

## Positive and Negative Effects of Electronic Games on Children and Adolescents (Theoretical Approach).

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**Abstract:** Play is considered one of the most important daily activities that individuals engage in, and it is based on the use of kinetic and mental energy in one. It is usually performed by humans to achieve fun, pleasure, and entertainment. Play is a human instinct that arises with the human being from birth, and through it, he acquires behavioral patterns that are reflected in the situations he faces. It also helps to develop behavior and personality in its various dimensions. However, technological development has introduced many new games, namely electronic games, which have developed amazingly to the point of becoming comparable to human imagination. Their use has become widespread among children, young people, and adults, especially children who have become their favorite pastime. As well as the widespread spread of these games, it has sparked widespread debate about the positive effects represented in the cognitive, motivational, emotional, and social skills, as well as the negative effects that include physical, mental, psychological, behavioral, and religious aspects.

**Keywords:** Play, electronic games, positive effects, and negatives

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## **I- Introduction :**

Man remains in a state of perplexity between the positives and negatives of electronic games, especially in our Arab world, which is considered a hotbed for its spread, but ignorance of its face, and the other, and the vast majority of individuals in our Arab world imagine that acquiring electronic games is a sign of development and progress, and it is a measure of their ability to keep pace with the times and modernity, and therefore these individuals compete in acquiring games and boast about it. While some of them are ignorant of the simplest rules of operating and the highest of electronic games.

### **1. Electronic Games**

#### **1.1. Definition of Play**

The sweetest thing in a child's life is play, and the child can stay alive without play, but it is difficult to develop. Play is the child's life, his world, and the basis of his happiness. It is a lesson, an experiment, and an exercise, and then it satisfies the child's inclinations and desires, and opens up the scope for solving many physical and spiritual dilemmas.

Play represents a primary experience in the child's growth in various aspects of personality, as play develops mental, cognitive, social, emotional, and physical aspects, and the play experience forms a self-experience in the early stages, as the child develops in the early years of his life many attempts through which he tries to discover the environment and interact with it to get to know it.

And through that, the child acquires his concept of himself, and develops an understanding of his capabilities through what he can reach and obtain, and through what he can transfer and change and solve and assemble. And the child develops this cognitive idea through the perceptual channels that work in the field of perception and absorption of experiences. The child sees himself in dire need of play, as he plays and occupies himself with play in the true sense of the word and with all his feelings and sensations with pure intention, and even if he is deprived of play and deprived of it, it is as if he is deprived of his life.

- Gross considers play to be an unconscious preparation for life. A three-year-old girl, for example, unconsciously prepares to play the role of a mother when she puts her doll to sleep and threatens it. Thus, the source of the game is instincts, or biological mechanisms.
- Bühler emphasizes the well-known enthusiasm that accompanies children's play, arguing that the meaning of play lies in the pleasure it brings to the child. However, the reason why children feel happy remains unknown.
- Freud, on the other hand, believes that play has a relieving function to reduce tension and emotions caused by the conflict between a person's desires or ambitions and the surrounding conditions. Thus, it helps to discharge repressed desires and aggressive tendencies.
- Behaviorist scholars have interpreted play on the basis of the association and coupling between stimuli and responses, and their support and reinforcement.

- Piaget, on the other hand, interpreted play on the basis of the processes of representation and assimilation, and strengthens development in play to the continuous activity between the two processes of adaptation. Play is considered the basis for mental growth and development.
- Play is considered an educational tool that works to a great extent to shape the child's personality in its various dimensions. Thus, scientific games, when well-planned, organized and supervised, play an active role in organizing learning. Valuable educational studies have proven the great value of play in acquiring knowledge and the skills to achieve it if it is well-exploited and organized.
- In short, play is considered a diagnostic tool and a therapeutic tool. Play reveals the depths of the child's personality, feelings, thoughts and anxieties. Therefore, they resort to observing children during play to identify problems that can be reached and understood through dialogue, and then treated and overcome.

## **1-2 Concept of Electronic Games**

They are a type of modern game that is most popular in the world and are displayed on a television screen - video games "or on a computer screen, a computer game that is also played on its own controllers in dedicated electronic game halls, so that these games provide the individual with pleasure through the use of hand with eye coordination or challenge mental abilities, and this is done through the development of electronic programs over the past forty years, computer games have evolved from floppy disk games to compact discs, to the Internet, and new forms of these games have evolved individually, player vs computer or against other people on the Internet (Al-Shururi, 2008,(46).

They are also considered an activity with specific rules, where players participate in a fabricated case or dispute, so that it has results that are measured quantitatively, and the game is called electronic if it exists in a digital form, and usually includes various platforms such as the Internet, computer, television, mobile phones, video (PlayStation), and handheld devices.

