped running for the first time Fall 2018, previously was more of a typical seminar format.
 - Students are split into groups where they are running a plague hospital
 - Each group comes up with a name and banner, as you go through the course and complete quests, you get pins/badges for your banner – there are positive and negative badges
 - Assignments are graded individually, there is a double grade that depends on team performance
 - Winning team get a black death plush
 - What does this mean for student engagement and learning? Research is happening right now: <https://uwaterloo.ca/centre-for-teaching-excellence/descriptions-funded-lite-grant-projects/gamifying-history-designing-and-implementing-game-based>