

Hooked on Games: A Guide to Game-Based Learning

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March, 2016

Summary

Millions of children worldwide regularly play computer games. How can this engaging pursuit be harnessed as a tool to deliver learning of the traditional curriculum and provide essential skills for the future, digital age? Game-based learning is becoming more and more mainstream, to the point where teachers are in many cases able to create their own video games tailored to the needs of their students, and the curriculum content that must be covered. We are living through a technological revolution, and whilst we may be the fathers of the revolution, to our children, technology as we call it is nothing out of the ordinary. It is with this in mind that we must go on a journey to discover what game-based learning is and how it can impact the precious minds of the future, our next generation of learners.

Schools and Game-based Learning

“Our children are living in the most intensely stimulating period in the history of the earth. They're being besieged with information and calls for their attention from every platform - computers, from iPhones, from advertising hoardings, from hundreds of television channels and we're penalising them now for getting distracted. From what? Boring stuff at school, for the most part.” (Sir Ken Robinson, 2008)

Educators are acutely aware of the link between engagement and learning, and nothing is more engaging for children than computer games. For some teachers, it simply provides a calming influence, as the learner's attention is instantly captured by the task on screen. But it is becoming much more than this... A shift is developing within the education system, where games are not just a reward or compliment to traditional teaching methods, but more a tool for delivering outcomes more effectively, more efficiently and more centered on the learner's needs and interests.

Video games are immensely popular, with both boys and girls, and a recent survey found that 91% of American children regularly play computer games of one sort or another. Be it on their computers, tablets or phones, the drive to play is huge!

As the saying goes: 'If you can't beat them, join them!', so thousands of teachers worldwide have adapted their approach to teaching, including video games wherever appropriate, not only to enrich the experience, engage pupils and deliver a specific learning outcome, but to develop many more skills essential to thrive in the modern age. But what are those skills?

And given the development of technology over the last decade, will those skills be relevant when the learner is looking for their future employment?

What is game-based learning?

Generally speaking, game-based learning (GBL) is a method used to present a subject matter through games.

Teachers have often tried to create game-like mechanisms such as competitions, achievements and scenarios but this is commonly referred to as 'gamification'. While it may improve focus and motivation, it does not affect the learning itself. It is still the teacher who is providing the platform for the learning to take place, offering challenge and feedback.

Game-Based learning occurs where it is the game itself that teaches the user, providing the challenge, practice and feedback that would traditionally be given by the teacher.

In today's digital age, game-based learning more commonly refers to the use of video games as a tool to deliver a learning outcome, over more traditional teaching methods e.g. lecture or use of text books.

Kids are Wired Differently

If you are reading this article as a parent or educator, it is very likely that you have witnessed what could be referred to as a technological revolution over the past twenty or so years. With the shrinking of the microchip, evolution of smart technologies and of course the popularity of the Internet, this technology has become an essential part of our lives, for most.

For a number of years now, most schools in the developed world have been 'connected' and of course both educators and learners use some form of computer technology routinely throughout the day.

The latter, however, do not call it technology. They know no different ... "This "iGeneration" can't conceive of a world before everyone owned a mobile phone and would laugh if you told them there only used to be four channels on TV, or that you used to have to hand over pocket money in a record shop if you wanted to listen to an album (on an antiquated disc known as a CD)." (N L Diu, 2015)

What those outside of the 'iGeneration' would consider as a distraction, could really be the gateway to unlimited learning possibilities. "... studies consistently found that video games can impact positively on problem solving skills, broader knowledge acquisition, motivation and engagement." (Perotta et al, 2013)

Motivation: Hooked on Games

Through their lifelong interactions with technology, learners now experience and expect instant information and feedback. Good game designers know this and the very best video games are synonymous with this notion.

For the most part, games develop a level of immersion in the user, unlike any other experience as they try as the player to complete the level, unlock the next feature or achieve all three stars. As they strive to master their chosen game, there is room to practice, to explore new areas and to build on the skills developed from the previous level or chapter.

Where there is not in-game support, communities grow, information forums spawn, as players share the latest hint or cheat. And then of course, there are the game gurus. We have seen their meteoric rise in popularity of gaming channels on YouTube, and the emergence of the term 'YouTuber'. If you are not convinced that these are popular, simply search Pewdiepie, Captainsparklez or Stampylonghead on YouTube and check out the subscriber count.