Electronic games have made tremendous technological leaps in recent times, making this market the most popular among other entertainment media such as music and films. Electronic games have evolved over the years, where it is now possible to enter the world of electronic games through imagination and senses, which have become three-dimensional. For example, in chess with a champion sitting in front of us metaphorically, or facing cloned characters in tennis and football, even parks have been created where visitors can train skiing or baseball against cloned images of champions, or golf or visit historical cities (Al-Quwaider, 2012, p. (128).

## **1.3.The History of Video Games**

According to Alain Le Diberder, the world of video games has gone through six stages up to 2003. Video games are the advanced stage of video games that are played on various gaming devices, including televisions, mobile phones, and more. Each stage in the evolution and development of video games is characterized by new technology, a strong rise in the sector, and a collapse phenomenon with the pre-formation of the following stage. The seventh stage began in 2004, the year after the publication of Le Diberder's book.

**Stage 1:** Began in the early 1960s with the appearance of games on computers that were developed by physicists only to pass the time or to show off technology. The fruits of this period were the games "Pong" and "Space War" invented by a physicist and an electronics engineer.

At the beginning of the 1960s, the technical and economic conditions necessary for the emergence of video games were all present:

- The introduction of television into many homes.
- The social practice of mechanical games and arcade games.
- The rise in the purchasing power of children and adolescents since the 1950s.
- The development of computer uses, as they were no longer limited to management or scientific calculators.

The absolute technological element of this stage was the appearance of the microprocessor marketed by Intel in 1971. In the following year, 1972, Nolan Bushnell founded the first video game company, Atari, and introduced the first electronic arcade game, Pong. In its first year, Atari sold more than 10,000 machines, and in 1976 the first game that only allowed Pong to be played was marketed. Warner bought Atari for \$28 million that same year.

Atari's immediate and significant success led to the proliferation of competing controllers. At the same time that Apple was preparing to launch its Apple 2 computers, the abundance of products made it difficult for them to innovate, leading to the end of the first cycle of video games in 1977. Bushnell and Atari would remain the main protagonists of the second stage of the history of video games (Ahmed Falaq 2009.113).

**Stage 2:** The second stage begins with the announcement of the first multi-game controller, the VS2600 from Atari, which included a range of games with new goals and rules, thus giving birth to the video game publishing industry (Edition des jeux). The symbolic game of this stage is "Space Invaders" from the Japanese company Taito in 1978, followed by many famous games such as "Pac-Man" and "Donkey Kong" from the Japanese company Nintendo in 1981.

This stage was characterized by the continued development of technology and the appearance of new gaming devices such as Colecovision, Atari 7800 and Intellivision. It was also marked by the appearance of the first 3D video games in 1980.

The rapid development of the video game industry in this stage led to increased competition, which led to the collapse of some companies such as Atari in 1984.

**Stage 3:** The third stage begins with the appearance of the Nintendo NES in 1985, which revived the video game industry after the collapse of Atari. This stage was characterized by the appearance of 8-bit video games, such as "Super Mario Bros" and "The Legend of Zelda" from Nintendo, and "Sonic" from Sega.

This stage was also marked by the appearance of the first fighting video games in 1987, such as "Street Fighter II" from Capcom.

**Stage 4:** The fourth stage begins with the appearance of 16-bit video games in 1989, such as the Super Nintendo and Sega Mega Drive. This stage was also marked by the appearance of the first CD-ROM games, such as Final Fantasy VII from Square Enix in 1997.

**Stage 5:** The fifth stage begins with the appearance of 32-bit video games in 1994, such as the Sony PlayStation and Nintendo 64. This stage was also marked by the appearance of the first online video games, such as Quake from id Software in **1996**.

**Stage 6:** The sixth stage begins with the appearance of 128-bit video games in 1999, such as the Sony PlayStation 2 and Nintendo GameCube. This stage was also marked by the appearance of the first motion-controlled video games, such as Wii Sports from Nintendo in 2006

**Stage 7:** The High Definition Era (2004 - Present)

The seventh stage of video games began in 2004 with the introduction of high definition video games, which feature more realistic 3D graphics and visuals, and enhanced sound effects. This stage was also marked by the emergence of new and innovative game controllers, such as motion-sensitive controllers and touch-screen controllers. These advancements led to a more immersive and interactive gaming experience.

## **2. Evolution of Video Games**

Tennis for Two is a tennis-themed sports video game that was created in 1958 and is considered one of the oldest video games in history. It was designed by American physicist William Higinbotham. It allowed players to take turns playing, and the game Space War was produced in 1961 on PDP computers.

In 1972, Ralph Baer founded his famous company Atari, which produced a simulation game for the game "Pong" with the help of engineer Al Alcorn. The game was called "Pong" and became the world's first successful video game and launched the video game industry.

