JAMES PAUL GEE'S "PRINCIPLES ON GAMING"

"Principles on Gaming" is a Youtube video in which James Paul Gee describes the way game design includes many factors and concepts that should also be applied to the design of teaching resources in order to increase their effectiveness!

In the video Gee talks about the following principles of good game design, which he also notes could be equally used by teachers for good lesson design:

× *Elements of games that empower learners:*

   Co-design, Customization, Identity/Personalization and Manipulation

× *How games promote good problem solving:*

   Sequencing, Pleasant Frustration, The "Cycle of Expertise", Information just in time, Fishtank and Sandbox Principles, Skills under strategies

× *How games create deep understanding:*

   Complex problems, Meaning as action/Situated Meaning

HELLO!

I''m James Paul Gee

Before Matt compares three of the principles from my video with his fav games from childhood AND his own teaching experiences…

See the next two slides' definitions to understand some fine, but important differences in gaming terminology…

Types of Games:

Serious Game

✓ Games designed with entertainment AND a serious educational purpose in mind
✓ A specific "winning" end condition is specified
✓ While they are intended to entertain to increase motivation, *the primary purpose is learning*

Simulation

➢ An immersive experience for players, which may or not allow for "winning and losing"
➢ Can *recreate low-risk or simplified real life experiences* or create experiences that are impossible in real life (fantasy storylines or historical events)
➢ For example, law students in moot court, business students running a mock company, digital flight simulators, or digital surgery simulators

COTS Game

✓ COTS is an acronym for "Commercial Off–The–Shelf"
✓ In the context of software, this refers to any product that is designed and sold to be used "as–is" as opposed to a custom designed piece of software
✓ When it comes to using Games 4 Learning, we are talking about using *games designed primarily for entertainment being used in the process of education*

All of these allow users to practice knowledge or skills in a risk–free environment, and although I am talking about digital games these can all be non–digital as well

Game-Based Learning vs. Gamification:

Game-Based Learning

- Game environments that are purpose-built to allow learners to experience learning objectives rather than just hear about them
- In other words teaching using a virtual environment that motivates learners by allowing them to quickly see and understand connections between the learning and real life
- To put it simply, using a teaching game that was designed for education

Gamification

- Applying elements of games to non-game learning activities
- Adding game-like features to any learning system (a course, a Learning Management System, etc.)
- Leverages game features like points, achievement badges, prizes, rewards, avatars, levels and more to increase learner engagement

AND NOW!

For the moment you've been waiting for, Matt will describe how three of my principles relate to games he loved as a kid, and to learning principles he is interested in as a teacher!

BIG CONCEPTS

I have selected the principles Gee calls "Co-Design," "Manipulation and Sequencing," and "Situated Meaning"

1.

USER EMPOWERMENT THROUGH CO-DESIGN

This vividly reminds me of a game called NHL '94
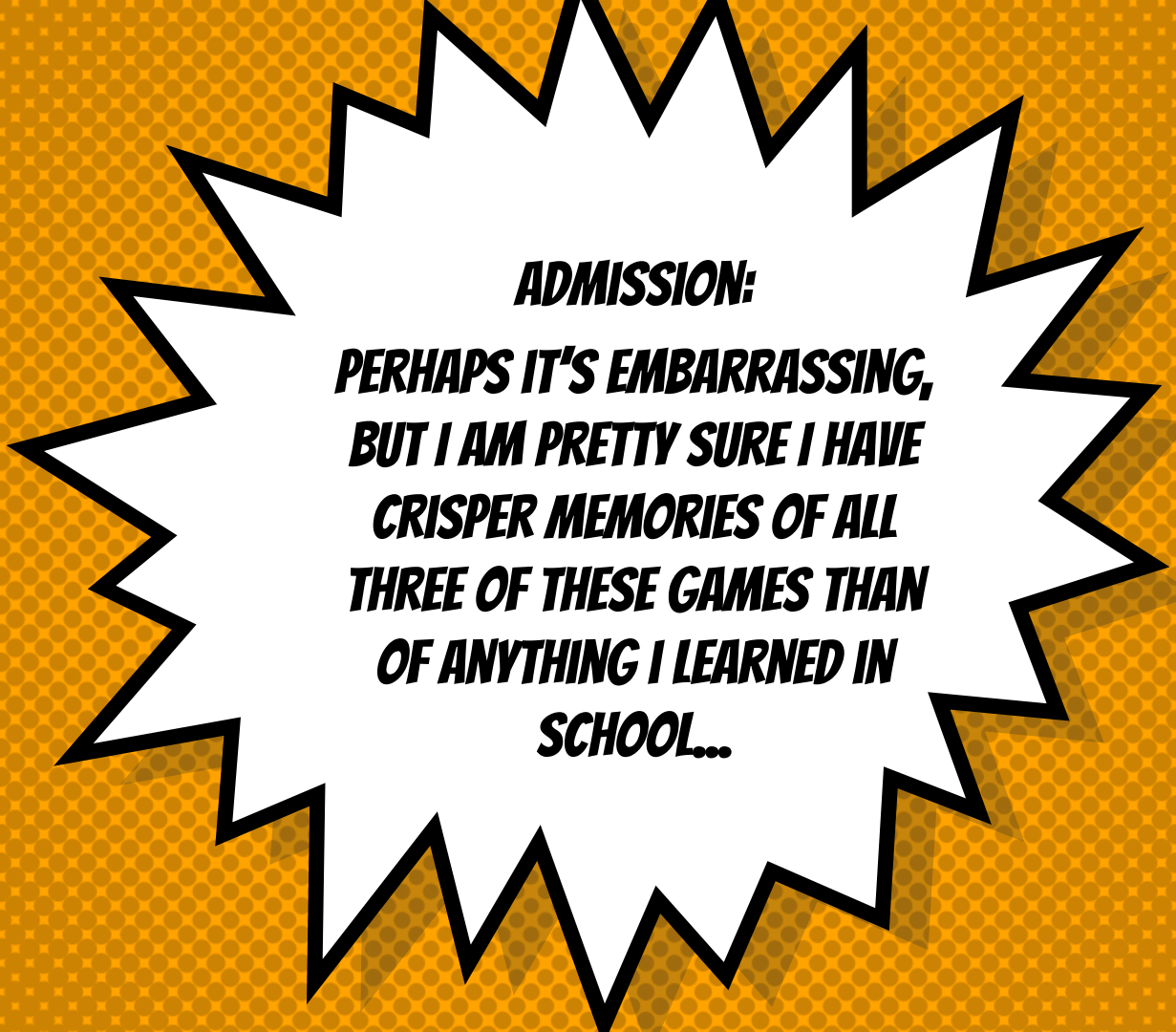
2.

