Video Games & The Brain

By: The Fire Breathing Rubber Duckies
The History of Video Games Over the Years

1950’s: Where It All Began
In the 1950’s, a man by the name of William Higinbotham made a game called Tennis for Two, which included a simple two-player game. The game was played on a computer screen, which was later used as a precursor to modern video games.

1962: Now, Time for Space
12 years after the creation of Tennis for Two, a man named Steve Russell made a game called Spacewar! at MIT. It involved more content for people to play intense dogfights and gravity effects.

1972: The First Console
In 1972, a man by the name of Ralph Baer made the Magnavox Odyssey. Kids could finally play video games at home.

1978: A New Dawn For Gaming
Around the time of 1978, arcade machines started to popularize and games such as Space Invaders and Asteroids emerged. The iconic Pac-Man started to take the scene of video games, but this popularity would soon be forgotten thanks to a new competitor.

1983: The Rise of Computer Gaming
Around this time, a new avenue of gaming started to rise, computer games. These types of games would soon make arcade games a thing of the past.

1985: The Release of Another Icon
Around this time, the NES became a best-selling console with titles such as Donkey Kong, Duck Hunt and The Legend of Zelda.

1990-94: A Rivalry Begins
Around this time, two iconic gaming companies were against each other, Nintendo and Sony, but Nintendo was dominating with the Super Mario titles. While Sony had the PlayStation and made games with cutscenes.

With the release of the Nintendo 64, which included 3D games now, on the other hand, Sony had released the PlayStation 2 along with some iconic games, Metal Gear, GTA, and Final Fantasy.

2000-2002: A New Challenger Approaches
With the rise of Microsoft, Xbox and the release of Halo CE and 2, they started to become another icon and a big seller. But from the shadows, another company, Blizzard, made the iconic PC MMORPG, world of Warcraft, which made PC gaming more popular.

Modern Day: Where We Are Now
As of 2022, gaming has truly evolved, very realistic graphics and cutscenes, different companies have become more or less iconic and people on different platforms can now play with each other in games.

Timeline Source: (Wutz, 2021)
“10–20 minutes of violent gaming increased activity in the brain regions associated with arousal, anxiety, and emotional reaction” (Paturel, 2014).

“Tetris Shown to Lessen PTSD and Flashbacks” (Nixon, 2012).

“Playing video games can lead to structural changes in the brain, including increasing the size of some regions, or to functional changes, such as activating the areas responsible for attention or visual-spatial skills” (UOC, 2020).

“In 1998 a study showed playing video games releases the feel-good neurotransmitter dopamine.” (Patural, 2014)
- **Frontal Lobe**: Video games have shown better cognitive function, specifically with short term memory, visual attention, reaction time and working memory (Guy-Evans, 2021).
- **Nucleus Accumbens**: The Nucleus Accumbens is affected by video games since you use both your hands and your memory (Wilms, 2013).
- **Hippocampus**: Different types of video games can either cause growth or shrinkage of the hippocampus (Bailey, 2019).
Pros & Cons of playing video games

**Pros**

- Playing video games can help distinguish subtle differences like shades of gray
- Playing video games can help reduce anxiety and depression
- Video games can improve executive functioning for example the ability to solve problems and multitasking

**Cons**

- Even though video games can ease anxiety and depression they can also increase anxiety and depression
- Video games can become addictive and cause damage in someone's school, family, and social life
- Video games can make people more aggressive and violent, specifically people that play shooter games

(Bernstein, 2017)


Special thanks to the guest speakers who helped us with our research: Dr. Amanda Roberts of Scripps Research Institute and Matthew Koch, MFT.
Contains interesting facts & details about the brain and the way it responds to video games & much more...

Micah, Max, and Aidan