Educational Games: Crash Course Games #15

Crash Course: Games
https://youtube.com/watch?v=ORSUg0C8qR8
https://nerdfighteria.info/v/ORSUg0C8qR8

Hi, I'm Andre Meadows and this is Crash Course Games.

We looked at many types of game in this series - from card games to board games to video games - and all these games share one common characteristic; they require learning.

They teach us the rules of the game world otherwise we wouldn't be able to played them. Even a simple game like rock-paper-scissors requires the players to learn the rules to participate. But, players can also go beyond these basic rules by learning strategies and techniques to increase the likelihood of a win.

So, this might mean figuring out which combination of buttons will produce Sub-Zero's arctic blast or understanding the odds of getting dealt certain cards in a poker game or how to grip and release a baseball to throw a curve.

But, today, we're going to focus on games designed to educate both within and outside the game's world.

Educational games have been around for thousands of years. They attempt to balance entertainment and fun with learning. And some are more successful than other. So, today we're going to focus on on a few of the successes in educational gaming and take a look at what exactly they are doing for us and how.

Theme Music

An educational game is a game explicitly designed to teacher its player a skill like how to add fractions, structure a sentence, or fly an airplane. And these games are designed with the intent to help players to apply these concepts outside the gaming universe.

For example, there is an educational game that is a descendent of the 6th century Indian game, Chaturanga. This game spread to Persia at around six hundred CE and was adopted by Muslims after the Islamic conquests of Persia. Eventually, through Moorish conquest of Spanish it spread into Europe and became known as the Kind's Game. That's right, we're talking about Chess, the world's most popular board game.

IN 1750, Ben Franklin wrote that Chess provided several very valuable qualities of the mind including foresight, circumspection, and caution. But, what does Chess teach us?

Well, when Chess stormed Europe at around 1,000 CE it found its place as part of noble life. The game was used to teach the art of war to young nobility as they believed Chess stressed how war could be simplified to a series of direct choices.

Now, it's pretty difficult to prove that rules of Chess can teach us to be better generals, but a 2000 study on the effects of Chess instruction found that there is a strong correlation between learning to play Chess and academic achievement. The researchers found that students who received Chess instruction scored significantly higher on all measures of academic achievement including math, spatial analysis, and nonverbal reasoning.

But, not all educational games have to be so serious. With the arrival of video games educational games get a new platform to be engaging, but also fun.

Let's go to the Thought Bubble.

In 1974, the Oregon Trail was released and it set out to teach children the rigors of the Pioneer lifestyle. It follows a journey of a wagon leader and a group of settlers as they leave Missouri to Oregon's Willamette Valley in 1848.

But, the Oregon Trail doesn't just teach players about actual life on the trail.

For instance, there is only a set amount of money and players are tasked with choosing the best combination of supplies before starting the journey, teaching players how to manage assets and balance resources. These mechanics are also applied onto the trail too. Like, how players decide when ration resources and trade.

The game also teaches players how to predict the outcomes of their decisions. For example, they have to choose wisely when to leave. Too early and the oxen won't have food, but too late and the party won't make it to Oregon before winter. These choices teach players about short and long-term consequences.

Maybe, Auntie Mae drowns because you're too cheap to pay for the ferry and try fording the river instead. Or you set a grueling travel pace causing the help of your party to slowly deteriorate.

The game even teaches some basic math components like budgeting money and visualizing abstract numbers like the depth and width of a river.

The Oregon Trail saw incredible success in schools in the 1970s and 80s selling an estimated 65 million copies and was even inducted into the World Video Game Hall of Fame in 2016.

Thanks Thought Bubble!

Now listen up, Gumshoes. Another widespread educational game is Where In The World Is Carmen Sandiego? In this game, you track the whereabouts of a series of thieves, the last one being Carmen Sandiego.

Players collect and solve clues about thefts in 30 countries before time runs out. The game teaches people about geography, world cultures, astronomy, and history through problem solving.