MANIPULATION AND SEQUENCING

This is actually two principles, but both are beautifully present in one of the ultimate classics: Super Mario Bros. I

3.

SITUATED MEANING

Takes me back to another ultimate classic: Tetris

ADMISSION:

PERHAPS IT'S EMBARRASSING, BUT I AM PRETTY SURE I HAVE CRISPER MEMORIES OF ALL THREE OF THESE GAMES THAN OF ANYTHING I LEARNED IN SCHOOL...

NO REASON TO FEEL SILLY!

Games use great design principles to draw in and engage players while the design of learning resources typically doesn't (or at least didn't unitl OLTD came on the scene).

WHAT IS THE CO-DESIGN PRINCIPLE, AND HOW DOES IT NHL '94 EMPLOY IT?

What is Co-Design?

- × This means the user gets to make choices with outcomes that affect the result of the game
- × In other words they "co-design" each occurence of the game
- × As a learner/gamer you must be made to feel like what you do matters to become truly engaged

In NHL '94...

- You make choices from the moment you choose a team, to the unique sequence of "moves" you use in every game, to being able to create avatars of yourself
- You "personalize" game play even further by choosing to play in head to head 2-player mode, so your wits are matched with a friend's
- These smart design features result in a very deep connection to the game play process. They are a good example to anybody designing any system in which user-engagement is key

WHY COULDN'T SCHOOL HAVE BEEN LIKE THIS?

The idea of personalization appeals to me personally. I also recently had an experience in school where I used a choose your own path World War I game as the core of a lesson. More than one student in my class said they like "learning like this."

I definitely get a highly engaged feeling when I have more agency in a task and am less of a passive receiver of information.

Image used without permission, retrieved from:
http://puckjunk.com/category/culture/video-games/

WHAT ARE MANIPULATION AND SEQUENCING AND HOW DOES SUPER MARIO BROS. EMPLOY THEM?

Manipulation is...

- × A game feature where you develop a physical feeling connection to a game avatar
- × In other words the controls are so fine that you come to feel that you ARE the avatar

Sequencing means...

- × The game starts easy allowing the player to gain basic skills, then ramps up the difficulty in just the right proportion level–by level

This is an old, wonderfully simple game...

- × Run, jump, shoot in a nice rhythm is all you really need to succeed
- × The extremely responsive controls that are possible in such a simple side–scroller are a fine example of manipulation
- × Every so often the game throws a new skill at you...like swimming, or navigating a maze
- × By the time you get to these new skills you've been through enough levels to have to original run, jump shoot down pat, so learning new skills is fun

SEQUENCING IS KEY TO BUILDING UP CONFIDENCE!

As Jo Boaler notes in many places on her You Cubed math teaching website...

Students need to develop a growth mindset to become good learners in any subject, meaning they have to see mistakes as a helpful part of learning.

Students can't develop confidence for this if they are working on problems that are too easy or too hard.

Image grabbed without permission from the You Cubed Vimeo channel: https://vimeo.com/user20989575

WHAT IS SITUATED MEANING, AND WHERE WITHIN TETRIS WOULD ONE FIND IT SITUATED?