What had started out as information for gamers has become entertainment for the modern youth as players live their games. There can be no doubt of motivation to play the game. But why are some games so appealing? The secret is in allowing the user to play as their ideal self, whatever the chosen genre. Achieving mastery over the game has a huge impact on self-esteem.

Growing Self-Esteem

Video games are of course recognized as a fun pursuit. But a fundamental reason for sustained game play is the game's capacity to take the player out of this reality to a place they can find their identity and achieve their goals, away from the pressures of the real-world. Aside from simple escapism, it provides the opportunity to have unlimited attempts at a problem, puzzle or level, with instant feedback on progress.

Mihaly Csikszentmihalyi (1990) coined this phrase 'flow' whereby "the best moments in our lives are not the passive, receptive, relaxing times... The best moments usually occur if a person's body or mind is stretched to its limits in a voluntary effort to accomplish something difficult and worthwhile."

While the multisensory stimulation of the game serves as a hook, it is the ability of the game to provide a platform for the user to be successful and to recognize that success that maintains the engagement. How often have you seen video games come and go? Very few maintain longevity, as very few are able to provide that heightened level of engagement.

Problem Solving

There is no better way to cement learning than through the student's ability to solve a problem. This in itself can be a motivation for some learners, and video games or often build on the necessity to solve problems.

It was reported by Dara Mohammadi in 2011, that gamers playing an online puzzle game resolved a protein folding structure research that had been baffling the greatest scientists in the field for 13 years. It took them just three weeks.

Some problems are easy to solve and some more complex, as with life.

Of course, with the advent of information being so readily available, it can be a challenge for the modern educator to set problems for students of an appropriate challenge, and particularly those for home study.

Yet custom made problem solving is at the heart of good game design. "The game may allow players to construct their own goals, but only within the rule-space designed into the game. (J Gee, 2008)

Real World Application

With improvements in technology, as come the improvements in the platforms that deliver the game experience. Advances in graphics, processing speed and interactivity through such technologies as virtual reality now provide users with almost seamless transitions between the real world and the gaming world, indeed many pilots, racing drivers and military personal will learn and hone their skills within the realms of what are essentially game versions of the real world.

However, it is the beauty of the games ability to harness the imagination of the user that is extremely powerful in delivering the real-world experience. Games such as Minecraft are popular, not because of their graphics of real-world simulation, but by their ability to immerse the user in the world that has been created for them.

Imagine learning about ancient history through being there... In Ancient Egypt, Rome or Elizabethan London, within a game of course, but to the user, actually being there. Imagine learning about the anatomy of the human body, not through books, but while travelling through the bloodstream, within a virtual world, battling against viruses and saving the host body. Imagine honing maths skills, not through revision for a test, but by completing a quest for a hidden treasure.

All of these and more are possible through game-based learning and whilst this may feel outside of the comfort-zone for some parents and educators, the future of learning can be

more exciting, more engaging and more individually tailored for our children than we could ever imagine, using gaming technologies that may not even exist yet.

Frequently Asked Questions:

What is game-based learning?

This is where it is the game itself that is the tool for learning. An early yet powerful example includes flight simulators, where pilots learn to take off, fly and land without any risk to passenger. More recently, teachers use games such as Minecraft to teach key concepts in a range of subjects.

What are the benefits of game-based learning?

These are vast and varied. The most obvious being motivation and immersion in the content matter. Games can also be tailored to individual needs and interest, with instant feedback on progress being provided.

How does game-based learning improve what we already have?

Teachers work incredibly hard to educate, but even they cannot be on call 24/7. A game created specifically to teach key concept and skills with online support, rigor and instant feedback is almost like having a teacher on call 24/7.

What is the impact on the 'whole child' of playing video games?

In most cases, video gaming time have just replaced time spent watching TV. Increasingly, gamers play online with other gamers, increasing their personal friendship network and the games have a huge positive impact on self-esteem through achievements, leveling up and beating the game!

How much game time is too much game time?

Of course, the old adage of 'everything in moderation' comes in to play here. However, one of the primary reasons users play video games is for relaxation, or seek instant feedback, meeting their own goals. Enthusiasm and passion for a game is common, but ultimately, the adult should decide whether the child is playing too much and when it's time to take a break.

How safe is game-based learning online?

As adults, it is our duty to ensure the safety of our children. Schools have a duty to actively promote e-safety and yours should be too! The provision of safe online learning networks and servers, with close moderation are commonplace.

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