

The Principles of Gaming

James Paul Gee, a professor at Arizona State University, in his video entitled [“Principles of Gaming”](#), speaks about how good video games can create ‘good’ effective learning. Gee (2013) states, “Games teach people problems and how to become good learners”. He discusses a set of 13 principles he has derived as good learning principles (Gee’s video outlines 13 principles, but Gee actually derives 36 principles from his study of learning that occurs as game players encounter and master new serious games – these are outlined in his book entitled, *What Video Games Have to Teach Us about Learning and Literacy*) used by games to “hook people on learning and engage them for the long haul” (Gee, 2013). These principles are divided into three categories: 1) *empowered learners* - learners need to choose to learn, and they need to feel what they do will matter or be good for them, 2) *problem-based learning* - serious games use principles of good problem-based learning - Gee notes this is highly important, as effective world citizens need to be able to solve problems, 3) *deep understanding* - serious games can create deep understanding that lasts a lifetime and fosters future learning. Although these three categories warrant a lengthy discussion, for the purpose of this assignment I will choose to describe only **three of the thirteen principles** outlined in Gee’s video that appeal to me as a learner (see [here](#) for a complete list of Gee’s principles, as outlined in his book).

1. Customization Principle

The *Customization Principle*, from the category of *Empowered Learners*, is a design principle that I feel is crucial to learning and good game design. In a recent [Google+ Post, A conversation with two former male students \(ages 24 and 26\) who love to game](#), I initiated a discussion thread (based on student feedback, and added to by others) which seems to support the need for learners to be able to customize their learning experience and to feel that what they

do matters. Serious games should allow learners to solve problems in different ways. As Gee states, there are different types of players and different types of learners, so if there isn't a way to customize the experience to an individual's learning style, it lowers the learner's sense of agency – learners need to feel what they do matters.

A sense of agency means that students feel they control their own destiny and that their choices matter. The video *Gamifying Education* (Extra Credits, 2012) notes that without agency, it is almost impossible for students to feel motivated as they lack long-term goals. Furthermore, a sense of agency is said to contribute to resilience, and students who have a sense of agency tend to do better when things don't go their way; they just start working towards their goals again, rather than giving up or being deterred. Therefore, it is felt that games can impart agency, as they can give students the sense of being able to control their future. Students can make choices and therefore control the outcomes of these choices. It is said that this reinforces the idea that "life isn't something that just happens to you" (Extra Credits, 2012). As Gee notes, good games allow you to solve problems in different ways: to customize difficulty levels, to use different strategies, and to try new styles or approaches to problem solving. Gee (2013) states good games encourage learners to try new things "where the cost of failure is low"; the learner may even become a new type of learner. My own experience has taught me how powerful a sense of agency is, and I have found that whenever options of customization exist, I tend to be more invested in my own learning - definitely a win!

2. Identity Principle

The second principle I feel is important in good game design is the *Identity Principle* (again from the *Empowered Learners* category). Gee describes the *Identity Principle* in his book, *What Video Games Have to Teach Us about Learning and Literacy*, by stating:

Learning involves taking on and playing with identities in such a way that the learner has real choices (in developing the virtual identity) and ample opportunity to meditate on the relationship between new identities and old ones. There is a tripartite play of identities as learners relate, and reflect on, their multiple real-world identities, a virtual identity, and a projective identity.

[\(GMU, n.d., n.p.\)](#)

Gee notes that schools often forget about the *Identity Principle*, which addresses questions such as: Why should I learn this? Who uses this, and what do they do with it? What will I get if I do this and learn this, or who am I going to be? Gee comments that games are good at creating a sense of identity, and they give you a sense of who you are going to be by taking on new roles – learners can try out new scenarios, strategies, and skills. Games show the learner new goals and possibilities. As Gee notes (2013), learning should be “an invitation to become a new type of person” or to try on a new identity. After all, how do we know who we want to be, if we don’t consider the possibilities? Games can allow for this journey of self-discovery in a safe environment, where actions and scenarios can be replayed for desirable outcomes. Thus, game playing can promote flexibility and the ability to adjust to different social and emotional goals, “teaching players the benefits of dealing with frustration and anxiety in adaptive ways” (Granic, Lobel, & Engels, 2014, p.72), by offering opportunities to switch among avatars and take on different roles... Shouldn’t we all have the opportunity to readjust and change, in order to find the ‘right fit’, at a given place and time?

3. Pleasantly Frustrating Principle

One of the Principles that Gee states is necessary for good game design, and which falls under the category of *Problem-Solving* and how to make *Problem-Solving* successful, is the *Pleasantly Frustrating Principle*. Gee (2013) states, “learning is at its best when it is pleasantly

frustrating”, meaning that a problem leads to good learning when there is a challenge and you feel accomplishment from solving it. For example, the challenge is not overly frustrating and stressful, because you know that if you work at it you can solve it. Gee (2013) comments that “keeping your problem at the cutting edge of what some people call your *Regime of Competence*” challenges you, but you accomplish problem-solving. Gee notes this type of problem results in a phenomenon called *Flow*. VIU instructor Avi Luxenburg explains [Flow](#) in his video “*The Flow Experience in Education*” (2011) as being focused play; you are not aware of what is going on around you. Luxenburg cites the research of Mihaly Csikszentmihalyi that finds people are at their happiest when they are in optimal experiences, known as Flow – i.e., when one loses track of time while being so engaged in play.

