

The Impact of Electronic Game Addiction in the Health and Safety of the School Environment (An Analytical Study)

أثر الإدمان على الألعاب الإلكترونية في صحة وسلامة البيئة المدرسية (دراسة تحليلية)

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ملخص:

أصبحت الألعاب الإلكترونية في السنوات الأخيرة من أبرز مظاهر الحياة الرقمية الحديثة، إذ تشكل جزءاً مهماً من الأنشطة اليومية للمراهقين بصفة خاصة في مختلف المجتمعات. ومع تزايد الإقبال عليها، وإعطائها وقتاً كبيراً على حساب الأنشطة التربوية والاجتماعية برزت مشكلة جديدة تتمثل في ظاهرة الإدمان عليها، وهي الاستخدام المفرط وغير المنضبط الذي قد يؤثر على التوازن النفسي والجسدي والاجتماعي للفرد، خاصة في مرحلة المراهقة التي تُعد من أكثر المراحل حساسية في النمو الإنساني. وتشير الدراسات الحديثة التي تم التطرق إليها إلى أن هذه الظاهرة تشهد انتشاراً متزايداً على المستوى العالمي والعربي، والمحلي. كما تم تسليط الضوء على مدى تأثير هذه الألعاب على صحة وسلامة البيئة المدرسية من خلال تأثيرها السلبي على الصحة النفسية، الجسدية، التحصيل الأكاديمي وسلوك التلاميذ خصوصاً في البيئة المدرسية الجزائرية. كما تم تسليط الضوء على أسباب ودوافع الإدمان وطرق الوقاية منه من خلال دراسة تحليلية للدراسات السابقة.

الكلمات المفتاحية : البيئة المدرسية، الإدمان على الألعاب الإلكترونية

Abstract:

In recent years, electronic games have become one of the most prominent aspects of modern digital life, forming an essential part of adolescents' daily activities across different societies. With the growing engagement in such games and the increasing amount of time devoted to them at the expense of educational and social activities, a new problem has emerged — the phenomenon of addiction to electronic games. This refers to excessive and uncontrolled use that may affect an individual's psychological, physical, and social balance, particularly during adolescence, which is considered one of the most sensitive stages of human development.

.Key words: School environment, electronic game addiction

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Introduction:

In recent years, the digital revolution has transformed the daily lives of children and adolescents, introducing electronic games as one of the most dominant forms of entertainment and interaction. While these games offer opportunities for recreation, competition, and even cognitive engagement, their excessive and uncontrolled use has given rise to growing concerns among educators, psychologists, and public health experts. What was once considered a harmless pastime has evolved into a behavioral phenomenon with potentially harmful consequences, often described as *video game addiction*.

This form of digital dependency has expanded rapidly across different societies, affecting students' mental, physical, and social well-being. The school environment, as a primary setting for personal development and socialization, has become particularly vulnerable to the repercussions of this addiction. Numerous studies have demonstrated that excessive gaming is linked to anxiety, sleep disturbances, academic underachievement, aggression, and social isolation—factors that collectively undermine students' capacity to learn and to maintain healthy interpersonal relationships.

Given the central role of the school in shaping learners' behavior and fostering holistic growth, understanding how gaming addiction affects the *health and safety of the school environment* has become an urgent educational and societal priority. This study therefore seeks to analyze, through a review of previous research, the negative implications of electronic game addiction on students' psychological, physical, and academic well-being, and to highlight its broader impact on the stability and harmony of the Algerian school environment.

First : Theoretical Framework

1 Research Problem's :

The educational environment constitutes a fundamental component in ensuring the overall quality of the learning and working context. It plays a pivotal role in developing individuals' skills, stimulating their creative potential, and enriching both teachers and learners with valuable experiences and knowledge. Numerous studies have emphasized that a safe and well-structured school environment is both beneficial and essential for students' growth across multiple dimensions—ranging from their academic performance to their emotional and social development. Accordingly, stakeholders are urged to prioritize its continuous improvement in both its physical and human aspects.

A safe educational environment encompasses several essential dimensions that must be present to foster a positive pedagogical climate conducive to students' academic achievement and healthy development. While the physical setting constitutes a vital component, of equal importance are the interpersonal relationships and behavioral dynamics among students, teachers, and the broader learning community.

Moreover, the climate of this environment is influenced by certain negative behaviors acquired from the external social context, which have increasingly shaped students' attitudes and conduct. These external influences are reflected within the school setting, posing potential risks to its safety and stability through students'

interactions with one another and with the institution's administrative and teaching staff.

In the current digital era, electronic games have become an integral part of the social and cultural fabric of adolescents' lives. Statistics indicate the deep penetration of this phenomenon; in China alone, the number of electronic game users reached 552 million by June 2022 (Fan & Zhang, 2023). Field studies, such as that conducted by Rahali and Khetache (Rmaissa & Khreibesh, 2022), reveal that 70% of Algerian adolescents in their sample spend more than two hours per day playing, a threshold considered indicative of addiction risk.

This widespread prevalence has raised growing concern among parents, educators, and mental health professionals regarding the potential impacts of such games—particularly those containing intense scenes of violence that can lead to *desensitization*, defined as the gradual decline in emotional responsiveness to violent content. These games often generate behavioral and social consequences, including verbal and physical aggression, bullying, social isolation, anxiety, depression, stress, negligence in fulfilling responsibilities, sleep deprivation, difficulty concentrating, lack of attention, reduced motivation for achievement, misconduct toward administrative and teaching staff, disorder, and even acts of vandalism. Collectively, these outcomes undermine the safety and stability of the school environment.

Such effects may be further exacerbated by the absence or weakness of socialization institutions and civil society organizations in fulfilling their roles in guiding and protecting youth from these risks, particularly in light of the rapid and alluring digital transformation that increasingly influences students and societies at large.

The habitual engagement in such games and the tendency to treat them as a fundamental behavioral pattern in daily life—allocating to them substantial amounts of time at the expense of academic achievement—constitute a direct pathway to undesirable addiction. This risk becomes particularly pronounced in the absence of parental or institutional supervision, as adolescents represent the age group most frequently using these devices and the most vulnerable to developing dependency.

Empirical findings have confirmed this trend, revealing that the majority of adolescent students (Rahali & Khetach, 2021)—approximately 70% of the studied sample—prefer combat, violent, and adventure games, which they play for more than two hours per day. According to international standards, this duration is considered a high-risk threshold indicative of potential addiction.

Given the seriousness of this phenomenon and its detrimental effects on students' psychological, physical, and academic well-being—as well as on their behavior—and consequently on the overall health and safety of the school environment, where the majority of our children spend much of their time, it becomes imperative to sound the alarm. There is an urgent need for concerted efforts among all stakeholders—socialization institutions, civil society organizations in all their forms, and the relevant authorities—to assume their respective responsibilities and intervene collectively to ensure a safe and healthy educational environment conducive to the success of the learning process.

