Assignment #4 – Games and Learning

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Part A: Schools vs. Games

Comparing traditional schools and videogames is a bit of a challenge. On the one hand, there is so much that can be taught using a videogame that is already taught in the traditional school– collaboration, problem solving, self-directed learning based on interest, goal setting and planning to achieve goals. However, some of the biggest elements that are missing in the traditional school setting is student interest and engagement and the ability to reach every learner. I have been teaching using mobile devices for over three years now and the instant buy in and engagement when you use technology is irrefutable. Students use these devices constantly in their personal lives and want to be able to leverage them in their learning as well. They know how to research and find the information they need, so want to employ that in their learning. Video games are not too much of a stretch from this principle – many of today's students have spent countless hours playing video games by the time they reach high school. Jane McGonigal's cites studies in her TED talk "Gaming can make a better world" that concluded that mastery comes with 10,000 hours of practice – a statistic that matches the amount of time many gamers play during their adolescence. Now, not every learner is a gamer, but games can be accessible to every learner. They can also be used to

reach more learners at their level to provide just in time learning situations that can help them build deeper understandings of subjects they study. In traditional schools we use games like Blokus or crib to reinforce the development of strategy skills or counting and keeping score. I've played Yahtzee with kids for years at lunch on inside days in order to support their understandings of basic math concepts and improve those skills in a fun way. Bringing video games into school is simply using an existing practice and today's technology to achieve the same goals. Fun learning is engaged learning and will often foster deeper understandings for our students.

There are a number of further ways that traditional schools differ from video game environments that are discussed by James Paul Gee in his video presentation "13 Principles on how games create learning." A few in particular struck a chord with me in my understandings.

1) Feedback   –

In the traditional school setting feedback is not typically instantaneous. For the most part, students will work through a variety of assignments and activities on a given theme, getting an understanding of if they are on the right track based on their marks for the assignments. However, these marks do not necessarily provide a good indication of whether they fully understand the topic at hand. Then when it comes to test time and students are required to show how much information they remember or how much of their knowledge they can apply to new and novel situations, they gain further feedback on their understanding – again - in terms of the mark that they achieve. At this point, it's often too late to go back and fill in the blanks or correct

misunderstandings. Think in terms of a final exam for a high school English or Math course – you kind of get it or you don't and the exam mark is the measurement of the level of how much you 'got.' On a greater scale, reporting periods happen three times a year in my school. Three report cards – one in December, again in March and then in June. Though many students track their marks throughout the term, parents may only be given feedback on their child's progress once every few months. This makes it difficult to adjust or fine tune learning activities to ensure understanding.

Now, this is not to say that teachers aren't constantly assessing and re-assessing their students, forming opinions on what worked and what didn't and reteaching elements that are missing for some or most of their students. But with 28 students (or more) in a class, it's impossible for the teacher to sit beside each one as they work their way through their math work and encourage and guide them along, and often it isn't until they hand a math sheet full of incorrect answers (where bad habits or misunderstandings may have already been formed, practiced and partially cemented into their understanding) that we can recognize the problem. By then it can be difficult to go back and fix those misunderstandings – in other words, it's often too late to fix the situation once you've failed the unit test.

Compare this against a video game. Just tonight I was watching my teenage son play Dark Souls II. As he worked his way through varying areas of the game he was given numerous opportunities


to get instant feedback on how different approaches would work. First, he was able to see shadows of other players in the same area and learn from how they played ways to beat a boss, how to find a secret area that might contain an object he wanted, what he had to do to unlock a secret passageway, etc. Not only could he see others succeed or fail, but he was able to try things to see if they worked and if they didn't (for instance – 'You died'), he was able to reanimate from a point in the not too distant past of his game and try again. He was also able to collaborate with other players (either on the game or via his phone) to say, "I'm trying this, it's not working – how do I get this to happen for me?" Friends – and even perhaps people he doesn't know (via forums, chat rooms and videos) are instantly able to jump in and help and give him feedback about how to work around his problem. Further, the video game led him through parts of the level with prompts or information that could be valuable to what he was doing. Previously watching him play Red Dead Redemption, I marveled how there was an arrow on the screen showing him the path that he needed to follow, advising him to turn around if he got too far off the beaten path and providing updates on his 'mission' so that he could stick to the plan. These are great examples of instant feedback that drew him through the game, allowed him to branch off and do some extra's or explore some different areas, but generally kept him on track to finish the objective.

