

GAMIFICATION THEORY

DESIGNED BY NANCY WANG

CREATED & INSPIRED IN COM320



WHAT IS IT?

"THE PROCESS OF GAME-THINKING AND GAME MECHANICS TO ENGAGE USERS AND SOLVE PROBLEMS"

- ZICHERMANN, & CUNNINGHAM (2011)

In plain english, Gamification is the application of video game elements in other areas of activity. The concept of Gamification is to motivate and increase user activity and retention.

This concept is spawning an intense public debate as well as numerous applications – ranging across productivity, finance, health, education, sustainability, as well as news and entertainment media.

REAL LIFE EXAMPLES

The most common form of Gamification are reward systems. In most video games, they reward players for playing for a certain amount of given time to incentivize their loyalty.

Many retail stores have caught onto how effective this system is, and have implemented memberships into their stores. Other stores will have a punch-card system, offering a free item if a customer has purchased a particular item an allotted amount of times.

Pokemon Go was a popular implementation of Gamification. It used the nostalgia of their fanbase to incentivize active exercises.

EFFECTIVENESS

Games are considered 'addictive' for the most part. Parents view video games with a frown, as their children would continuously play them for hours and hours.

Although this is perceived as a negative trait, it's undeniable that there is a purposefully placed addictive mechanic for video game companies to keep their audience.

But how do they do it? How do they keep an audience so fixated?

First, one would have to explain the concept of "flow". Flow is the middle ground between skill and difficulty in a game; it's the perfect medium in which a player enters a state of "flow".

While in this state, players will experience:

1. Extreme focus on task
2. A sense of active control
3. Merging of action and awareness.
4. Loss of self-awareness.
5. Distortion of the experience of time.
6. The experience of the task being the only necessary justification for continuing it.



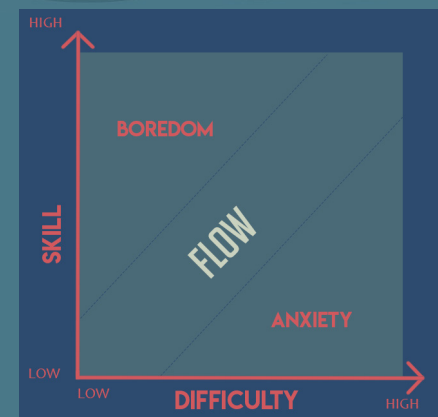
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This equilibrium keeps the player focused on the game, immersing them in the digital world.

Video games use rewards as an incentive to complete tasks and quests; in doing so, the player is subsequently fulfilling these tasks to acquire better items than the ones that they possess.

The digital world is also more forgiving than the real world. Tests are marked and given back to students – their efforts are graded. In video games however, players are given extra lives and tries to achieve their goal. This encourages players to never give up on their tasks, and allows them to learn the strategies more efficiently.



WHY STUDENTS NEED MORE

"YOUNG PEOPLE TODAY NEED TO BE ABLE TO USE THEIR LEARNING MUSCLES TO INNOVATE AND CREATE, AND ULTIMATELY TO ADAPT AND TRANSFORM THEMSELVES SEVERAL TIMES OVER IN ONE LIFETIME. THEY NEED TO BE TECH-SAVVY IF THEY ARE GOING TO HAVE ANY HOPE OF A SECURE FUTURE." - DAVID WILLIAMSON SHAFFER

Today's generation is different; we've become almost dependant on technology and the digital world. We need technology now: to communicate, to share interests, and to help us broaden our horizons. It's become so significant that most people nowadays can't see themselves without their digital devices. A traditional classroom lacking any digital media and/or technology wouldn't give students the push that they need to succeed.

VIDEO GAMES IN THE CLASSROOM...?

It's more likely than you think!

A well-funded experimental New York City public charter school, Quest to Learn (Q2L), has practically eliminated textbook-based learning and largely replaced it with game-based learning. It describes itself as "a school that uses what researchers and educators know about how children learn and the principles of game design to create highly immersive, game-like learning experiences in the classroom." Basic classes such as math, science, languages, and social studies take place in virtual game worlds. There are bad guys and monsters to defeat along the way!