These indicators reflect the growing prevalence of the phenomenon and raise serious concerns about its repercussions within the Algerian school environment (Rahali & Khetach, 2021), which serves as the primary framework for adolescents'

social and educational development. Excessive engagement in electronic games has been observed to lead to diminished attention, decreased academic performance, and the emergence of negative behaviors such as aggression and social isolation. Moreover, it contributes to psychological disorders—including anxiety and depression—and physical health issues such as reduced physical activity, sleep disturbances, and visual fatigue. Collectively, these factors may undermine the overall health and safety of the school environment, both in terms of interpersonal relationships within it and the psychological and physical balance of the students.

Based on the foregoing, the central problem of this study can be formulated through the following overarching research question:

What is the impact of electronic game addiction among adolescent students in the health and safety of the Algerian school environment?

2 Research Hypothese's:

Addiction to electronic games has a negative impact in the health and safety of the Algerian school environment among adolescent students.

3 Research Importance's:

The importance of this study lies in its effort to illuminate the growing dangers of electronic game addiction and its multidimensional effects on students' psychological, physical, and behavioral well-being, as well as on their academic achievement and the overall harmony of the school environment. By examining how maladaptive behaviors stemming from excessive gaming disrupt the educational climate, the study emphasizes the necessity of understanding and addressing this emerging challenge.

This importance is further underscored by the study's focus on a contemporary and rapidly expanding phenomenon among adolescents, particularly within the Algerian context, where digital technology use is increasing at an accelerated pace without sufficient supervision or awareness. The research contributes to the enrichment of educational and psychological literature by investigating the relationship between digital game addiction and the safety and health of the educational environment, while expanding theoretical understanding from psychological, social, and health perspectives.

In addition, the expected findings hold practical importance for educational administrators, teachers, and school psychologists, as they will provide a clearer understanding of the nature of electronic addiction and its behavioral and academic consequences. This knowledge can guide the design of targeted educational and awareness programs aimed at promoting responsible gaming practices in schools. Ultimately, the study aspires to enhance the quality of the learning environment by strengthening students' psychological and physical health, encouraging positive social relationships, and fostering a culture of balance and well-being within educational institutions.

4 Research Objective's :

The study aims to examine the impact of electronic game addiction among adolescent students on the health and safety of the school environment.

5 Research Concept's :

1. Definition of the School Environment (Abu Gharib et al., 2012):

The school environment is defined as the physical, social, and psychological framework within which the educational and pedagogical process takes place. It encompasses all conditions and factors that influence students' behavior and learning within the school setting.

According to the definition provided by UNESCO (2017), the school environment is "the sum of the climates, relationships, and interactions among individuals within the school, ensuring the holistic development of learners in an atmosphere characterized by safety, psychological comfort, and social support."

Definition by John and Barry (1983): define the school environment as *a set of factors that give each school its own unique identity and distinguish it from other schools.*

Definition by Aqel (1964): defines it as *the physical and social settings within which the educational and learning process takes place.*

From an educational perspective, the school environment can be viewed as comprising two fundamental components:

- **The Physical Environment:** This includes buildings, classrooms, facilities, cleanliness, safety measures, and educational resources.
- **The Social and Psychological Environment:** This encompasses the relationships among students, as well as between students, teachers, and the administration. It also includes the prevailing emotional climate within the school, characterized by cooperation, acceptance, discipline, and motivation.

2. Concept of a Safe School Environment (Hsaika, 2016) :

A *safe school environment* is one characterized by a sound educational climate that fosters effective learning and facilitates both teaching and instruction. Within such an environment, the educational process operates in a clear, organized, and structured manner, free from disruptive problems or conflicts. A safe school environment provides support to students and assists them in addressing and resolving their difficulties.

3. Importance of a Safe School Environment : The following are four key reasons why students need a safe school environment:

- **Academic Performance:** A safe school environment is essential for students' concentration and learning. When students feel secure, they are able to focus more effectively on their studies without the distraction of fear or anxiety. This sense of safety enables them to retain information more efficiently and to participate actively in classroom activities. Research has demonstrated a clear correlation between a safe learning environment and higher academic achievement. Schools that prioritize safety tend to have students who attain higher grades, perform better on standardized tests, and demonstrate overall stronger academic outcomes.
- **Emotional Well-Being:** Safety plays a crucial role in promoting students' mental health and emotional stability. A secure environment helps reduce stress and anxiety, allowing students to feel more relaxed, supported, and confident. Conversely, exposure to bullying, violence, or a general sense of insecurity can

have severe repercussions on students' psychological well-being. Such negative experiences may lead to diminished self-esteem, increased absenteeism, and even depression. Ensuring a safe school environment therefore contributes to cultivating a positive school culture that fosters emotional resilience and psychological growth among students.

- **Social Development:** Safe environments are essential for fostering healthy peer relationships. When students feel secure, they are more likely to engage positively with their classmates, leading to the formation of strong and supportive friendships. This sense of belonging to a cohesive community encourages prosocial behaviors such as cooperation, respect, and empathy. Within a safe environment, students are less likely to engage in negative behaviors such as bullying, aggression, or substance use, thereby promoting a more inclusive, respectful, and harmonious school culture.
- **Attendance and Participation:** The sense of safety has a significant impact on students' attendance rates. Students who feel secure at school are more likely to attend regularly, as they do not fear for their well-being. Regular attendance is crucial for academic success and the continuity of learning. Moreover, a safe school environment encourages students to participate in extracurricular activities, which are vital for holistic development. Engagement in sports, clubs, and other school-based activities helps students develop new skills, build self-confidence, and strengthen their sense of belonging within the school community.

4. Elements of a Safe School Environment

There are several key elements that contribute to creating and maintaining a safe school environment:

- **Physical Safety (Aggressive Behaviors):** Ensuring physical safety in schools involves both securing facilities and maintaining preparedness for emergencies. Securing the school premises includes proper maintenance of buildings, monitoring entrances and exits, and implementing clear visitor protocols. Emergency preparedness entails establishing detailed response plans for various scenarios such as fires, natural disasters, or intrusions. Regular safety drills enable students and staff to respond swiftly and effectively when needed. In addition, enhanced supervision and security measures—such as surveillance cameras, hallway monitors, and school resource officers—strengthen physical safety by preventing potential threats and allowing for immediate intervention when incidents occur.
- **Emotional Safety (Bullying and Social Isolation):** Emotional safety is no less important than physical safety. Schools must implement effective anti-bullying policies and programs to protect students from harassment and intimidation. Such initiatives should educate students about the harmful consequences of bullying and encourage bystanders to support victims.
- **Support systems**—including counseling services and peer support groups—provide students with safe channels to express their emotions and seek help when needed. School counselors can assist students in coping with psychological challenges, while peer support programs foster a sense of community, empathy, and mutual assistance among students.

- **Inclusive Culture:** Promoting an inclusive culture involves encouraging diversity, acceptance, and mutual respect within the school community. Inclusive policies and practices ensure that all students—regardless of their backgrounds—feel valued, respected, and supported. This includes implementing diversity training programs for staff and students, celebrating different cultures and traditions, and establishing clubs and activities that highlight and appreciate diverse identities. An inclusive culture reduces instances of discrimination and bias, making the school a welcoming and equitable space for everyone.
- **Health and Well-being:** Access to health services and nutritious food is fundamental to maintaining a safe school environment. Schools should provide on-site health services or establish partnerships with local healthcare providers to address students' physical and mental health needs. This includes the availability of school nurses and mental health counselors, as well as dental and vision care. Nutritional programs ensure that students receive balanced meals, which are essential for their physical health and academic performance. Additionally, initiatives that promote physical and mental well-being—such as physical education classes, sports teams, mindfulness activities, and mental health workshops—help students maintain a healthy lifestyle, enhance resilience, and manage stress effectively.