2) Customization

In the traditional classroom we are all about differentiation. Allowing students to access different resources to gather information (text, videos, audio recordings, websites, etc.), allowing them to use a computer, iPad or pen and paper to gather their information and reflect on it and then allowing them choice in how they present evidence of their own learning is a major part of my classroom. Heck, students are even able to choose topics for self-directed learning projects. I understand that not all students learn the same way and that many students have creative strengths and life experiences that can allow them to look at information in alternative ways. However, differentiation in the classroom can only go so far. As a teacher I have to try to reach as many of my students as I can and I can't reasonably be expected to be assessing a vast range of types of projects my students have created. In that way, for logistical reasons, the experience has fairly similar tones for all learners. We try to work to students strengths and weaknesses, but for the most part students in the same class have a similar experience in their learning to their peers.

This is not so in a video game where each individual player can have a completely different experience to their peers. Some might choose to play the game in a linear fashion, working through each level in order and achieving level ups one after the other, while others might want to explore a specific area of the game or make modifications to it to achieve their own goals. Some gamers might be more interested in playing collaboratively with their friends to fight 'the boss' while others might want to play solo in campaign mode and just enjoy the experience. There is huge opportunity to customize the experience for the gamer. In educational games this comes in the form of being able to set difficulty levels or starting points for different students and allowing them the time to work through the levels at their own pace. Students can choose to 'play' by reading and answering questions to achieve goals, watch videos and choose the right options or simply by following a path of their choosing to gather information about a topic. At a higher level, students can also choose what sorts of educational games to play. A game like Civilizations could allow them to gain a deeper understanding of ancient civilizations, whereas a game like Rollercoaster Tycoon could help them learn about engineering concepts and the economics of building amusement parks. Throw in the ability to customize characters as players want and the differentiation just gets more and more involved. As Gee states, games are a safe environment for gamers to make mistakes and learn from them rather than experiencing these mistakes in the real world where costs and consequences could be quite a bit more severe.
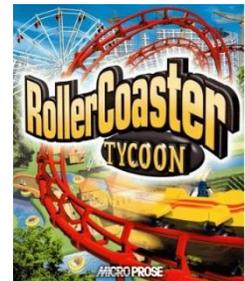
3) Pleasantly frustrating

I loved the analogy that Gee used that video games can be 'pleasantly frustrating' for learners, not too hard that the quest seems impossible, yet not too easy that students feel they are bored and wasting their time trying to work their way through mundane levels. The information provided allows them to understand how to go about achieving a 'level-up' and each level builds upon the lessons learned in previous ones. I play on an app called Quell which is a strategy game that adds in tougher and tougher elements with each level. As you get used to one element,

another is added and you have to adapt your game play to account for it. The levels are still easy to pass, but in order to get full points you have to strategize to complete them with the fewest moves possible. It allows me to be intrigued by what's coming, but not so frustrated that I give up and throw my iPhone against the wall. In the end I'm learning strategies to apply to new situations and working out patterns and associations in my brain.

Unfortunately, this does not happen a lot in schools. In my experience as a teacher, and as a student, often times materials are either too hard or too easy for students in the class. They become frustrated and give up because they become overwhelmed with the amount of what they don't know or don't understand and give up on even trying because they are afraid to fail. Though sometimes we feel, as teachers, that we effectively outline the step by step ways to work through a problem, students lose focus when they first realize they don't know what we are talking about, and then the entire lesson is lost because they are more concerned with the fact that they are lost and are probably the only ones who don't know what's going on and then they become less and less focused on listening to learn.

A big problem with our school system is that students are expected to learn things, retain them and then not revisit them until they do a similar unit the following year. With simple 'rote' memorization, retention is not there and then even if they know the information, they are not ready to face the situation and learn the next element of it that is introduced. Whereas video games introduce the element and then practice, practice, practice it before moving onto the next level, in school we introduce the topic, practice it and then move on to an entirely different concept, not necessarily building upon it again until the next year. I'm thinking mostly in terms of math, where we will have a common theme of practicing basic skills and concepts the entire year, but things like geometry are covered in one or two units per year per grade and not necessarily specifically mentioned or covered until those units are being worked through.