I would argue that the *Pleasantly Frustrating Principle* also leads towards deeper learning in that deeper learning requires productive struggle (I suspect *pleasantly frustrating* experiences are the precursors of, or perhaps occur simultaneously to, productive struggle). In the video [Challenge at the Heart of Deeper Learning](#) from The Teaching Channel, students and educators speak about deeper learning and struggle. The video shows students struggling with challenging text and tasks to push their thinking deeper. It is noted that students and teachers must be comfortable with ambiguity, messiness, and struggle, as these are the prerequisites for deeper learning. I feel this struggle also applies to effective problem solving, and I believe *pleasantly frustrating* experiences that are successful tie into a *Growth Mindset*.

As noted in a blog post I wrote:

Carol Dweck (2014), a professor of psychology at Stanford University, states in her video [Struggle](#) that Growth Mindset converges with deeper learning ...(and) as Salman Khan (2014) states in his video [You Can Learn Anything](#), “each wrong answer will make your brain a little bit stronger”, as intelligence is not fixed (neural connections can be formed and deepened). Dweck goes on to

comment that research indicates that students who learn Growth Mindset earn higher grades than those in control groups. The emphasis is on struggle... With a Growth Mindset, students learn to be proud of struggling with messy, frustrating, confusing problems, and they thereby learn that failure is part of the process through which they learn. Failure is a motivational part of learning; students are interested in their mistakes, and this leads to deeper learning.

Students with a Growth Mindset and who have been exposed to *pleasantly frustrating* experiences are said to demonstrate a sense of purpose; they feel they can contribute to society and are ready to tackle the challenge of an uncertain future. Therefore, as Gee states and as noted in an eLearning Industry post (2012), games must be challenging, but “neither so easy nor extremely difficult”... Otherwise, engagement will not occur, and you will lose the learner and the learning outcomes will not be met.

Conclusion

Although Gee has broken down the elements of good game design into separate principles that work toward building success, ultimately it is the integrated experience that really matters, where these principles work together seamlessly to bring about the desired learning outcomes. If a game is designed in a disjointed or disconnected manner, the learner’s journey, I suspect, will also mirror this, and engagement and success at meeting goals will not be achieved. As New Media Awards notes, all games are not created equal. We usually abandon the games that let us down with respect to learning. An effective game-based learning environment allows us to:

...Work toward a goal, choosing actions and experiencing the consequences of those actions along the way. We make mistakes in a risk-free setting, and through experimentation, we actively learn and practice the right way to do things. This keeps us highly engaged in practicing behaviors and thought processes that we can easily transfer from the simulated environment to real life. (Trybus, J., n.d., para. 8)

Perhaps the ability to transfer one's learning and skills to the real-world context is ultimately the truest test of a game's success at meeting the intentioned learning outcomes. Well-designed games enable learning experiences in safe, low-risk environments, in ways that might not be possible in real life. Can the measure of a game's success be the ability to apply "the right knowledge at the right time", in both the game and real world (Trybus, J., n.d., para. 16)?

References

- EduRate. (n.d.). Edurating for Teachers & Net Gen Learners [Wiki]. Retrieved March 14, 2016, from <http://edurate.wikidot.com/the-36-learning-principles>
- eLearning Industry. (2012, December 4). Why is gaming so important to Learning success? [Blog post]. Retrieved March 11, 2016, from <http://elearningindustry.com/7-tips-game-based-learning>
- Extra Credits. (2012, May 13). "*Gamifying Education*" [Video]. Retrieved February 7, 2016, from https://youtu.be/MuDLw1zIc94?list=PLhyKYa0YJ_5BIUqSDPmfBuKjTN2QBv9wI
- Gee, J. P. (2013, November 13). "*Jim Gee Principles on Gaming*" [Video]. Retrieved March 14, 2016, from <https://youtu.be/4aQAgAjTozk>
- GMU (n.d.). Learning Principles. Retrieved March 19, 2016, from <http://mason.gmu.edu/~lsmithg/jamespaulgee2print.html> Drawn from Gee, J. P. (2003).

What video games have to teach us about literacy and learning. New York: Palgrave Macmillan.

- Granic, I., Lobel, A., & Engels, R. C. (2014). The benefits of playing video games. *American Psychologist*, 69 (1), 66. Retrieved from <https://www.apa.org/pubs/journals/releases/amp-a0034857.pdf>
- Luxenburg, A. (2011, June 17). The Flow Experience in Education 1 [Video]. Retrieved January 16, 2015, from <https://youtu.be/gffdtI6tWHs>
- Luxenburg, A. (2011, June 17). The Flow Experience in Education 2 [Video]. Retrieved January 16, 2015, from <https://youtu.be/K9LDkOfxO3s>
- Olynick, F. (2016). Growth Mindset: Pedagogy or Paradigm? Retrieved March 16, 2016, from <http://fenellalearnsonline.weebly.com/growth-mindset.html>
- Teaching Channel (n.d.). *Deeper Learning Video Series* [Video]. Retrieved February, 2016, from <https://www.teachingchannel.org/videos/deeper-learning-challenges-students-exl#>
- Trybus, J. (n.d.). Game-Based Learning: What it is, Why it Works, and Where it's Going. *New Media Institute*. Retrieved March, 9, 2016, from <http://www.newmedia.org/game-based-learning--what-it-is-why-it-works-and-where-its-going.html>