5.The Relationship Between a Safe School Environment and Behavioral Problems (Ibrahim et al., 2009):

When a school lacks a safe and healthy environment, students often experience frustration and boredom, which may lead to the emergence of inappropriate or disruptive behaviors. Aggressive conduct within schools has become an increasing concern, posing a potential threat to both the school community and societal stability.

Research findings have revealed a strong and statistically significant negative correlation between the availability of a healthy and safe school environment and the prevalence of behavioral problems among students. This negative relationship indicates that the more the school environment promotes safety—physically, psychologically, health-wise, and academically—the fewer behavioral issues students exhibit.

6. Addiction to Electronic Games

The phenomenon of *Internet Gaming Disorder (IGD)* represents a serious and escalating issue within the context of the rapid evolution of digital and technological societies. This behavioral trend has become a growing concern among parents, educators, and mental health professionals due to its widespread prevalence and the increasing number of affected adolescents.

Studies indicate that addiction to electronic games constitutes a fundamental behavioral pattern characterized by excessive engagement in gaming activities and the allocation of substantial amounts of time to them at the expense of other aspects of life. This excessive involvement often leads to undesirable forms of addiction, particularly in the absence of adequate parental supervision during adolescence.

Several empirical studies have highlighted significant correlations between video game addiction and a range of personal and environmental factors, such as low self-esteem, poor self-regulation, and the tendency for high levels of addiction to be associated with more severe psychological problems, including depression, anxiety,

and stress. Other research has examined the neurological and physiological mechanisms underlying such addiction, revealing its measurable impact on brain function and emotional regulation.

Although “gaming addiction” has been extensively discussed within medical and psychological fields, it has not yet been formally classified as a distinct disorder in the *Diagnostic and Statistical Manual of Mental Disorders (DSM)*.

Definition of Addiction: Addiction to electronic games is considered a behavioral form of addiction, as it meets the six core diagnostic criteria for addictive behavior: salience, mood modification, tolerance, withdrawal symptoms, conflict, and relapse.

6 Previous Studies :

1. Study by Mahmaoudi, Rokia (2013) (Mahmoudi, 2013):”*Does School Violence in Terms of Behaviors and Actions Draw Its Energy from the Symbols of Virtual Violence Contained in Violent Electronic Games? — An Analytical Reading*”.

This study aimed to investigate the extent to which the symbols of virtual violence embedded in violent electronic games contribute to the behaviors and actions associated with the phenomenon of school violence. The researcher relied on a critical and analytical review of several previous studies addressing this issue.

The study concluded that violent electronic games allow adolescents to embody the persona of the “invincible hero,” thereby facilitating the acquisition of aggressive behaviors through the learning and rehearsal of violent techniques. Such games also grant legitimacy to violent acts, leading adolescents to perceive them as socially acceptable and devoid of consequences or punishment.

The analysis further revealed that repeated and intensified exposure to violent content fosters the development of aggressive tendencies among adolescents. Since they often derive pleasure from violent scenes, and because the player actively manages the gaming scenario in an interactive manner, this immersion causes deep emotional and social engagement with the virtual world—blurring the boundaries between reality and the digital environment.

Additionally, the reviewed empirical tests indicated that engagement with violent games results in *desensitization*—a diminished sensitivity or emotional response to others’ suffering.

2. Study by Dr. Lamia Mohammed Naji Obaidat (2019) (Ubaydat, 2019):”*The Safe School Environment and Its Relationship with Behavioral Problems Among Upper Basic Stage Students from the Perspective of Educational Counselors in Irbid Governorate*”.

The study aimed to examine the extent to which a safe school environment is available and its relationship with behavioral problems among upper basic stage students. It employed a descriptive correlational method to explore this relationship. The sample consisted of 70 educational counselors (both male and female) working in the education directorates of Irbid Governorate. Data were collected through a structured questionnaire administered during the first semester of the 2018/2019 academic year.

The findings revealed a statistically significant negative correlation between the availability of a safe school environment and the prevalence of behavioral problems among students, as perceived by the educational counselors. The overall correlation

coefficient between the scale measuring the availability of safe environment elements and the scale of behavioral problems was -0.810, indicating a strong negative relationship. This means that the greater the availability of a safe school environment—whether in its physical, health, psychological, or academic dimensions—the fewer behavioral problems students are likely to exhibit.

3. Study by Boucheiban, Saliha, and Elachraf, Fatima (2019) (Boucheban & Al-Ashraf, 2019): *“The Impact of Children’s Use of Electronic Games on Academic Achievement*. This field study was conducted on a sample of school students in the Wilaya of Bordj Bou Arreridj, Algeria.

The research adopted a descriptive–analytical methodology and was guided by the Uses and Gratifications Theory, which posits that audiences are active participants who select media based on their personal needs and expectations. The study found that electronic games provide adolescents (specifically fourth-year middle school students) with various forms of gratification that motivate them to play and influence their behavior.

The study was conducted on a cluster sample of fourth-year middle school students at *Touait Ahmed Middle School* in Bordj Bou Arreridj. Data were collected using a questionnaire. The results revealed that the majority of participants owned gaming devices, with *PlayStation consoles* and *tablets* being the most common among Algerian households. Most students reported playing for more than three hours daily, primarily during the evening after school hours—a rate considered “high risk,” potentially leading to addiction and school dropout, particularly in the absence of parental supervision.

The study attributed the primary motivation for gaming to the sense of enjoyment and excitement it provides. Students preferred *action* and *sports* games due to their elements of challenge, adventure, and the simulation of favorite sports. The findings further indicated that excessive exposure to electronic games negatively affects students in several ways:

1. Decline in academic performance as a result of gaming addiction.
2. Neglect and poor concentration, as students increasingly ignore their studies both at school and at home.
3. Reduced classroom focus and attentiveness.
4. Physical fatigue following prolonged gaming sessions.
5. Deterioration in physical health, with the most affected body parts being the spine and **eyes**, leading to visual strain and decreased eyesight.

Ultimately, the study concluded that electronic games ranked first among children’s preferred activities. Due to their advanced technology and immersive features, these games have become a dominant part of children’s daily lives, significantly influencing their academic performance. The authors warned that children are drawn to these games without awareness of their physical, mental, or educational risks, which poses a serious threat to their academic achievement and overall well-being.

4. Study by Rahali, Halima, and Khettache, Mohamed (2021)³: *“Addiction to Electronic Games and Its Educational and Psychological Implications – A Field Study on a Sample of School-Aged Adolescents”*.

This study sought to explore how school-aged adolescents engage with electronic games—how they use them, for what purposes, and what the positive and negative indicators of gaming addiction are in both educational and psychological domains. The researchers adopted a descriptive–analytical approach and developed a questionnaire specifically designed for this purpose. The instrument consisted of 47 closed-ended items distributed across three dimensions: 15 items addressing gaming motivations, 12 items focusing on educational implications, and 20 items examining psychological implications. It also included open-ended questions for qualitative content analysis.

