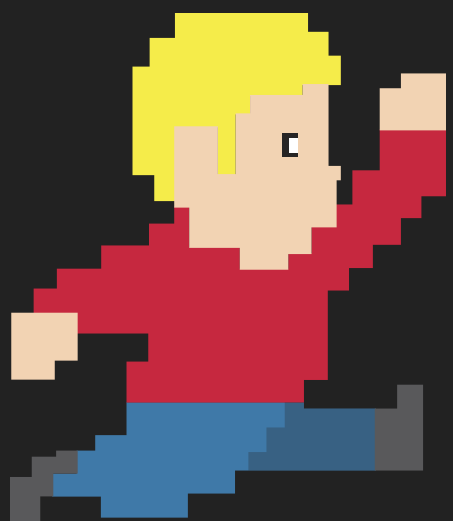


GAME BASED LEARNING

A GAMING INFOGRAPHIC OLTD 508-BRIGITTE ATWOOD

WHAT IS IT?



"...game based learning using a unique game or simulation to cater to the evident learning needs of a group....these have a definite learning objective that is achieved through the path that the game lays out. It is usually an immersive experience, which offers learners something to “do”; think logically, plan strategically, and move ahead towards the goal." (Majumdar, 2015)

Gamification

"...is the process of applying game based elements or mechanics to existing learning platforms or content to increase learner interest and motivation. The game mechanics can be applied in the form of achievements, rewards or recognition, opportunity of self expression, or even plain old competition. These mechanics help learners achieve more through goal orientation, increasing persistence, learning by repetition, or through collaboration with peers." (Majumdar, 2015)

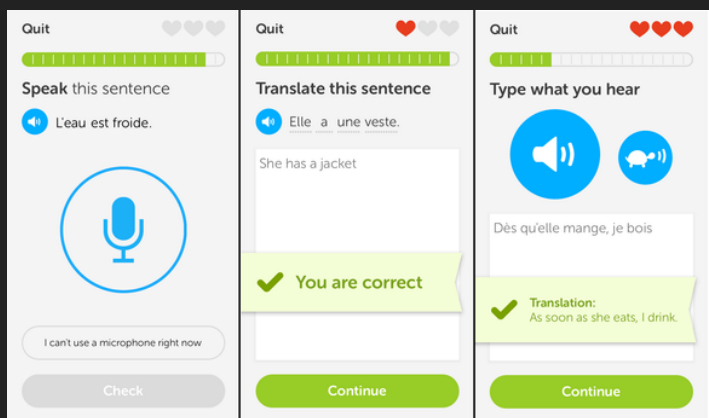


Figure 1

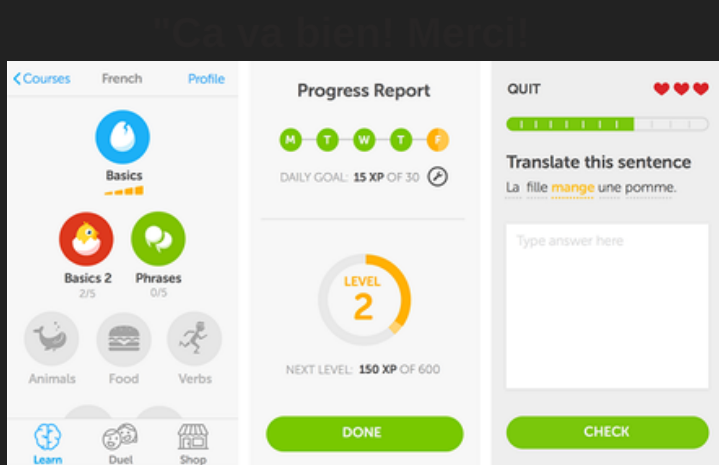


Figure 2

In my classroom, I can use Duolingo to help students increase their French oral competency. This game provides points and stars when each level is complete. It moves the player on to the next level as they correctly answer the questions. Students get instant feedback and are motivated to learn and to improve their language proficiency.

SERIOUS GAMES

"Serious games are games whose primary objective is NOT fun or entertainment, rather learning or practicing a skill. Its use has grown, particularly in such sectors as education, defense, aeronautics, science or health. Its purpose can be one of many: from training firefighter crews in emergency situations to training a sales team, teaching mathematics or practicing a language." (GameLearn, 2017)



Figure 3



Figure 4



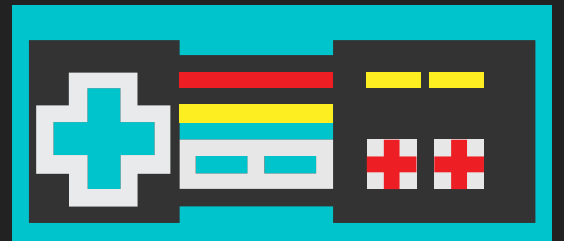
Figure 5

During math time, my students use Mathletics.ca to solidify math concepts seen in class by completing assigned lessons as well as participating in serious games to practice and review concepts such as factorization. They like having choice of levels to fit their individual needs and are able to compete against others to add a competitive element to their learning. This is very motivating for some students.

"The reasons why game-based learning is so popular, are becoming much more well known: as we have seen, they improve student engagement and motivation, they afford direct practice without risk, and they facilitate the memorization and retention of knowledge." (GameLearn, 2017)

SIMULATIONS

"Simulation-based learning approaches aim to imitate a system, entity, phenomenon, or process. They attempt to represent or predict aspects of the behaviour of the problem or issue being studied. Simulation can allow experiments to be conducted within a fictitious situation to show the real behaviours and outcomes of possible conditions." (Abbey et al, 2006)



Simulation games can be computer and non-computer based games. participants can work on gaming, training or modelling on the computer. Students can use simulation games in the classroom by role playing or playing educational games in the form of field, paper, cards and board games. Many of the simulation games give you options to play individually, against the computer or against someone else who is playing the game. (Abbey et al, 2006). In my class, my girls sometimes like to play a "Hollywood Beauty Secrets" game. This games lets them practice a skin care regime using different products and tools. Others like to play Driving School Simulator. Even if they are only 10 and 11 years old, they like the feeling of learning how to drive in an authentic place like a city which offers scenery and obstacles.