4) Information just in time or on demand

One element of game play that I find crucially important is that as you work your way through levels you are given information specific to your next challenge that will help you get where you need to go or locate items that you need to find. Another game (sorry, these are all games that

my son plays!) that comes to mind is the Fallout series. As your character moves through 'missions' collecting items and meeting specific people, you collect different artifacts that may or may not help you later in the game, depending on the choices that you make. However, if you find yourself in a situation that you need specific information, you can pull out the log book you found or access the map or find the cryptic coded note that you traded for that might give you the combination to unlock a key aspect of the game. In this way, you gain information that you need when you need it. You can also be fed factual information while the next level is loading or little tidbits that can help you further in the game, preparing you for what comes next.

In school, we provide all sorts of information on a variety of topics throughout the school year. Though some information could be seen as on demand – here is our weekly problem, let's find out how we are going to solve it – most of the curriculum is set by the government and constricts what we need to teach and what students need to know. In grade 6 we learn about extreme environments in science – not because we will be exploring a volcano next week or will one day be shooting off to Mars. But because the curriculum states that that is what we learn in Grade 6 science. Much of our information is gained through reading through texts or books and if a student has a question that is not covered in the text – we can't always come up with the answer right away.

I will admit that using technology in the classroom allows us to find information on demand when we need to and this is a great step forward for the current educational system, however, it will take some time before all educators are on the same page in how they use technology in the classroom to further student learning.

Traditionally we prepare students for what they will need later in life, not what interests them right at this moment, and often the information that they need is not available to them at crucial times like when they are doing a test or assessment.

5) Skills as Strategies

This in some ways leads into an idea of Skills as Strategies, or as I like to call it in my classroom – real world relevance. When I was in grade 10, my math teacher had a poster on the wall of all sorts of math concepts that we covered in high school math and where in the 'real world' we would need those skills or understandings. I have searched for years to find one like it because it gave me a sense of value and purpose in my own learning. I think that often times in school we lose sight of why we are teaching specific things.

For instance, the curriculum says to cover Order of Operations, so we do. But I like to give my students that sense of why. Here is the big picture: in the real world, you won't necessarily need to use the order of operations in your day to day life, though to figure out certain things like how many pieces of pizza to order and what size cake you'll need for your child's birthday party, things like that might come in to play. But the most common place you will find order of operations questions is in sweepstakes, because if a company can find a way to say 'we have a winner,' without having to pay out any prizes….well, it's a win-win situation for them. So, as I tell my class - you gotta be smarter than that and you have to understand how to use BEDMAS so that you can win a house, win a car! (point of interest - on our unit test for that unit I always include a long and complex order of operations question as a bonus mark on the test. For those students who do get it right, I go to Superstore and buy a whole bunch of hot wheels and we do a big prize giveaway the next day – very motivating and fun for the students who then get a toy to play with in class for the day!).

I work very hard to give my students an understanding of where they will use specific skills later in life and give them the 'big picture' in terms of where their learning will take them and what

they need to know to be able to do the next thing and move forward to find success. But as I said in the last part, our curriculum is designed in such a way that so much is distinct from other things and you need to learn about this now because 'one day you might need it.' Without a sense of necessity, it's hard to convince the kids that it's important to focus on the lesson at hand. Seriously – am I going to run a race this week? Then why do I need to train? To a kids brain, it just doesn't compute.

Where video games have a leg up in this is that in starting a game, you know that the overall reason to start the game is also to finish it. You are building knowledge and skills that will allow you to work through all the levels and achieve all the goals in order to finally complete the 'adventure' or game. There are a lot of steps involved in that, like learning how to move around in the environment and what sorts of things are important to collect and what is just fluff. What sorts of things you have to do before you can move over here and work on this achievement, too. Skills are introduced, practiced and then employed in a way that allows the gamer to complete certain aspects of the learning while working to accomplish an end goal all around. Unless it's a non-linear game where you can mod and play alternate challenges just for fun, there is a succinct beginning and end to each game and, though there are many ways to work towards the end goal, there are always sub-goals that you must achieve in order to reach the cut scene that sums it all up.

There are many other connections that I made while watching Gee's video, but these are the ones that made the most sense to me in my own teaching and learning. And that's not to say that video games are perfect and should be employed to great service in schools right now. But there is a place for them in today's classroom to motivate students and reach every learner and allow everyone to show progression in their learning and find success. The use of them should at least be explored in the classroom in order to determine their efficacy and worth.