The validity and reliability of the questionnaire were confirmed using multiple methods, including discriminant validity, internal consistency, Cronbach’s Alpha, and the split-half method. The study was conducted on a sample of 70 male and female secondary school students from the Wilaya of Batna, Algeria.

The findings indicated that the majority of participants preferred combat, violent, and adventure games, such as *PUBG*, *Hellblade*, and *Spider-Man*. Furthermore, 70% of the respondents reported spending more than two hours daily playing electronic games—an elevated rate that, according to international standards, constitutes a threshold for addiction risk. In addition, 61.4% of participants expressed that they could not give up electronic games, suggesting a strong tendency toward addiction.

The results also revealed that 67.8% of the sample preferred individual games over multiplayer ones, and that mobile phones were identified as the primary medium for gaming due to their ease of use and accessibility. Overall, the study highlighted the prevalence of excessive gaming among adolescents and underscored its potential educational and psychological consequences, pointing to the urgent need for awareness and preventive interventions in the school context. The study also identified several motivations behind adolescents’ engagement in electronic games, including: coping with life pressures, lack of family communication, feelings of isolation and escapism, and a persistent desire to achieve victory. Less prominent motives included curiosity, interactivity, social participation, and the urge to defeat others.

The findings revealed multiple educational and psychological implications of electronic game addiction, which can be summarized as follows:

a. Educational Implications:

- **Positive Impacts:** Electronic games were found to enhance familiarity with modern technologies and improve attention, focus, and certain aspects of cognitive functioning such as problem-solving and intelligence.
- **Negative Impacts:** Excessive gaming was associated with mental distraction, neglect of homework and academic responsibilities, decreased academic achievement, and conflicts with teachers—especially when students played during class hours.

b. Psychological Implications:

- **Positive Impacts:** Electronic games can help adolescents build strong virtual social connections and provide a sense of enjoyment and accomplishment.
- **Negative Impacts:**

- **Aggression and Violence:** Gaming can enhance aggressive tendencies and provide adolescents with exposure to violent thoughts and behaviors.
- **Mental and Physical Health:** Addiction to gaming often leads to heightened tension and anxiety when away from games. It can also negatively affect physical health, causing weight gain, visual impairment, neck and back pain due to poor posture, sleep disturbances, and a loss of self-control.
- **Social Isolation:** Excessive gaming contributes to social withdrawal, reduced capacity to form meaningful real-life relationships, and diminished family communication.
- **Criminal Behavior Learning:** Some dangerous games—such as *The Blue Whale Challenge*—can expose players to harmful content, teaching them criminal or self-destructive behaviors that may even lead to suicide.

Overall, the study underscored the dual nature of electronic gaming—its limited cognitive benefits contrasted with its substantial educational, psychological, and social risks—and emphasized the urgent need for preventive educational strategies and parental supervision to mitigate its negative consequences.

5. Study by Ishaq, Romaysa, and Khreibech, Abdelkader (2022)²: “The Impact of Electronic Games on the Foundations of Socialization Among Youth”.

This study was based on an analytical review of international reports, statistical data, and previous exploratory research. It focused on youth and children as particularly sensitive and vulnerable demographic groups. The findings revealed that electronic games have become an inseparable part of children’s lives, exerting a profound influence on the process of socialization. These games increasingly dominate the cognitive and emotional worlds of children and adolescents, often leading to behaviors resembling addiction.

The study summarized the negative consequences of electronic games across several dimensions:

- **Behavioral and Security Risks:** Electronic games were found to foster violent tendencies by normalizing and even glorifying acts of aggression, such as killing or harming others for entertainment. Furthermore, some games were deemed particularly dangerous as they incorporate elements of surveillance and invasion of privacy, enabling the collection of personal data and tracking users’ locations and movements.
- **Social, Psychological, and Academic Effects:** The study reported that excessive gaming contributes to anxiety, depression, and social dysfunction, leading to weakened family communication, emotional isolation, and a pervasive sense of emptiness. Academically, it results in neglect of school responsibilities, truancy, and learning difficulties, as students increasingly disengage from academic pursuits.
- **Health Impacts:** The physical consequences include visual impairment, headaches, eye redness and dryness, physical fatigue, lower back pain, and various musculoskeletal issues resulting from prolonged sedentary gaming.
- **Prevalence and Addiction:** An exploratory survey revealed that 91% of children possess devices that enable them to play electronic games. Among them, 15%

reported gaming for more than three hours per day, while 55% played online games, with 40% of those interacting with unknown individuals on the internet.

Overall, the study concluded that electronic gaming poses significant behavioral, psychological, and social risks, warning that the growing normalization of this digital activity among children and youth threatens the integrity of the socialization process and requires urgent educational, familial, and regulatory interventions.

6. Study by Kexin Fan and Xuyin Zhang (2023)¹: "Video Game Addiction: Formation and Impact on Human Life".

This review study aimed to synthesize recent research on the development and effects of video game addiction on individuals' lives. The findings demonstrated a significant correlation between video game addiction and various personal factors, including mental health status, parental influences, and gender differences.

The study indicated that individuals with low self-esteem and poor self-control are more likely to develop addictive gaming behaviors. It also found that males, younger individuals, and unmarried persons are more prone to electronic game addiction. Furthermore, the research revealed a clear association between different types of addiction-related effects and the compulsive use of electronic games, encompassing both psychological and physiological dimensions.

Video game addiction was shown to negatively affect both mental and physical health, leading to outcomes such as aggression, anxiety, stress, depression, and insomnia. Moreover, individuals who exhibit higher levels of addiction tend to demonstrate weaker academic performance and lower quality of family relationships, underscoring the pervasive impact of gaming addiction on multiple aspects of human life.

7. Study by Deepak and Nazini (2024) (Deepak & Nazini, 2024): "Online Gaming Addiction and Its Impact on the Mental Health of Primary School Students".

This study yielded several important findings concerning the prevalence of online gaming addiction and its negative psychological and behavioral consequences among primary school students in India. Survey data revealed that more than one-quarter of primary school children suffer from worrying problems linked to electronic gaming addiction. The research demonstrated that online gaming addiction has profound implications for the mental health and overall well-being of children in this age group.

The study showed that addiction to online games leads to behavioral and emotional disturbances, manifested through symptoms such as depression, anxiety, social distress, sleep disorders, neglect of responsibilities, and increased aggression. It further highlighted that children's behavioral changes are significantly influenced by the content of the games they are exposed to. Among the contributing factors to addiction were parental purchasing and approval of games without full awareness of their potential impact, as well as the endorsement of gaming culture by social media influencers, both of which exacerbate the problem. Additionally, the study pointed out that the interactive nature of online gaming environments exposes children to bullying and harassment, creating distressing experiences for young players. Exposure to such negative interactions often results in frustration, loss of motivation, emotional distress, and social isolation, all of which adversely affect children's self-confidence,

self-esteem, and anxiety levels. Overall, the findings underscore the urgent need for greater parental awareness, educational interventions, and digital content regulation to safeguard children's mental health and ensure a safe digital environment for early learners.