Meaning as action:

- × In schools students are given a lot of words, often not attached to any activity they get to do with their hands
- × Words have situated meaning when you actually get to practice the actions that they describe
- × The meaning is situated in the activity

In Tetris…

- × The object of this game is puzzle solving
- × As you play all you do is practice puzzle solving
- × The puzzles you solve are highly visual, and the way you solve them requires you to hone hand to eye coordination
- × In other words, the meaning of this game, solving visual puzzles, is situated in every moment of game play
- × You never have to listen to a long set of directions to get you to the next level, you literally just solve puzzles!

YOU NEED TO SPEND TIME DOING PROCESSES, NOT BEING TOLD HOW TO "BE GOOD" AT THEM!

One of my favorite education theory writers, Dylan Wiliam of "Working Inside the Black Box" fame, reminds us that to achieve true understandings, not just memorizations, students need...

To be able to develop self–esteem by getting clear feedback about their performance on objectives they have actually practiced.

Students need to spend time doing, not talking about

Image stolen from this Kiwi website (what a country, also produced Hattie!): http://assessment.tki.org.nz/Research-and-readings/Assessment-for-learning/Black-box-articles

BEFORE I LEAVE YOU TO YOUR OWN CONTEMPLATIONS ON THIS...

I GOT TO THINKING ABOUT THIS MYSELF LAST WEEK...

I actually tried delivering a "*Game-Based*" lesson in my Socials 10 class.

I found a *COTS* (well, actually more of a *GOTS, or Government Off the Shelf*) game made by the Canadian War Museum.

The game involves playing through a Choose Your Own Adventure style story in the avatar of a Canadian soldier of the Great War.

I had students write a diary entry in the persona of this soldier after playing.

https://www.warmuseum.ca/overthetop/
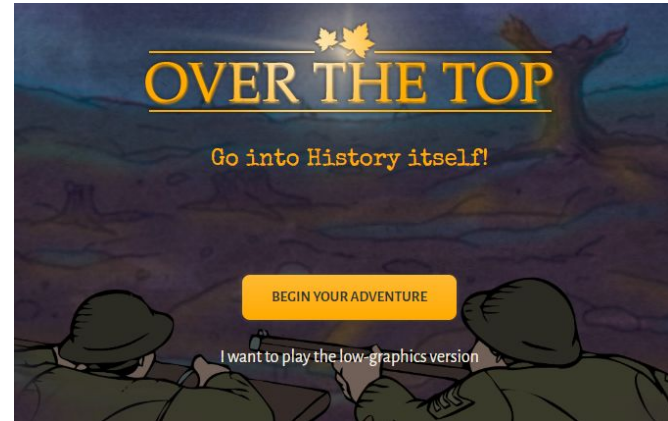
IN MY OPINION...

It felt like a very successful lesson...
- Students seemed very engaged
- Students also commented that they were enjoying playing
- Students asked me A LOT of vocabulary questions, I would say many more than typical of a reading, research or lecture based learning exercise
- Students played over and over again to see if they could "survive" their day as a soldier in the trenches
- Some students literally said these words: "I like learning like this."

I would certainly try using a *Serious Game* of this type again. In fact, this experience made me wonder if there are tools out there in the inter-web that allow the user to create interactive animation sequences, so a teacher could create their own *Game-Based* lessons!

OLTD LIFE (TEACHING) LESSONS...

Another area of my own teaching I know I could improve is in the timely provision of effective feedback, and in the push for getting my students to self-evaluate.

I think I have a great plan for this using a process I've learned about in OLTD:

Gamification!

I really like the Point Tracker systems we've seen in the program for this purpose. Now the only question for me is, because my current district are dumping Google Education Suite in favour of Microsoft OS 365 next year, what tool will work as well as a Google Sheet to do this!

THANKS!

Any questions?

You can email me at matthew.moore@gsuite.viu.ca

Please see my references on the final slide after this one…

REFERENCES!

James Paul Gee Video

https://www.youtube.com/watch?v=4aQAgAjTozk

Definitions Sources

http://www.hisocial.com/eng/blog/gamification-vs--serious--games--vs--simulation--vs--games--vs/

http://minkhollow.ca/beckerblog/2014/08/09/comparing-gamification-serious-games-and-simulations/

https://www.designingdigitally.com/blog/2017/04/gamification-serious-games-and-simulations-differences

https://elearninginfographics.com/games-vs-game-based-learning-vs-gamification-infographic/

https://g2g3.com/blog/the-difference-between-gamification-simulations-serious-games/

https://searchdatacenter.techtarget.com/definition/COTS-MOTS-GOTS-and-NOTS

https://link.springer.com/chapter/10.1007/978-3-319-12223-6_4

Academic Articles and Sites:

Jo Boaler Resources:
https://muckrack.com/jo-boaler/articles

https://www.youcubed.org/

Dylan Wiliam Resrouces:
https://jaymctighe.com/wp-content/uploads/2011/04/Working-Inside-the-Black-Box.pdf

https://www.rdc.udel.edu/wp-content/uploads/2015/04/InsideBlackBox.pdf