## **3. Benefits and harms:**

Due to the invasion that is sweeping the minds of children, young people and adults from electronic games, many studies have been conducted to identify its positive and negative aspects, including a study by Al-Hadalaq (2010) that was conducted on students from schools in the city of Riyadh, with a number of (359) students. This study found that playing electronic games has positive and negative effects. Among the positive effects is the contribution of electronic games that are played online (Online games) in improving some social and academic skills for players such as the skill of searching for information, the skill of typing, the skill of writing, the skill of acquiring foreign languages. And critical thinking skills and problem-solving skills. As for the negative effects, they are numerous and have been classified into six categories: religious harm, behavioral and security harm, health harm, social harm, academic harm, and general harm, and a number of negative effects fall under each category.

Allen (2010) also pointed out some of the positives of electronic games in that they stimulate contemplation and thought. It encourages creative solutions, adaptation and acclimatization, and enables the application of important opinions and ideas in real-life events and incidents. However, despite the benefits that some electronic games may contain, Anderson (2007, et al, Anderson)

refers to its negatives in the weakness of students' academic achievement, as most of the games used by children and adolescents depend on entertainment and enjoyment from killing others and destroying their property and assaulting them without right, which This can contribute to the development of violence and aggression skills in their minds and teach them the methods of committing crimes, their arts, and their tricks.

The video game revolution has surprised societies around the world, and within a few years video games have evolved. This development has seen a large increase in the number of users of these games, especially children and young people, and has developed tremendously. However, with this matter, which raised fears and shed light on the negatives of these games, it has recently been proven that there are many benefits to these games, but we must emphasize here that electronic games are produced in large numbers and have a variety and complexity that makes it difficult to conduct accurate studies that prove their effects, whether negative or positive.

The goal of mentioning the benefits of electronic games is not to ignore their negatives, but to think differently.

And to be more able and experienced in choosing the games that we believe will have a positive impact.

#### **4.The Impact of Video Games on Cognitive Performance: A Deeper Dive**

Video games have long been a subject of debate, with some arguing that they are a waste of time and others claiming that they have cognitive benefits. While there is some truth to both sides of the argument, research suggests that video games can indeed have a positive impact on cognitive performance, especially when played in moderation.

##### **4.1.Enhanced Cognitive Skills**

One of the most well-documented benefits of video games is their ability to enhance cognitive skills, such as:

- **Spatial Reasoning:** Video games, particularly action games, can help improve spatial reasoning skills. This is because they often require players to navigate through complex environments and make quick decisions based on their surroundings.
- **Problem-Solving:** Many video games require players to solve puzzles and overcome challenges. This can help improve problem-solving skills and critical thinking abilities.
- **Attention and Focus:** Video games can also help improve attention and focus. This is because they often require players to pay close attention to the screen and react quickly to changing stimuli.
- **Memory:** Some video games can also help improve memory. For example, games that require players to memorize maps or strategies can help improve spatial memory.

##### **4.2.Increased Brain Power**

Studies have shown that playing video games can actually increase brain power. For example, one study found that playing a 3D action game for just 30 minutes per day for 12 weeks led to increased gray matter in the brain regions responsible for spatial reasoning and memory.

### 4.3.Improved Academic Performance

Some studies have also shown that video games can improve academic performance. For example, one study found that students who played educational video games for just 30 minutes per day for five weeks showed significant improvements in math and reading scores.

- **Enhanced Creativity**

Video games can also enhance creativity. This is because they often require players to think outside the box and come up with new and innovative solutions to problems.

- **Increased Motivation**

Video games can also be a great way to increase motivation. This is because they are often fun and engaging, and they can provide a sense of accomplishment when players complete challenges.

- **Improved Social Skills**

Video games can also improve social skills. This is because they often require players to work together with others to achieve common goals.

**Overall, video games can have a number of cognitive benefits. However, it is important to note that not all video games are created equal. Some games are more likely to provide cognitive benefits than others. It is also important to play video games in moderation. Too much screen time can have negative effects on cognitive health.**

It is important to note that the research on the benefits of video games is still ongoing. More research is needed to fully understand the long-term effects of video games on cognitive performance. However, the evidence to date suggests that video games can be a valuable tool for improving cognitive skills and overall brain health

### 5.The Negative Effects of Video Games

While some video games may have benefits, their drawbacks often outweigh their advantages. This is because some games used by children and adolescents have negative content that affects them at all stages of their development.

- **Health and Mental Harm**

There are many negative health effects associated with various video games, including seizures, neurological disorders, aggression or physical violence, and poor academic performance. Video games also have a negative impact on deep focus, and it can be difficult to distract a child from the game the longer they play, which leads to neurological disorders.