8.Study by Amrouche, Mariem, and Maouch, Abdelhamid (2025) (Amrouche & Maouch, 2025):*"Separation Anxiety and Its Relationship with Electronic Game Addiction Among Primary School Students"*.

This study aimed to explore the correlation between separation anxiety and electronic game addiction among primary school pupils. It also sought to determine the extent to which electronic game addiction could be predicted based on levels of separation anxiety. The researchers employed a descriptive–correlational analytical method, with a purposive sample of 32 students (boys and girls) enrolled in the third and fourth grades during the 2023–2024 academic year. Participants were intentionally selected for having high scores on a standardized Separation Anxiety Scale. Data were collected using two instruments: the Separation Anxiety Scale and a 21-item Electronic Game Addiction Scale.

After analyzing the data, the study revealed several key findings:

- There exists a positive and statistically significant correlation between separation anxiety and electronic game addiction among the sampled students.
- It was found that separation anxiety predicts electronic game addiction, with regression analysis showing that it accounts for approximately 23% of the variance in addiction levels.
- The results also showed statistically significant gender differences in electronic game addiction in favor of male students.

The researchers interpreted this positive correlation as stemming from the tendency of anxious individuals to seek stimulation and distraction through the latest and most engaging forms of digital technology, leading to increased dependency on such platforms. They further suggested that children experiencing separation anxiety may turn to easily accessible, consistent activities—such as electronic games—as a form of emotional escape from negative feelings. The observed gender differences, favoring boys, were attributed to the gendered design of many electronic games, which often feature male-oriented storylines, competitive dynamics, and action-based challenges, making them more appealing to male students. Overall, the study underscored the psychological dimension of electronic game addiction, emphasizing the need for early identification and intervention to address emotional vulnerabilities that predispose children to excessive gaming behaviors.

Second : Methodological Procedures of the Study

1 Research Method:

This research falls within the framework of descriptive–analytical studies of a review nature (Review Study). It is based on the collection, examination, and analysis of previous research that has addressed the relationship between electronic game addiction and its negative impacts on students. The objective is to identify, synthesize, and categorize the adverse effects of electronic gaming from various perspectives, while highlighting the points of convergence and divergence among the reviewed studies.

2 Population and Sample of the Study:

1. **Population:** All academic studies (including peer-reviewed journal articles, university theses, and research reports) published between 2010 and 2025 that focus on the topic of electronic game addiction or the health and safety of the school environment.
2. **Sample:** A total of eight studies were selected—five local, one Arab, and two international—that specifically addressed the negative impacts of electronic game addiction on students' physical and psychological health, academic performance, and its connection to the school environment.

3 Study Delimitations:

1. **Human Delimitation:** The study is limited to research that focuses on the negative effects of electronic game addiction.
2. **Temporal Delimitation:** It includes studies published between 2010 and 2025.
3. **Topical Delimitation:** The study emphasizes the negative dimensions of electronic games and their impact on the school environment.

4 Adopted Method:

The study employs a descriptive–analytical approach, combining qualitative synthesis and comparative analysis of previous research to derive a comprehensive understanding of the phenomenon.

Third : Analysis of Results in Light of Previous Studies

1 The Prevalence of Electronic Game Addiction Among Adolescent Students in Algerian Schools:

The findings indicate that electronic game addiction among school-aged adolescents in Algeria is on the rise, a trend that mirrors global patterns documented in previous studies. This growing prevalence can be attributed to several interrelated factors, including:

- The wide availability and appealing design of electronic games that capture users' attention through immersive and rewarding mechanics;
- The influence of peers, as social pressure and shared gaming culture reinforce regular play;
- The widespread use of smartphones within households, as these devices have become affordable, easily accessible, and user-friendly due to the country's rapid digital transformation;
- Universal internet access in most homes, enabling continuous online engagement;
- Weak parental supervision, influenced by parents' limited awareness, demanding work schedules, or insufficient digital literacy;
- The lack of preventive counseling and awareness programs addressing the risks of gaming addiction;
- The scarcity of recreational and extracurricular activities dedicated to children and adolescents, leaving them with few alternatives for leisure.

Based on the synthesis of prior research, the formation of video game addiction can be understood as the result of the interaction between personal, environmental, and gender-related factors.

1. Personal Factors :

- **Mental Health:** Video game addiction has been consistently linked to poor mental health. Studies demonstrate that higher levels of gaming addiction correlate strongly with increased symptoms of depression, anxiety, and stress (Fan & Zhang, 2023; Deepak & Nazini, 2024).
- **Self-Esteem and Self-Control:** Low self-esteem is a significant predictor of online gaming addiction; the lower an individual's self-regard, the greater the likelihood of compulsive gaming. Similarly, weak self-control is negatively associated with self-regulation, leading to stronger tendencies toward addiction (Kexin Fan & Zhang, 2023).
- **Attention-Deficit/Hyperactivity Disorder (ADHD):** Adolescents exhibiting symptoms of ADHD have been found to be at a higher risk of developing video game addiction due to impulsivity and difficulty maintaining focus (Rahali & Khettache, 2021).

2. Environmental Factors :

- **Parenting Styles:** Negative or authoritarian parenting styles are closely related to gaming addiction. Adolescents exposed to excessive parental control or lack of emotional warmth often resort to gaming as a coping mechanism or as a form of psychological compensation (Ishaq & Khreibech, 2022).
- **Family Background :** Adolescents from dual-income households show higher scores on addiction components such as salience, tolerance, and withdrawal, likely due to reduced parental presence and supervision. Meanwhile, adolescents from multicultural or socially diverse families exhibit higher levels of mood modification, suggesting that varied social contexts may influence emotional engagement with gaming.

3. Gender Differences :

- Demographic factors such as being male, younger in age, and unmarried are more strongly associated with video game addiction (Fan & Zhang, 2023).
- Male adolescents are particularly at risk, showing higher addiction scores, especially those with lower self-esteem and reduced life satisfaction. This aligns with findings by Amrouche and Maouch (2025), who reported that boys exhibit significantly higher gaming addiction levels, a result attributed to the male-oriented design of many video games emphasizing competition, combat, and dominance.

In summary, the analysis confirms that electronic game addiction among Algerian adolescents is a multifactorial phenomenon, rooted in psychological vulnerabilities, family dynamics, and sociocultural contexts. These findings underscore the urgent need for integrated intervention strategies, including family education, school-based prevention programs, and broader societal awareness initiatives to mitigate the escalating risks associated with excessive gaming.

2 The Effects of Video Game Addiction on the Health and Safety of the School Environment

Recent empirical and theoretical research—both national and international—has established that the phenomenon of video game addiction extends beyond the psychological domain of individual players to exert a broader influence on the overall school ecosystem. Its repercussions permeate the emotional, educational, and social

climate of schools, posing significant threats to their health, safety, and moral stability.

1. Psychological Effects of Video Game Addiction

The psychological consequences of video game addiction represent some of the most critical and far-reaching impacts of this phenomenon. These effects extend beyond transient emotional states, influencing the learner's cognitive, affective, and behavioral dimensions, thereby undermining overall psychological balance and social adjustment both within and beyond the school environment.