Part B: Using videogames in the classroom

"Videogames have a lot to offer and should be used and leveraged in classrooms in order to help teach students."

In looking at this quote I thought I had better check with an expert, so I went to talk to my 17 year old son. He's been a gamer most of his life (I still remember coming home from work one night when he was only six months old and there he was propped up on the couch, happy as a clam, between my brother and my husband as they were playing some Playstation game or another…..in that way I guess he was always going to be a gamer). I asked him what he thought of the potential for using games in the classroom to improve student learning and he replied that he felt if school were more game-like it would definitely help some people focus their attention better. Whereas games are engaging, exciting, challenging and fun, school….well….isn't.

I think by the time you reach grade 12 (where he is currently in school), you are really engaged and active in your own learning, or you are simply trying to just finish school and be free of it all. Are videogames the answer? The reason kids will stay in school and be engaged and entertained while doing so? No, not in the least. But could they be used to maintain an element of the school population and carry them

through? Certainly. As I said in the beginning, not every kid is a gamer, but make learning fun, interactive, challenging and unique to each student and every kid will be willing to play the game.

'A Theory of Fun' was quite an interesting view and I appreciated a number of the sentiments that came across in it. One that I keyed into was that our brain tries to find patterns in games and make everything fit within a nice little expected routine. "In the real world, we call this 'security' and 'steady jobs' and 'sensible shoes' and 'routine.'" Though our brains seek to understand and try to make things predictable, these same intriguing aspects then become boring and routine. I'm all about sensible shoes and comfort and ease….but I also have to admit that I have this pair of boots that I got in Poland that I absolutely adore. They are high heeled and uncomfortable for long periods of time (they squish my toes) and they aren't great in the snow or rain…….but damn they are nice and they make me feel confident and cool when I wear them. Sometimes we need routine, patterns, security and safety…..and sometimes we need to live a little.

Video games allow us to live a little, to break free of the routine of our life and challenge ourselves on a level that we can't in the real world. They provide us with a safe environment in which to experiment, explore, win, fail, try different approaches and 'master the pattern.' Not only are they a break from the routine, but they challenge us to act differently as we progress through a game, to adapt how we attack a problem. Once we've figured out the pattern of how to defeat the boss, if that works with the next boss that gets boring and we won't bother continuing because it's always just the same. I remember the days playing Crash Bandicoot and getting so frustrated at it 'not working' for me because I wanted to do things a certain way and the game just didn't work that way. It wanted to challenge me to adapt my understandings and do things in a different way, but I was stubborn and wanted it to work the old way. This also speaks to the 'pleasantly frustrating' principle in Jim Gee's video, which that game was definitely not for me….it was just plain frustrating! Typically, though, games are like a good movie – just when you think you are coming to the satisfying end of a 'chapter' or level, they taunt you with a cliffhanger and you just have to move on to the next level in order to see what's going to happen!
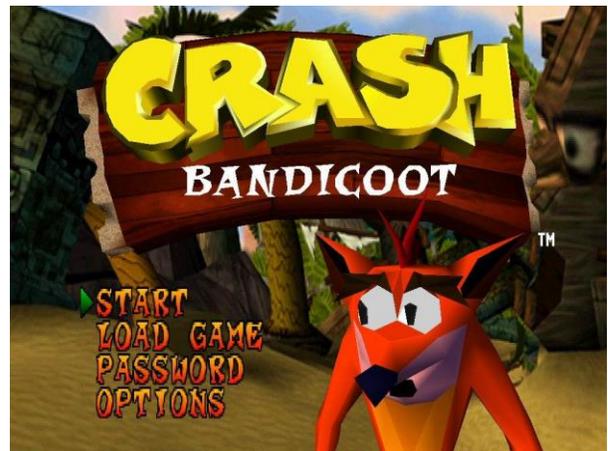
In '7 Ways that games reward the brain,' Tom Chatfield notes that there are some really cool aspects to games that could be used in education. One of the points he made was that in games, experience bars measure progress. I loved this idea as a way to track student progress. I'm just not really sure how we could implement it in the classroom without technology (or with it for that matter). In OLTD509, Avi implemented a 500 point system (a similar tracking in XP is in place for assignments in this course). For every post or communication we made we earned a certain number of points that we were required to track as we went along. In the end, we were required to achieve at least 500 points, though many of us achieved far larger numbers than 500 (in fact, I stopped counting at 1155!!). I found this tracking to be hugely motivational and noted that it added an aspect of challenge and fun to completing each assignment. I've since instituted it in my own classroom as a motivator for my students completing their novel studies.

