

# **Can we learn from games?**

# **Do. Fail.**

# **Retry.**

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## Preliminary note

First off, I have to start by saying that games can be a lot of things.

There are online collaborative games, single-player games, puzzles, strategy games, simulators, story driven games, games based on sensory perception – such as music or visual esthetics, games for children, games for mature participants, games meant to prevent dementia in older people, games made with the intent of solving real-world problems, games to make you relax, games meant to get your neurons all fired up, games that are reflective, humoristic games where you can explore settings and people that are on the verge of absurd, there are entertaining games and serious games (it's worth noting that serious games *can* be entertaining as well, it's just not their *main* focus).

The games above have been mentioned with digital games in mind. Games, however, also include board games, card games, live action role-playing games and, of course, two of the oldest types of games; sports and kids play (which I guess would kind of fit into the whole live-action role-playing scene). It's all a matter of perspective.

I'll mostly be talking about digital games. I just wanted you to keep in mind that there are a lot of different games out there, intended for different age groups, what kind of mood you're in, what type of setting you're playing in, how much time and effort you want to put into it and so on.

In each of these categories there are some really, really bad games, for sure, but there are also a lot of good ones, and then, there are a few games that are just fantastic. These are the ones that'll be imprinted onto your memory and stay with you for years. That one moment, when you find a game that gives you an experience, a feeling or knowledge that is worth holding on to, *that* is something everyone should get to experience.

It's just all about finding a game that is right for **you**.

## Introduction

What do you think about when you hear the word "*learn*"? Do you see it as an academic expression, in a social perspective or maybe in the context of the term *life lesson*? Associations to the word "*learn*" will undoubtedly vary depending on the individual.

The dictionary defines the word "*learn*" as:

1. To gain knowledge, comprehension, or mastery of, through experience or study.
2. To fix in the mind or memory; memorize.
3. To become informed of; find out.

([1](#)) The American Heritage Dictionary of the English Language, 2009)

One could argue that any experience is valuable, and thus playing any game would teach the player some kind of lesson. However I'll try to restrict this essay a bit and look at exactly *what* we can learn from games, specifically digital games, and how this knowledge relates to our everyday lives.

There seems to be a certain divide between games being developed for educational purposes on the one side and the entertainment market with its AAA-titles on the other side. Although in many cases both sides try to draw on the experiences and expertise of the other. We'll take a closer look at both aspects in the following sections.

## **Overview**

A basic depiction of most games, from a player's perspective, would be something like this:

**Planning (strategy) → Action → Reaction → Consequence (punishment/reward)**

But how much can we really learn about decision making and consequences in a virtual world? In most games you lose a life and get revived at a previous checkpoint, or you lose assets and have to spend time to regain what has been lost. Sure, in this fast paced society time is precious, but beyond that it doesn't have any real consequences in our lives.

However, if you flip it around one could argue that this is exactly why you see players being so determined to master whatever skill that game's level requires and spend hours upon hours in order to reach a specific goal. They don't worry about making mistakes because they know they will get another chance. They learn more and more each time they have to do a level or game task over.

## **The brains reward system**

"The real jolt of dopamine reward is in response to the player achieving the challenge needed to progress to the next and more challenging level of the game. When the brain receives that feedback that this progress has been made, it reinforces the networks used to succeed. Through a feedback system, that neuronal circuit becomes stronger and more durable. In other words, memory of the mental or physical response used to achieve the dopamine reward is reinforced." ([2]Willis, 2011)

Willis points to the fact that a player gets constant feedback on actions taken in the game, and when they make a right decision and progress to the next level with increasing challenges, dopamine is released in the brain, functioning as a reward system and delivering instant gratification.

This may help to explain why many people find games so compelling. However, this reveals both positive and negative aspects, depending on how you look at it.

## Visualization of achievements

On the plus side this can be implemented in the workplace, in education (which it already is to some degree) and even in your everyday life, by dividing tasks or goals into smaller chunks of “mini goals” in the form of lists or graphs etc. where you can clearly see your progression. For some, crossing out an achieved goal is gratification enough. For others, external rewards in the form of feedback or even physical prizes may be desired.

The downside to this, however, is that one gets so used to this more or less “instant” reward system, when in many aspects of life you have to motivate yourself long term, knowing that the reward comes further down the line. In a generation where attention spans are quite low, and youths grow up expecting things to happen fast and more or less instantly with the click of a button, this may prove to be challenging unless larger aspects of our society changes at the same pace.