- **Anxiety and Depression :** A substantial body of research has established a strong correlation between excessive gaming and increased levels of anxiety and depression. Prolonged engagement in gaming activities fosters mood disturbances characterized by persistent sadness, emotional emptiness, and social withdrawal. Such symptoms hinder classroom participation and diminish intrinsic motivation to learn.
- **Emotional Instability:** Addicted students often exhibit heightened irritability, impatience, and difficulty in emotional regulation, particularly when prevented from gaming or when they fail to achieve in-game goals. This pattern of behavior reflects underlying affective dysregulation and increases the likelihood of aggressive or oppositional conduct within the school setting.
- **Attention Deficits and Cognitive Impairment :** Continuous exposure to the fast-paced and highly stimulating environments of digital games reduces the capacity for sustained attention and focus. Consequently, addicted students frequently demonstrate diminished academic performance, slower cognitive processing, and difficulty retaining or organizing information.
- **Psychological and Behavioral Dependence:** Over time, gaming becomes a maladaptive coping mechanism for managing stress, boredom, or emotional discomfort. This psychological dependence evolves into a compulsive behavioral pattern that is resistant to self-control, meeting key criteria for behavioral addiction.
- **Cognitive and Affective Dysregulation:** Neuropsychological studies indicate that gaming addiction alters the brain's reward circuitry, leading to impaired impulse control, emotional instability, and deficits in executive functioning. These changes contribute to poor decision-making, reduced empathy, and difficulty managing frustration.
- **Social Withdrawal and Emotional Desensitization:** Addicted individuals increasingly withdraw from real-world social interactions, preferring virtual engagement over face-to-face relationships. This behavioral isolation often leads to emotional desensitization—a diminished capacity for empathy and affective responsiveness—further exacerbating social alienation and interpersonal difficulties.

2. Physical Health Effects of Video Game Addiction:

The physical consequences of excessive video game engagement extend beyond mere fatigue, encompassing a range of musculoskeletal, visual, and physiological impairments that can significantly affect students' overall health and academic functionality. Prolonged gaming sessions and sedentary habits alter bodily rhythms, disrupt sleep patterns, and reduce physical vitality—all of which undermine the learner's readiness and well-being within the school environment.

- **Visual Strain and Ocular Fatigue:** Extended screen exposure leads to a condition commonly referred to as *Digital Eye Strain (DES)*, characterized by blurred vision, dryness, redness, and eye irritation. The repetitive visual focus required during gaming diminishes blinking frequency, resulting in ocular tension and potential long-term visual impairment. Persistent exposure to high-intensity graphics and rapid motion further aggravates these symptoms, reducing visual endurance and comfort.
- **Musculoskeletal Disorders:** Sustained poor posture and repetitive movements during gaming sessions contribute to musculoskeletal strain, particularly in the neck, shoulders, and lower back. Continuous sitting without proper ergonomic support may lead to chronic pain, spinal misalignment, and early onset of postural deformities among adolescents. Overuse injuries affecting the wrists, hands, and thumbs—such as tendinitis and “gamer’s thumb”—are also frequently reported.
- **Sedentary Lifestyle and Obesity:** Excessive gaming inherently promotes a sedentary lifestyle, characterized by minimal physical activity and extended screen time. The lack of movement decreases energy expenditure, impairs cardiovascular function, and increases the risk of childhood obesity. Over time, this inactivity contributes to reduced physical endurance and weakened muscular coordination.
- **Sleep Disorders and Fatigue :**Irregular gaming habits, particularly late-night sessions, disrupt circadian rhythms and delay melatonin secretion due to prolonged exposure to blue light emitted from LED screens. These disruptions cause sleep deprivation, insomnia, and chronic fatigue, leading to decreased concentration and alertness in academic settings. Poor sleep quality also weakens the immune system and affects emotional stability.
- **Neurological and Physiological Strain :** Prolonged gaming can induce neurophysiological stress, including elevated heart rate, hormonal imbalance, and increased cortisol levels associated with chronic arousal. These physiological responses, combined with long-term inactivity, may predispose adolescents to cardiovascular and metabolic risks later in life.

3. Behavioral and Social Effects of Video Game Addiction

Video game addiction exerts a profound influence on students’ behavior and social functioning, reshaping interpersonal dynamics within and beyond the school environment. As excessive engagement in gaming becomes a dominant part of daily life, students often exhibit maladaptive behavioral patterns and diminished social connectedness. These consequences extend beyond individual habits to affect classroom climate, peer relationships, and overall school cohesion.

- **Social Isolation and Withdrawal:** Excessive gaming frequently results in reduced face-to-face interaction, as students become increasingly immersed in virtual environments at the expense of real-world relationships. This isolation weakens communication skills, reduces emotional reciprocity, and diminishes the sense of belonging within peer groups. Over time, social withdrawal may contribute to loneliness, anxiety, and difficulty integrating into collaborative learning contexts.
- **Aggression and Desensitization to Violence:** Repeated exposure to violent or combat-oriented video games can normalize aggressive behavior and diminish empathy toward others. Research (e.g., Mahmoudi, 2013; Rahali & Khetach, 2021) demonstrates that such exposure fosters emotional desensitization—a gradual reduction in sensitivity to violent stimuli—and increases the likelihood of verbal or

physical aggression among adolescents. These tendencies, when manifested in school settings, disrupt discipline and compromise the safety and psychological well-being of peers.

- **Behavioral Dysregulation and Impulsivity:** Gaming addiction often leads to decreased self-control and heightened impulsivity. Students may struggle to adhere to school rules or classroom norms, frequently displaying irritability, restlessness, or difficulty transitioning between tasks. The pursuit of instant gratification within gaming environments can condition students to expect immediate rewards, thereby undermining patience, persistence, and long-term goal orientation in academic and social contexts.
- **Poor School Discipline and Attendance:** Addicted students tend to exhibit patterns of lateness, absenteeism, and inattentiveness during lessons. Late-night gaming sessions cause fatigue, which in turn reduces punctuality and engagement in school activities. Teachers often report behavioral issues such as distraction, defiance, and diminished participation, all of which weaken the overall learning environment.
- **Cyberbullying and Transference of Virtual Aggression:** Aggressive online interactions frequently extend beyond the digital realm into real-life bullying behaviors. The anonymity of gaming platforms can reinforce antisocial conduct—such as harassment or mockery—that later manifests within school contexts as verbal abuse, social exclusion, or physical bullying. This transference of virtual aggression contributes to a climate of hostility and fear, undermining students' psychological security.
- **Erosion of Social Values and Empathy:** The repetitive exposure to competitive, self-centered virtual environments can distort moral and social development. Addicted players may prioritize individual victory over cooperation and disregard ethical boundaries, leading to diminished empathy, respect, and altruism. Over time, these behavioral shifts can weaken community spirit and moral cohesion within the school.

4. Academic Effects of Video Game Addiction

Video game addiction significantly undermines students' academic engagement and cognitive development. As gaming becomes a dominant and compulsive behavior, it disrupts time management, concentration, and motivation—factors essential for effective learning and academic success. The cumulative impact of excessive gaming manifests in declining academic performance, reduced school participation, and diminished intellectual curiosity.