Most recent reports have contended that well-designed games can "...act as transformative digital learning tools" to support development of skills across a wide range of topics. To put it simply, well designed games have the potential to support meaningful learning across a variety of content areas and domains. Q2L is based on principles of game design and is "...intended to enable all students, regardless of their academic or personal challenges."

POTENTIAL DRAWBACKS

GAMING ADDICTION IS A LARGE CONCERN.

Scot Osterweil, a research director of MIT's Education Arcade, states that "...addiction game play is engineered into the games themselves". Therefore, participants are very prone to addiction.

He also notes that, "parents may want their children to study calculus every night, but they may become concerned if that practice were to become habit-forming."

A POSSIBLE SOLUTION?

Game designers are considering: "...The characters in the game might be programmed to get tired and ask the kids to take a break.."

HOWEVER, IT'S NOT THAT SIMPLE.

As many people describe it "The Broccoli and Chocolate issue". It's not the easiest to assemble a game that is both educational and appealing. Alan Gershenfeld, who serves on the advisory board of nonprofit organization Games for Change, said "...It's not easy, but it's doable."

A CASE STUDY: UNIVERSITY DEVELOPMENT COURSE

MAIN OBJECTIVE: TO IMPROVE LECTURE ATTENDANCE, CONTENT UNDERSTANDING, PROBLEM SOLVING SKILLS AND GENERAL ENGAGEMENT THROUGH GAMIFICATION.

The participants were avid gamers familiar with reward-based game elements. They all used an online management tool, Vulva + in-class activities. The researchers had many goals that they wanted the students to fulfill and implemented a reward structure through an experience point system (XP). Students were given short timed assessments, in the form of quizzes, once a week based on the course material.



TYPES OF COURSES:

- Class activities:** motivate students to attend lectures and increase exposure to course material.
- Online activities:** motivate students to review course material, and increase problem solving skills and creativity in assignments.

THE RESULTS

Like many case studies, they gave the students a questionnaire at the end. These were their results.

As you can see, a vast majority of students agreed to the statements that the gamification course benefitted them. (With the exception of story and theme that received 16 agrees and 11 neutrals).

They also compared the student grades for the course from 2011 that didn't have gamification, to 2012 which did. There was a significant improvement.

2011 had a mean of 70.8% w/ a standard deviation of 10.3
 2012 had a mean of 74.9% w/ a standard deviation of 8.6

(A) IMPROVED UNDERSTANDING: "THE GAMIFICATION IMPROVED MY UNDERSTANDING OF THE COURSE MATERIAL"			
STRONGLY DISAGREE 0	DISAGREE 4	AGREE 15	STRONGLY AGREE 10
(B) IMPROVED ENGAGEMENT: "THE GAMIFICATION INCREASED MY ENGAGEMENT WITH THE COURSE"			
STRONGLY DISAGREE 0	DISAGREE 2	AGREE 13	STRONGLY AGREE 17
(C) HIGHER MARK: "I OBTAINED A HIGHER MARK FOR THIS COURSE BECAUSE OF THE GAMIFICATION"			
STRONGLY DISAGREE 1	DISAGREE 1	AGREE 15	STRONGLY AGREE 6
(D) IMPROVED BY STORY AND THEME: "THE STORY AND THEME IMPROVED THE GAMIFICATION"			
STRONGLY DISAGREE 1	DISAGREE 2	AGREE 16	STRONGLY AGREE 4

CASE STUDY CONCLUSION:

THE RESEARCHERS CONCLUDED THAT GAMIFICATION HAD A SIGNIFICANT POSITIVE IMPACT ON STUDENT GRADES. THE GAMIFICATION TECHNIQUES USED IN THEIR DESIGN SIGNIFICANTLY IMPROVED STUDENTS' UNDERSTANDING AND ENGAGEMENT.

CONCLUSION

Gamified learning is still in its early experimental stages. It would be natural to be wary of such drastic changes immediately. However, due many studies have been proven and been tested that students learn to enjoy themselves in a gamified learning environment rather than the traditional book and chalkboard.

The option of using a gamified lecture should become a reality, just like on-line classes. Many people learn at different rates and using gamification in education can help engage students and make the classroom a more likeable atmosphere.

