Teaching Strategies: Games, Simulations and Gamification
- Overview
- Quick Start Guide (101)
- Variations on this Strategy
- Testimonials
- On the Web
- In the Library

Overview

According to Lewis, Lancaster, Savenye and Haas (2013), "the goal of using games in any learning scenario, whether Civics or Social Studies, Math or Reading, is to engage the learner and provide them motivation to continue exploring the content in a meaningful way" (p. 7). Games and simulations can provide structured environments that guide students through exploration of content in a risk-free setting in which they solve problems and make logic-driven decisions (Gee, 2010). Hainey et al (2013) describe the value of learning in games and simulations:" Playing a game becomes meaningful and supports learning when the relationships between actions and outcomes in a game are both discernible and integrated into the larger context of the game" (p. 475).

LinkedIn Learning video playlist:
- Gamification of Learning
- Engaging Learnings with Game-based Learning using Kahoot!

There are 5 Best practices for integrating games and simulations according to Balasubramanian and Wilson (2006):

1. The design of games and simulations should be sophisticated and challenging enough for students to be cognitively engaged with the game.
2. The content of games and simulations should be aligned with the standards and viable curriculum in schools.
3. The logistics and usability of the games should reflect classroom realities and time constraints in schools.
4. The feedback and assessments embedded in the games should embody measurable learning outcomes.
5. The teacher guides accompanying the games should provide sufficient ideas, activities and resources to enhance students learning.

Gee's (2007) learning principles that all "good games" incorporate:
1. Identity.

2. Interaction.
3. Production.
4. Risk Taking
5. Customization.
6. Agency.
7. Well-Order Problems.
8. Challenge and Consolidation.
9. "Just in Time" and "On Demand".
10. Situated meanings.
11. Pleasantly Frustrating.
12. System Thinking.
13. Explore, Think Laterally, Rethink Goals.
14. Smart Tools and Distributed Knowledge.
15. Cross-Functional Teams.
16. Performance Before Competence.

Gamification refers to using elements of gaming as part of instruction. (Kapp, 2012) Aspects of games that have been found to have educational benefits including being able to model high-stakes situations in low-stakes environments, allowing learners to "level-up" by beginning with a version of a game with more "hints" and slowly removing the help and support mechanisms, providing ongoing, continuous feedback (the "infinitely patient tutor"), and increase students' focused mental effort on course material by making the work of learning fun (Higdon, Miller, and Paul, 2009). Quest to Learn is a school in New York for middle and high school kids where the curriculum has been adapted by game developers to use the underlying principles of games to teach PK-12 subjects.

Gamification Infographic from Knewton

Quick Start Guide (101) - Games and Simulations

Employing this strategy can be rewarding but takes careful planning to give your students the tools they need to connect the information learned in the game to the content - we have created a planning document that walks you through the steps to creating a comprehensive lesson based on games or simulations that can be found here: Games and Simulations Instruction Planning Template.

Quick Start Guide (101) - Gamification

This strategy takes careful planning to create a game-based environment that is effective and engaging. We have created a planning document that walks you through the steps to creating a gamified classroom, it can be found here: Gamification Instruction Planning Template

On the Web

Games and Simulations

Here are some game and simulation resources on the web that you might integrate into your courses:
Gamestar Mechanic
Learn how to make your own video games through quests and gameplay.

Classcraft
Build a fun, gamified classroom environment using Classcraft.

Getbadnews.com
Get as many followers as you can by creating fake news.

Fake it to make it
A social impact game about fake news.

This War of Mine
Try to survive in a city under seige.

iCivics
iCivics is non-profit organization driven by Justice Sandra Day O'Connor's passion for increasing civics knowledge in K-12 students. iCivics and Filament Games have developed a suite of games and lesson plans based on various civics and government topics.

Filament Games
Filament Games produces games exclusively for learning, relying on their staff of instructional designers and game developers to create games that are based on learning theory.

Center for Games and Impact
The Center for Games and Impact at Arizona State University is the brainchild of Dr. James Gee, one of the top names in educational gaming. The Center's mission is to evaluate the impact of games on learning and evaluate the sustainability of gaming models in education.

River City
River City is an interactive science simulation for middle school students. Students travel back in time to use science skills to track down the source of a town's health problems.

OpenSim

OpenSim is an open platform sim creator that can be used to create a virtual environment.

Games Based Learning MOOC

Games Based Learning MOOC is a self-paced open course that walks the user through the principles of educational games and game-based learning.

Immune Attack

Immune Attack is a game funded by the National Science Foundation to teach users about immunology.

Making History

The Making History games series provides players an opportunity to work through alternate history events using logic and strategy to determine the course of events for their chosen country.

Gamification

- 10 Specific Ideas to Gamify Your Classroom
- Jane McGonigal: Gamification of Education TED-Ed
- Paul Andersen: Classroom Game Design at TEDxBozeman
- Gamification in Education: What, How, Why Bother?

In the Library

Balasubramanian, N., Wilson, B.G. (2006), "Games and simulations", in Crawford, C. (Eds),*ForeSITE, Vol. 2005, Proceedings of Society for Information Technology and Teacher Education International Conference 2006, Chesapeake, VA*, AACE (p. 2), available at: http://site.aace.org/pubs/foresite/

Cohen, A. M. (2011). The gamification of education. Washington: World Future Society.

Edmonds, S. (2011). Gamification of learning. Training and Development in Australia, 38(6), 20.

Gee, J. (2007). Good video games and good learning . New York : Peter Lang.

Gee, J. P. (2010). Video games: What they can teach us about audience engagement. Nieman Reports, 64(2), 52.

Hainey, T., Westera, W., Connolly, T. M., Boyle, L., Baxter, G., Beeby, R. B., & Soflano, M. (2013). Students' attitudes toward playing games and using games in education: Comparing scotland and

the netherlands. Computers & Education, 69, 474.

Lewis, C.L., Lancaster, J., Savenye, W.C., and Haas, N. (2013). A Formative Evaluation of the Balance
of Power Game and Curriculum. Journal of Applied Instructional Design, 3 (3), 5-16.

Sierra, W. (2013). Gamification as twenty-first-century education. ProQuest, UMI Dissertations
Publishing).