The Carmen Sandiego software series was widely adopted in classrooms, reaching over 300,000 schools across the United States. It has even been awarded over 90 educational and parent awards.

Where In The World Is Carmen Sandiego? spawned a series of sequels. We had Where In Time Is Carmen Sandiego? in my school. It also had books, tabletop games, an animated series, and it also inspired an educational game show on PBS that ran for five seasons, attracting 5.5 million weekly viewers, winning its own fair share of awards, and giving us a catchy theme song from Rockapella.

SINGING: Where in the world is Carmen Sandiego

And educational games have greatly helped those that have struggled with math.

Two games stand out: Math Blaster and my personal favorite, Number Munchers.

The original Math Blaster came out in 1983, but it would be the remake n 1989 that was widely played in classrooms. You see? Not all remakes are bad.

The main hero, Blasternaut, and his robot buddy, Spot, had to have the universe by solving math problems, bringing them across multiple levels. It was an exciting space adventure designed for players to practice simple math concepts through arcade style play.

Number Munchers was released in 1986 to teach basic addition,

subtraction, multiplication, and division. Players were presented with a grid of numbers and an objective to consume. To advance, players had to eat the correct answers to the questions, like "divisible by 2" or "prime numbers", while dodging Troggles, which were troll-like characters that moved around the board changing numbers. And if they hit you, they would make a sound like this *makes weird sound*. Players were given breaks in between levels with cutscenes, just like those seen in Pac-Man.

Games like these were popular in classrooms.

Eric Klopfer, author of Augmented Learning, Research and Design on Mobile Educational Games, said, "These games were so successful because parents and teachers pushed for them because it was easy to see what students were learning and that they were learning." And students wanted them too because they were fun.

That bring us to the impact these games have on ourselves and our learning. A 2014 study by University of Rochester professor of brain and cognitive sciences, Daphne Bavelier found that action games excel at many tasks because they are better learners. The researchers claim and showed that playing action games expands our preparedness for performing daily tasks. The study further found that when faced with a new perceptual learning task, action gamers performed the same as non-action gamers, but showed an accelerated learning curve. The researchers tested players a few months later and found that the action gamers still performed better than the control group, so basically, the study argues that people who play games are able to learn new concepts more quickly, and game-based learning also provides an educational environment much different from the rote memorization common in classrooms.

According to Dr. Susan Ambrose, director of Carnegie Mellon's Eberly Center for Teaching Excellence, educational games allow people to actually test the lessons they have learned, helping them retain the information as well as know how to use it in real life, and Dr. Ambrose's research also shows that good educational games allow learners to remain engaged with the material until it is mastered. These games allow them to work through concepts and make mistakes in a risk-free setting. In other words, games provide excellent environments for learning, because players don't have to worry about failing, and these games do play a big part in our education system.

In 2008, Pew Research Center claimed that 1/3 of all American students have played an educational game as a school assignment. So whether you're learning strategy with Chess or Oregon Trail, munching numbers, or learning geography with Carmen Sandiego, educational games play an important role, more so than most games, actually, because they so heavily influence what we learn and how we apply those skills in our real lives, and not only are you learning something, you're also having a good time. Have you ever played 2-player Donkey Kong Jr. Math? It's actually more fun than you think, and by the size of the educational game catalogs on your smartphones, educational games are more prevalent than ever. Now, if you'll excuse me, I gotta learn some geography, because Mario is missing. Thanks for watching, see you next time.

Stan: CrashCourse: Games is filmed in the Chad & Stacey Emigholz Studio in Indianapolis, Indiana, and it's made with the help of all of these nice people. If you'd like to keep CrashCourse free for everyone forever, you can support the series at Patreon, a crowdfunding platform that allows you to support the content you love. Speaking of Patreon, we'd like to thank all our Patrons in general, and we'd like to specifically thank our high chancellor of knowledge, Morgan Lizop and her vice principal, Michael Hunt. Thank you for your support.