We notice that eye movements are very fast during video game playing, which increases eye strain. The electromagnetic fields emitted from screens also lead to eye redness and dryness, as well as visual disturbances. All of these symptoms give a feeling of headache, physical fatigue, and sometimes anxiety, depression, lethargy, laziness, and hunched shoulders. They also provide an ideal environment for weight gain and obesity.

Video games contribute to the destruction of the mind's abilities, including competition, speed, and chasing, such as car racing, war games, and fighting. They have an impact on three basic learning abilities in children: attention, focus, and memory.

Education experts have confirmed that excessive practice of these games to the point of addiction can lead to the child becoming more susceptible to academic failure, in addition to their weakness in dialogue and expressing their ideas.

Long-term continued play also leads the child to social isolation and a lack of communication with others. Many studies have confirmed the effect of violent games on the brain and nerves of children, and they also develop aggression within them, which they initially practice on those around them, from their siblings, then on others, until this behavior becomes a system on which the child builds their way of dealing with others.

When a child plays at a rate of twenty minutes per day, video games will deal with brain oscillations, as the brain has oscillations between 14 and 28 oscillations per second. But when brain oscillations reach 28 oscillations per second, the brain is at its highest capacity. When the mind works at this speed for a period of 5 to 20 minutes, it begins to weaken due to fatigue. This applies to running speeds, as short distances require high speed unlike long distances. However, what happens to the brain is that it works at high speed for a long time, and this contributes to everything in the brain, which increases the lack of comprehension later.

- **Psychological and Behavioral Harm**

Video games can lead to addiction, which is characterized by excessive playing, preoccupation with the game, and difficulty controlling the amount of time spent playing. Addiction can have negative consequences on a child's life, including:

- Social isolation: Children who are addicted to video games may spend less time interacting with family and friends, which can lead to loneliness and social problems.
- Academic problems: Addiction to video games can interfere with a child's schoolwork, leading to poor grades and difficulty concentrating in class.
- Mental health problems: Addiction to video games can increase the risk of mental health problems, such as anxiety, depression, and sleep problems.
- Physical health problems: Addiction to video games can lead to physical health problems, such as obesity, eye strain, and carpal tunnel syndrome.
- In addition to addiction, video games can also have other negative psychological and behavioral effects on children, such as:
  - Increased aggression: Some video games, particularly violent games, can increase children's aggression and make them more likely to act out violently.
  - Desensitization to violence: Children who are exposed to violence in video games may become desensitized to violence in real life, making them more likely to accept or even perpetrate violence.

- Difficulty distinguishing between fantasy and reality: Young children who play video games may have difficulty distinguishing between fantasy and reality, which can lead to problems with fear and anxiety.
- Sleep problems: The blue light emitted from video screens can interfere with sleep, making it difficult for children to fall asleep and stay a sleep.

### **How to Avoid the Harms of Electronic Games on My Children?**

In recent years, electronic game stores have spread widely in various shapes, sizes, and types. This spread has led to an increased demand from children and adolescents to acquire these games, which have gained wide popularity and the ability to attract those who play them, as they have become a hobby that occupies most of their time. They attract them with drawings, colors, imagination, and adventure. Electronic games are one of the most important gifts that the computer has presented in its technology, which has attracted children to it.

### **Do not deprive your children of playing electronic games, and do not rely heavily on games that specify the appropriate age for them, because**

Those who set the appropriate age are just a small technical team that evaluates the game and its suitability for the age in general and may overlook many important things, which may cause errors.

### **Work on training your children to confront the harmful things that they may face, and here are some suggestions that may help you:**

1. **Talk to them:** Make sure your children know exactly what the standards are in your family, talk about the bad things that games can contain, discuss them, and ask them about the bad things that they may face while playing, set time limits for playing, and establish certain rules such as preventing exaggeration during interaction with the game such as raising the voice and screaming.

Children who play for an hour or less a day are more social and satisfied with life than children who do not play electronic games at all.

2. **Understand the game classification system:** Electronic games are classified in Saudi Arabia based on age. You need to know the content of each age and use those classifications as a starting point for approving the game, not the final approval.

### **6. Conclusion**

Although these games contribute to the development of the child's activity in play, increase his skills, activate areas of his thinking, enrich his imagination and activate it towards a wider direction, and push his abilities to growth and wide awareness, they also carry a lot of harm to the child, especially to his physical, psychological, mental, and behavioral health, and to his overall cultural patterns in general... This is through what many electronic games produce of negative data and dangerous results that work to spread (the negative culture represented by (the culture of violence that these games carry in their forms and contents and what they pump from many aggressive tendencies that threaten the positive culture and work to undermine its values, capabilities, and effects on the child's entity and behavior... to replace it with the culture of violence and its tendency to seek to establish its values and presence in the child's behavior and culture, especially after

violence has become a prominent phenomenon in all electronic games through computers, the Internet, and games on CDs and others.

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