- **Decline in Academic Achievement:** Empirical research (e.g., Boucheban, 2019; Rahali & Khetach, 2021) demonstrates a consistent negative correlation between prolonged gaming and academic outcomes. Students who spend more than three hours daily on video games typically exhibit lower grades, incomplete assignments, and reduced classroom participation. The excessive allocation of time to gaming displaces productive academic activities such as reading, revision, and homework completion.
- **Reduced Motivation to Learn:** Video games provide immediate rewards and sensory stimulation, which contrast sharply with the delayed gratification inherent in academic learning. This dynamic fosters *reward dependency*, diminishing intrinsic motivation and perseverance in educational tasks. Students accustomed to

the fast-paced feedback of gaming environments often perceive classroom learning as monotonous, leading to disengagement and apathy toward schoolwork.

- **Diminished Attention and Working Memory:** Continuous exposure to highly stimulating virtual environments alters cognitive processing by over-activating the brain's reward circuitry. As a result, addicted students struggle to sustain attention and process complex information during lessons. Impairments in working memory and executive function hinder comprehension, problem-solving, and academic performance, particularly in subjects requiring sustained concentration such as mathematics and sciences.
- **Cognitive Overload and Mental Fatigue:** Excessive gaming taxes cognitive resources, leading to mental exhaustion and reduced academic efficiency. Prolonged screen time diminishes cognitive flexibility and increases susceptibility to distraction. Students may find it difficult to transition from virtual to academic tasks, as the brain remains conditioned to fast-paced, non-linear digital stimulation.
- **Disrupted Study Habits and Time Mismanagement:** Gaming addiction often results in poor study discipline and ineffective time management. The compulsion to play displaces scheduled study hours and reduces engagement in extracurricular learning activities. Chronic procrastination becomes common, as students prioritize gaming over school obligations, which perpetuates a cycle of underperformance and academic stress.
- **Academic Alienation and Dropout Risk :** As the addiction intensifies, students may experience academic alienation—detachment from school goals, teachers, and peers. Persistent failure and negative feedback can lead to frustration, diminished self-efficacy, and eventual school dropout. This disengagement not only affects individual educational trajectories but also contributes to broader institutional challenges such as increased absenteeism and reduced academic standards.

5. Implications for the Overall School Climate

The repercussions of video game addiction extend beyond individual behavioral or academic outcomes to shape the collective emotional and social atmosphere of the school environment. As the prevalence of gaming-related disorders increases, schools face growing challenges in maintaining psychological safety, discipline, and effective pedagogical engagement. The phenomenon not only influences interpersonal relationships among students and teachers but also disrupts the moral and organizational fabric essential to a healthy learning climate.

- **Disruption of Discipline and Institutional Order:** Addicted students often display restlessness, inattentiveness, and resistance to authority, undermining classroom discipline and the overall order of the school. The resulting behavioral disruptions—such as tardiness, defiance, and inattentive participation—create tension between students and educators, eroding the consistency of the instructional process. Over time, this contributes to a decline in collective responsibility and respect for institutional norms.
- **Erosion of Teacher–Student Relationships:** Video game addiction can distort teacher–student dynamics by fostering attitudes of disengagement, apathy, or defiance among students. These behaviors strain the rapport essential for effective teaching and learning. Educators may experience frustration or burnout when managing chronically inattentive or aggressive students, which in turn reduces emotional support and pedagogical effectiveness within the classroom.

- **Diminished Sense of Safety and Belonging:** The rise of aggressive tendencies and cyberbullying associated with gaming addiction threatens the emotional security of the school environment. Students who experience or witness such behaviors often report feelings of fear, alienation, and mistrust, leading to a weakened sense of belonging. When the school environment ceases to feel psychologically and physically safe, students' engagement, motivation, and learning outcomes are profoundly affected.
- **Undermining of Moral and Social Values:** Excessive exposure to violent or morally ambiguous gaming narratives may influence students' ethical frameworks, weakening empathy, respect, and civic responsibility. The normalization of competitive and self-centered behavior in virtual settings can spill over into real-world interactions, promoting individualism at the expense of collaboration and community cohesion. This erosion of moral values undermines the school's role as a primary institution for socialization and character education.
- **Impact on Institutional Cohesion and Educational Mission:** The collective effects of gaming addiction—reduced discipline, weakened relationships, and moral disengagement—challenge the school's mission to foster holistic development. When educational environments become fragmented by behavioral and emotional instability, the institution's capacity to promote academic excellence, social inclusion, and civic responsibility is compromised. Consequently, maintaining a positive school climate requires systemic interventions that address not only individual addiction but also its broader psychosocial implications.

Discussion :

In conclusion, video game addiction thus represents not merely an individual pathology but a systemic challenge to the educational environment Figure(1). Its multifaceted impact—spanning psychological, behavioral, and institutional dimensions—necessitates a coordinated response from educators, families, and policymakers. Promoting digital literacy, enforcing balanced technology use, and fostering psychosocial well-being are essential to preserving a safe, healthy, and morally grounded school climate that supports the comprehensive development of all learners.

Hence, these findings highlight the urgent need for preventive and educational interventions from families, schools, and educational authorities to promote a safe and healthy school environment that supports the holistic development of learners.

While electronic games may offer limited cognitive engagement and entertainment benefits, a substantial body of scientific evidence underscores their adverse long-term consequences when usage becomes excessive or compulsive. The cumulative physical, psychological, and social impairments linked to gaming addiction pose serious risks not only to individual health and academic achievement but also to the overall safety, harmony, and moral fabric of the school environment.

Video game addiction manifests as a multifaceted problem encompassing religious, behavioral, physical, social, psychological, and academic dimensions. Collectively, these effects undermine both the personal development of students and the integrity of the educational setting. Consequently, it is imperative for educators, parents, and policymakers to acknowledge gaming addiction as a pressing public

health and educational concern that necessitates the implementation of preventive measures, digital literacy initiatives, and targeted psychosocial interventions.