## Educational games

An average UK gamer plays for 11 hours per week. ([3]Harris, Pratchett, 2005). As the popularity of consumer games have grown, other industries have opened their eyes to the media as well, doing research on what it is about games that makes them so compelling, and looking at ways to implement these elements in other areas. This, of course, has also caught the attention of educational institutions.

There's a wealth of games out there intended for educational purposes, for all age groups, such as various cognitive games (*focusing on attention, memory, producing and understanding language, solving problems, making decisions*) and simulators.

There are also games focusing especially on one subject, such as math, chemistry, history etc. However, many students don't find these games intriguing, because there's a sense of getting knocked over the head with the information, sort of speak. These games try to be engaging, but often fail because of the obvious intent of teaching specified curriculum. In such a situation, many would rather just pick up the textbook, as not to “ruin” the world of games as they have come to know and love.

## Tangential learning

An alternative to the standard educational model mentioned above, would be tangential learning.

Tangential learning is defined as *the process by which people will self-educate if a topic is exposed to them in a context that they already enjoy.*

In other words; this would be a game where the player isn't necessarily aware of the fact that he's learning specific facts, and it's not immediately obvious how the experience relates to real events, but the underlying theme subconsciously sticks. Another example of tangential learning would be where the player is exposed to something in the game that makes him curious to explore or research

the subject more closely on his own outside the game perimeters. Quite a few games also have their own wikis, either in the form of a web page or an in-game menu.

## MMO's

In massive multiplayer online games, players have to work together to complete quests, utilizing each player's specific skillset. Such experience would be valuable when implemented in the workspace, where you often rely on teamwork and share ideas and cooperate across various fields of expertise.

Such games could also engage players in collectively trying to solve a variety of real life issues like conflicts, poverty, sustainable development, renewable energy etc.

## Simulations

Simulations are meant to imitate real-world processes over time. This covers many sub-genres, a few of which are: sports-, military-, business-, life-, role-play-, vehicle-, medical-, government-, project management- and city-building simulations.

Some examples of specific games:

***SimLife*** [\[4\]](#) – this is a game in which you can create and modify worlds, plants and animals at the genetic level, simulate and control evolution, study genetics in action, design environments and ecosystems and even change the physics of the universe.

***Peacemaker*** [\[5\]](#) - is a game that simulates the Israeli-Palestinian conflict. Players can choose to represent either the leader of Israel or the Palestinian Authority and they have to react and make social, political, and military decisions. The goal of the game is to solve the conflict with the two-state solution.

***World without oil*** [\[6\]](#) – this is a simulation designed to brainstorm-and therefore avert- the challenges of a worldwide oil shortage.

***Foldit*** [\[7\]](#) – this is an online puzzle game where the objective is to fold the structure of selected proteins to the best of your ability, using the various tools provided within the game.

The highest scoring solutions are analyzed by researchers who determine whether or not there is a native structural configuration that can be applied to the relevant proteins in the real-world. Scientists can use such solutions to solve real-world problems by targeting and eradicating diseases and to create biological innovations.

They even did so when, in 2011, players helped to decipher the crystal structure of the M-PMV retroviral protease (an AIDS-causing monkey virus). The problem of how to configure the structure of the enzyme had puzzled scientists for almost 15 years, while players were actually able to produce an accurate 3D model of the enzyme in just ten days. Now *that's* crowdsourcing for you.

## Conclusion

There are a vast number of games out there, with different purposes and targeted audiences, some really good ones, some bad ones, and a few epic fails. In this context, what we can learn from games is obviously varied depending on which games you choose to play. But there are some things that bind most games together. Some core elements, if you will, that one can conclude upon.

- ✓ Cooperation and teamwork (*for multiplayer*s).
- ✓ Complex memorization.
- ✓ Strategy and quick decision making.

For me, though, the biggest and most universal lesson we can learn from games, comes down to the simple expression: **Do. Fail. Retry.**

Games encourage you to test various approaches, get creative and experiment, because you know that if you fail and “die”, you will get revived at a previous checkpoint. You always get another chance. This knowledge drives players to prevail and do a task over and over until they get it right, learning more and more each time around. Games also give you a chance to play at the appropriate difficulty level, which gives you enough of a challenge so that you feel it’s rewarding to master a skill, yet it isn’t so difficult that you feel you don’t have a chance to achieve the given goal.

To sum it up:

- ✓ Checkpoints and mini goals.
- ✓ Fast, specific and continuous feedback.
- ✓ Always another chance for repetition, till you get it right.

Surely it would be wonderful if these aspects could be implemented in other aspects of life as well. It may not be possible in every situation, but it’s definitely something to keep in mind.

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