Gamification of Learning

by David Simmons, P.E. Oct 2014

This paper will discuss the topic of 'Gamification' within the arena of education and learning-transfer focusing on its base history, impact/use on the learning-facilitator/student relationship, and future expansion/use within our own educational goals. Gamification was a term that was first coined in 2003 by Nick Pelling, but did not gain popularity until 2010 (Fitz-Walter, 2013). The Oxford Dictionary defines gamification as:

> *The application of typical elements of game playing (e.g., point scoring, competition with others, rules of play) to other areas of activity, typically as an online marketing technique to encourage engagement with a product or service.*

And the Gartner Blog Network 'redefines' Gamification as "*the use of game mechanics and experience design to digitally engage and motivate people to achieve their goals*" (Burke, 2014).

The WikiPedia entry for Gamification defines it as:

> *..the use of game thinking and game mechanics in non-game contexts to engage users in solving problems. Gamification has been studied and applied in several domains, with some of the main purposes being to engage (improve user engagement, physical exercise, return on investment, flow, data quality, timeliness), teach (in classrooms, the public or at work), entertain (enjoyment, fan loyalty), measure (for recruiting and employee evaluation), and to improve the perceived ease of use of information systems. A review of research on gamification shows that a majority of studies on gamification find positive effects from gamification.*

So while the topic of Gamification is varied and applies differently to various industries, we will constrict our use to environments where the hopes of improved education and learning-transfer are involved.

While it may seem trivial and a time-waste to introduce game play within our educational environments, Kurt Squire quotes from the Massachusetts Institute of Technologies' *Games-to-Teach* website (Squires, 2001) argues that:

> *"The most under-examined potential of games may be their impact as an educational medium. Playing games, I can relive historical eras (as in Pirates!), investigate complex systems like the Earth's chemical & life cycles (SimEarth), govern island nations (Tropico), manage complex industrial empires (Railroad Tycoon), or, indeed, run an entire civilization (Civilization series). Did I forget to mention travel in time to Ancient Greece (Caesar I, II, & III), Rome (Age of Empires I, and II), relive European colonization of the Americas (Colonization), or manage an ant colony, farm, hospital, skyscraper, themepark, zoo, airport, or fast food chain?"*

Aldrich goes on to point out that:

> *When educators use games, they improve upon the traditional education system encouraging students to keep trying even when they lose and practice until they have mastered the content. Students learn at different paces and will achieve mastery at dissimilar times. Through various learning styles, games touch on visual, auditory, and kinesthetic learning styles. By creating an environment that actively encourages peers to teach and learn from each other, collaborative play offers students who have already mastered the elements a chance to become the teacher and instruct their classmates. Games are played because they are fun and offer learners a choice about how and what they learn. Instigating learning through play is easier because games employ artifacts permitting students to feel they are playing instead of wasting time learning irrelevant curriculum (Aldrich, 2009).*

Here is another quite useful way to think about games (Costikyan, 1994):

> *Games provide a set of rules; but the players use them to create their own consequences. It's something like the music of John Case: he wrote themes about which the musicians were expected to improvise. Games are like that; the designer provides the theme, the players the music.*
>
> *A game is a form of art in which participants, termed players, made decisions in order to manage resources through game tokens in the pursuit of a goal.*

The author feels very strongly that while gaming should not be the predominant method/technique for education, gaming has the ability to meet one of Long's '10 philosophical principles that are useful in the knowledge area of principles to practice' in that it encourages 'Learning [can] ~~should~~ be intrinsically motivated as it finds both its source and reward in its own experience." (Long, 2002). It can also fill a role in "prepare[ing] a safe environment that allows learners to take risks without fear of embarrassment." (Dean, 2004) and help to reduce the "…fear[ful] of learning new tasks merely because they have never felt confident as a learner. Helping learners recognize their potential and identify their most effective strategies can create new avenues for many adults who would otherwise never venture into learning situations" (James & Maher, 2004). It does this by allowing the practitioner reduced real-world/life impact by role-playing through the characters of a game. Gaming also includes the ability to have the 'personal touch' by engaging with other students/facilitators and "[i]n order to create a memory, an individual needs to have an emotional involvement to the learning, which causes a chemical reaction in the brain" (Ledoux, 1998). The 'human touch' is further enhanced by "*A good teacher [whom] can help students to discover personal examples of thinking outside of the box….With proper instruction, most students can gain increased skill in making such connections by themselves. Clearly, this is an important goal in education!*" (Moursund, 2007, Pg 13).

Another way that gaming helps students is by thinking of them as models for a real-world example, situation, challenge, or problem. We often make models as a preliminary step in problem-solving to test theories in a non-catastrophic & inexpensive way. Moursund (2007, Pg 17) further goes on to state

> *The single most important strategy for problem solving is building upon the previous work or yourself and others….You make routine use of a number of different problem-solving strategies without giving much thought to them. As an example, often when you are about to make a*

decision, you think about the consequences of this decision. You mentally "play out" what might happen in the future if you make a particular decision or take a particular action. If you are impulsive—perhaps often acting without thinking of the consequences—you work to overcome this impulsiveness.

You have had years of informal and formal education in this think before your act strategy. It is now a well-ingrained component of your cognitive maturity. As a parent or teacher, you undoubtedly place considerable emphasis on helping children make progress in this aspect of cognitive maturity.

Introducing gameplay within the learning environment has the benefits of awakening the student and moving from the traditional mindset of 'boring instruction' to ways of combing personal engagement, emotional memory, and improve historical/real-world examples by providing a wealth of role-playing situations & problem-solving skills by increasing cognitive maturity. Games in the classroom should be seriously considered when interacting with students, developing lesson plans, and finding ways to introduce 'stealth learning' (clever, disguised ways to introduce learning objectives through non-traditional tools, such as games, to encourage students to have fun and learn. Students think they are merely playing, but they are simultaneously learning.) (Sharp, 2012)

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