Figure 6



Figure 7



Figure 8

COTS

COMMERCIAL OFF THE SHELF GAMES

Refers to commercially available digital (computer or console) games that are designed for entertainment rather than educational purpose. (Van Eck, 2008)

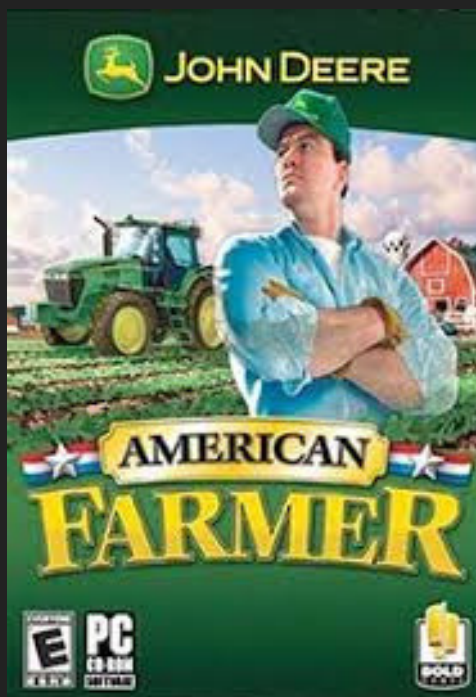


Figure 9



Figure 10

COTS games could be used in the classroom to work on skills and problem solving. They can support motivation and collaboration in the classroom. Paired with curriculum, they can support community building skills and support curriculum themes in science and technology. Also, they can support understanding and appreciation for positive and inclusive multicultural societies.

"As opposed to the stereotype by which video games are a cause of antisocial or violent behavior, the reality is that game-based learning can encourage prosocial and positive attitudes for society as a whole." (GameLearn, 2017)

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JIM PAUL GEE: GOOD LEARNING AND GAMES PRINCIPLES



Figure 11

13 Principles

1. Empowering Learners

- Co-design
- Customization
- Identity
- Manipulation

2. Problem Solving

- Sequencing
- Pleasantly Frustrating
- Cycle of Expertise
- Jit and On Demand
- Fish Tanks
- Sanboxes
- Skills Under Strategies

3. Deep Understanding

- System Thinking
 - Meaning As Action
-

Co-design Principle

The designer of the game gives the player choices, lets him make decisions, which in return effects the outcome of the game. The player becomes the co-designer and thinks as a designer as he considers the desired or possible outcome.

In my classroom, students who feel they have a say in what/how they learn will get the most benefit from their learning. In my personal experience, I often ask my students how they would like to show me their learning. I offer a variety of options, depending on the tasks as well as ask for suggestions. I'm also flexible and I adapt as they work individually or with a partner to make sure the learning is moving forward.

Customization Principle

The player is supported in trying to solve problems safely and in a variety of ways. The games are developed to support players at different levels. The game also provides players with new options for problem solving and makes them feel safe with their choices.

In the classroom, being aware of different learning preferences and abilities will allow my learners to move forward successfully. By allowing them to vocalize their preferred way of learning, they will take ownership and feel comfortable to try other ways of learning.

Fish Tank Principle

Games give you smaller amount of information or complexity at the beginning of the game. As you play, the complexity increases. This is to allow you to be able to understand the game and to be successful as you play without being overwhelmed with all the game components from the beginning.

In a classroom situation, it is very important to begin introducing new content in small lessons with clear goals and criteria. Students can then process the information and build on to previous knowledge as new content is introduced. Building on to prior knowledge will also solidify understanding and encourage retention.

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Image Credits

Figure 1 and 2 Duolingo. Retrieved from <http://hoctienganhlvt.blogspot.com/2016/08/phan-mem-hoc-tieng-anh-duolingo-hoc-tieng-anh-mien-phi-hieu-qua-cao.html>

Figure 3, 4 and 5 Retrieved from mathletics.ca

Figure 6 Hollywood Beauty Secret. Retrieved from <http://wsh.gamib.com/x/hollywoodbeautysecrets/x.html?z=0ivx>

Figure 7 Role Play. Retrieved from https://www.123rf.com/photo_11330237_illustration-of-a-kid-playing-the-role-of-a-doctor.html

Figure 8 Driving School. Retrieved from <https://boombit.com/?games=driving-school>

Figure 9 American Farmer. Retrieved from https://www.google.ca/search?q=american+farmer+game&source=lnms&tbm=isch&sa=X&ved=0ahUKEwj8oeekPvLdAhW5JjQIHVjxDUoQ_AUIDigB&biw=1536&bih=706#imgrc=PcfVMrFah3ff2M:

Figure 10 World of Warcraft. Retrieved from https://www.google.ca/search?q=world+of+warcraft&source=lnms&tbm=isch&sa=X&ved=0ahUKEwiqpejpo_LdAhXNGDQIHShyAYoQ_AUIECgD&biw=1536&bih=706#imgrc=mlkCYs1R7um6gM:

Figure 11 Retrieved from <https://www.colchester-events.co.uk/event/rapture-gaming-festival-rapture-smash-esport-weekend-ticket/>