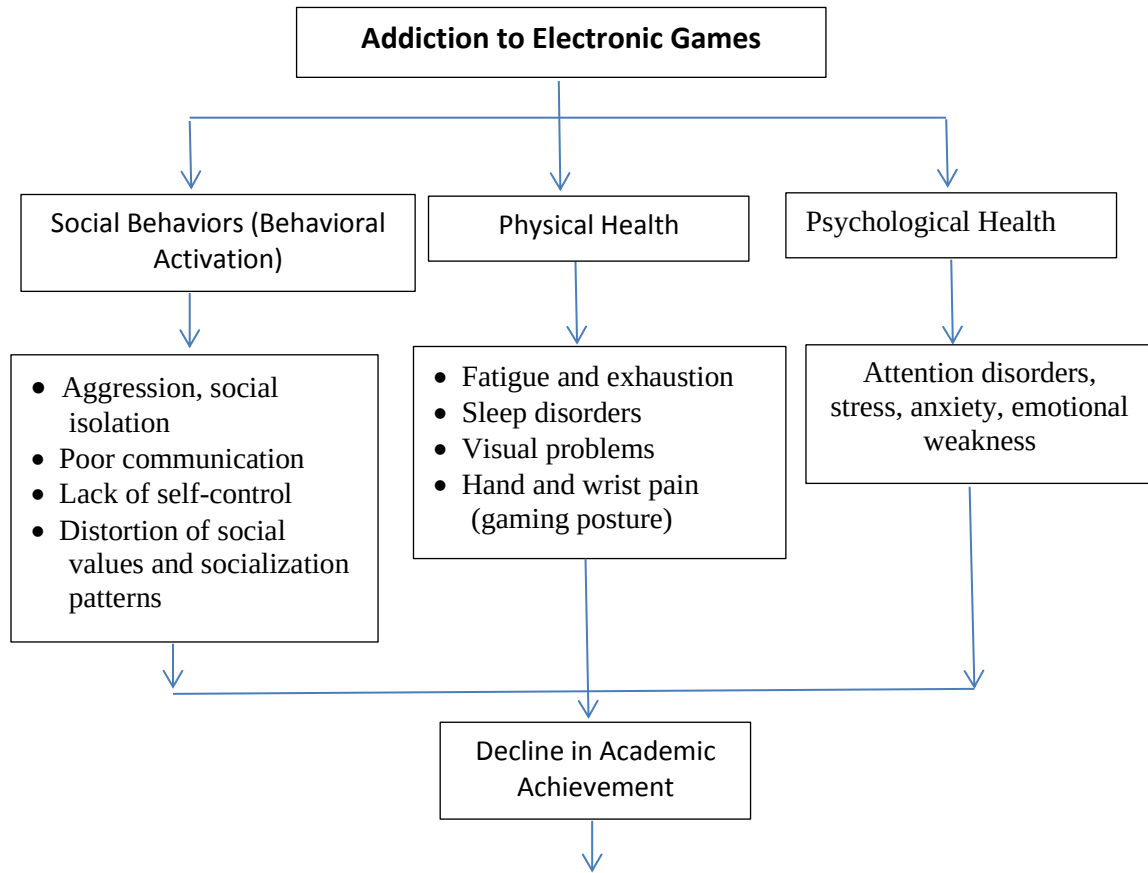
Empirical evidence from previous studies consistently indicates that addiction to electronic games has become a rapidly expanding phenomenon, yielding numerous detrimental outcomes on both mental and physical well-being. This form of addiction exerts a profound influence on students' behavior, fostering academic disengagement, chronic fatigue resulting from disrupted sleep patterns and excessive late-night gaming, and social withdrawal due to a diminished ability to communicate effectively with family members or peers. Such detachment reflects an increasing immersion in virtual realities, often at the expense of real-world interaction and emotional regulation.

Furthermore, addicted students frequently display reduced concentration, visual strain, **and** physical discomfort, which contribute to heightened distraction and behavioral disorder within the classroom. These manifestations not only disrupt the learning environment but also impede teachers' instructional performance, diminish peer attentiveness, and ultimately hinder academic achievement and the effectiveness of the overall educational process.

Aggressive and antisocial behaviors also emerge as significant consequences of prolonged exposure to violent or combat-oriented game content. This exposure fosters emotional desensitization—a blunted empathetic response to violence—and may incite the imitation of destructive or high-risk behaviors. In severe cases, these tendencies can lead to self-harming actions, suicidal ideation, or peer-directed aggression, thus intensifying instances of verbal and physical bullying and contributing to higher rates of school dropout.

In light of these findings, it can be concluded that the hypothesis asserting that addiction to electronic games among students negatively affects the health and safety of the Algerian school environment has been empirically substantiated. The convergence of evidence across multiple studies highlights the urgent need for integrated preventive strategies, family involvement, and institutional awareness to mitigate the adverse effects of this growing phenomenon on student well-being and educational quality.

Figure (1)
Representation of the Negative Effects of Electronic Game Addiction in



Deterioration of the Health, Safety, and Well-being of the School Environment as a Result of:

- Students' neglect of their academic duties and responsibilities.
- Increased absenteeism and avoidance of school attendance.
- Learning difficulties and a decline in academic achievement.
- Persistent fatigue, lack of focus, and reduced attention due to insufficient sleep.
- Discomfort caused by psychological and physical disorders such as visual impairment, neck and spinal pain, finger strain, anxiety, depression, obesity, and physical inactivity.
- A growing sense of isolation and an inability to communicate or build social relationships as a result of living in virtual environments.
- The spread of psychological, social, physical, and cognitive disorders among students within the school setting, leading to a deterioration of the overall school climate and academic performance.
- The prevalence of verbal and physical aggression among students.
- The internalization of negative values and behaviors that conflict with societal norms and cultural traditions.

The findings of this review reveal that, although electronic games may offer educational and recreational benefits when used moderately, their excessive and uncontrolled use can lead to serious behavioral, psychological, and social consequences. When gaming becomes a form of behavioral addiction, it adversely affects the health, safety, and harmony of the school environment, particularly the

quality of relationships among students, teachers, and administrators—relationships that form the foundation of an effective educational process.

Moreover, electronic games transmit implicit cultural and ideological messages that can subtly influence the learner's value system and worldview. This influence operates through three main dimensions:

1. **The Dual Nature of Games and Coded Messaging:** Electronic games serve not only as tools for entertainment and education but also as media platforms that encode and transmit cultural, political, and religious messages. Through role-playing mechanisms, they encourage children and adolescents to identify with characters situated in virtual worlds often dominated by violence and conflict, shaping their moral and cognitive frameworks.
2. **Distortion of Reality and Behavioral Modeling:** A critical risk lies in the blurring of boundaries between fantasy and reality, leading players to internalize and replicate virtual behaviors in real life. Such imitation fosters behavioral stereotyping, emotional desensitization to violence, and normalization of aggressive conduct.
3. **Comprehensive Health Implications:** The effects of gaming addiction extend to both physical and psychological health. Excessive gaming contributes to eye strain, sleep deprivation, musculoskeletal pain, anxiety, depression, and social withdrawal. Furthermore, certain extreme games—such as *The Blue Whale* or *Momo Challenge*—have been linked to self-harm and suicidal behaviors among children, underscoring the urgency of preventive action.

Recommendations:

Based on the analysis, the following recommendations are proposed to mitigate the negative effects of gaming addiction and foster a safer, healthier school environment:

- **Media Awareness:** Strengthen the role of mass media and educational campaigns in informing parents, teachers, and students about the potential risks of excessive gaming and promoting healthy, balanced alternatives such as sports, cultural activities, and intellectual competitions.
- **Vigilance and Preventive Action:** Encourage collective vigilance among educators, parents, and policymakers regarding the harmful effects of gaming addiction on both physical and mental health. Early detection and preventive interventions are essential.
- **Parental Guidance and Counseling:** Provide psychological counseling and educational guidance to families to help them understand the psychological mechanisms of gaming addiction and to equip them with tools for effective supervision and communication with their children.
- **Family Supervision and Regulation:** Emphasize active parental monitoring of game content, duration, and player interaction to ensure that children are not exposed to violent or culturally inappropriate material.
- **Balanced Lifestyle Promotion:** Motivate children and adolescents to participate in constructive recreational and sports activities, cultivate creative hobbies (such as drawing and reading), and develop time-management skills that balance gaming with study and rest.

- Enhancing Family Communication: Foster open and empathetic family dialogue to better understand children's interests, emotional needs, and online behaviors, thereby strengthening trust and facilitating proper guidance.

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