Chatfield also talked about having continual rewards for effort – giving students credit for trying and constant motivation to keep going, however minor it might be. Often times in the classroom I forget that a kind word of encouragement can go a far, far way. I think that games, however, reinforce this in constantly giving the player a bonus 'find' or a level-up or unlocking an achievement for seemingly endless numbers of reasons. You went the right direction – well done! You chose the right card – you win this round! You saved the girl – mission accomplished! You picked the lock – found a health kit! There are constant motivating factors built into these games that are almost addicting for the players because they just want to keep going to see what they can get next. The fact that they are random and are not the same for every player or every time you play the game is also motivational because you want to play the game more to see what kinds of different combinations come up, or be able to brag to your friends that you got something amazing when you played the game last! The element of not knowing what you are going to get makes you keep coming back for more. If only it were that easy in school – make it so amazingly intriguing that kids want to keep coming back for more. (okay, that already works with some….but definitely not with everyone!).

Finally, I have to say that I thoroughly enjoy listening to Jane McGonigal speak. She is excited and upbeat, she's a girl gamer (though statistics say that an increasingly high number of girls are gamers, boys still hold the market and it's so impressive to see someone so impassioned speaking about gaming being a girl – it doesn't fit the stereotype in my head, yet, but it's awesome). Jane talks to many reasons why games can make a huge difference in education, namely the exciting sense of enthusiasm and optimism gamers hold for the game, how they will work incredibly hard with amazing focus and collaborate with hundreds, maybe even thousands of other people to achieve a common goal. She hones in on these key aspects of collaboration and collective intelligence as being the future of the workforce – and how amazing could that be – and notes that we need to bring these elements into today's school in order to unlock the amazing potential of this generation of gamers. She also speaks to the fact that games are a safe place to try things and fail without severe consequence, which can help students to build deeper understandings of how the world works based on their experiences in the game. I do think she speaks a lot to the what, but not necessarily the how, but I'm interested to follow her more as she leads us into incorporating more game play in the classroom.

Part C: Educational vs. Commercial games

Kind of like a rectangle can be a square but a square can't be a rectangle, commercial video games can be educational but can educational games become commercial? The reason for a lot of the lure of commercial video games comes from the entertainment value that they provide in terms of satisfying our innate needs for conflict, competition and dominance. Video games like Grand Theft Auto, Left for Dead, even Halo fulfill these needs for a vast array of gamers in a safe environment with little tangible consequence (aside from the loss of an entire weekend or night's sleep). Unfortunately the very factors that give these games their allure are not appropriate for educational uses.

On the other side of that coin, educational games are often seen as less involved or advanced as these commercial games (from which the companies make the most money) and are fun, but not intriguing or challenging enough to maintain a wide user base. Kids thrive on the challenge of killing the big boss, but killing isn't okay in school….so where does that leave us? We need to find some sort of middle ground.

I've provided a number of examples of commercial games here (Dark Souls II, Red Dead Redemption, etc) just because that is the majority of my own personal experience being as I have a 17 year old son who is

a gamer. This is not to say that there is nothing educational in these games (my son was quite proud in Grade 9 science to be the only one who knew what Amber was, a knowledge he attributes to having played Halo, I believe). Other games he's played, for instance Assassin's Creed, though not savoury in terms of the sorts of missions one is supposed to carry out, actually have a number of historical references, scenes and information built into the game – so students may be building a deeper understanding of history or the world around them as they walk the streets of Venice looking for their target.

Also, you could look at a game like Civilizations, a commercial game that could also be seen as having educational components seeing as students are learning factual information about battle strategies, designing and building 'civilizations' based on resources available and how they can make their civilization more healthy and profitable and less likely to meet an early demise. The Sims series also have elements of learning built into them, too. Okay, really elements of Halo could be seen as educational – I mean you are collaborating and problem solving, communicating effectively and developing fine motor skills – they could all be both somewhat educational and commercial at the same time.

Resources

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