

Understanding the effects of videogames on children and adolescents – A literature review

فهم تأثيرات ألعاب الفيديو على الأطفال والمراهقين – مراجعة للأدبيات

Amel Fadhloune*, Oum El Bouaghi University, Algeria.

fadhloune.ame@gmail.com

Date de réception:(01/04/2020) , Date de révision: (30/08/2020), Date d'acceptation : (06/10/2020)

Abstract :

ملخص :

Videogames have become an extremely popular leisure activity among Children, adolescents and even adults, we spend notable amounts of time experiencing an increasing virtualization and rather unexpected ludification of the way we communicate, collaborate, learn, consume or entertain ourselves, the latest Analysis of the rapidly growing game market show that videogames are becoming the most frequently used 'interactive media' amongst all age groups and the world's largest entertainment medium capturing an ever increasing proportion of both youth and adult leisure time and energy, our primary aim through this paper is to identify the phenomenon , set a validated definition of the concept, then describe various types of videogames and the major elements that attracts players, in addition to the most generated consequences and its ambivalent impacts on children and adolescents.

Keywords : understanding ,effects
videogames, children, adolescents

أصبحت ألعاب الفيديو نشاطاً ترفيهياً شائعاً للغاية بين الأطفال والمراهقين وحتى البالغين منهم، حيث نقضي أوقاتاً معتبرة في اختبار عوالم افتراضية، نلعب، نتواصل، نتعاون ، نتعلم ، نستهلك و نتسلق ونفر عن أنفسنا، إذ تشير آخر إحصائيات سوق ألعاب الفيديو الى النمو السريع لهذه الألعاب، حيث أصبحت "الوسائط التفاعلية" الأكثر استخداماً بغض النظر عن الفئة العمرية اين تستهلك نسباً متزايدة من وقت الفراغ وطاقة الشباب والبالغين، عليه نهدف من خلال هذه الورقة الى تحديد الظاهرة، أنواعها المختلفة وعناصر جذبها الرئيسية ، بالإضافة إلى التطرق الى ثنائيات تأثيراتها على الأطفال والمراهقين.

الكلمات المفتاحية: فهم، الاثار، ألعاب الفيديو ،
الأطفال، المراهقون.

Auteur correspondant: Amel Fadhloune, Email: fadhloune.ame@gmail.com*

1. Introduction

Videogames have become an extremely popular leisure activity among Children, adolescents and even adults, we spend notable amounts of time experiencing an increasing virtualization and rather unexpected ludification of the way we communicate, collaborate, learn, consume or entertain ourselves, according to a study conducted by Interactive Software Federation of Europe (ISFE) twenty-five percent of the European online respondents play videogames at least once per week, so gaming is not reserved only for children and adolescents or only boys, this phenomena has reached all ages and both genders, the average player age is 35 years and 45% of all gamers are female.

Networked games have become a larger part of everyday lifestyle, with an average that exceeds 80% in European countries, USA, south Korea and China and other parts of the world according to the Global e-commerce intelligence report, these estimations are not quite different from those in the rest of the world, even in the so-called developing and underdeveloped countries. With digital games earning US\$109.1 Bn globally in 2018 as reported in the Super Data review 2019 and around US\$137.8Bn according to the global games market report 2018, distributed as follows: Console games US\$34.6 Bn, Tablet games US\$13.9Bn, Smart phone games US\$56.4Bn, Downloaded/Boxed PC US\$28.6Bn, Browser Pc gamers US\$4.3Bn, the online gaming industry as well is a highly profitable business thanks to expanded internet capabilities, mobile technologies and affordable connected devices have revolutionized the industry and opened doors to a new generation of gamers – changing the modes they communicate and interact with other gamers and as spectators, Video games range from all sorts of digital applications and consoles such as PlayStation, GameCube, and Xbox. Therefore, the concept of gaming has transferred from being a form of entertainment to a form of technological literacy, which refers in its most basic level to video game play as a form of digital literacy practice.

In recent years, researchers all over the globe have been trying to shed light on many issues associated to gaming and different psychiatric, sociological disorders and psychological determinants, to the extent that the latest edition version of the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) included in its Section 3 Internet Gaming Disorder (IGD) as a condition for further empirical study and proposed nine criteria for the diagnosis of IGD refers to problematic use of online and offline video games.

Even though there is still a lack of common understanding of the exact definition and name of the issues generated by video gaming, and since decades researchers have used a variety of terminologies to refer to the definition of videogames and its harmful use such as problem videogame playing, video game bullying, problematic online game play, videogame addiction, online gaming addiction, Internet gaming addiction, and compulsive Internet use, therefore, despite of the praised entertainment virtues, teaching and learning qualities of videogames and their potentials in empowerment and social inclusion of some groups...yet, their increasing use has raised concern about the possible negative consequences for gamers, especially among children and adolescents.

Stemming from the multiple afore-mentioned concerns that practically revolves

around video gaming effects, and before we go further, it is essential to determine:

- What we mean by videogames in terms of definition?
- How they differ from other media (e.g., books, television, movies)?
- What are the different elements of videogames?
- What are the effects of videogames on children and adolescents?
- What are the potential perspectives of videogames beyond their negative effects?

The major purpose of this work is to answer the afore-mentioned questions with the assistance of a thorough review of videogames literature and significant works on the subject, in order to define, and describe the various types of videogames and specify the major elements that attracts players, in addition to the most generated consequences and impacts on children and adolescents, besides examining the potential perspectives of videogames.

2. The Importance of the Study

The importance and the significance of the actual study stands from the fact that many researchers from different countries and from different human and social disciplines believe that videogames and online gaming influence all aspects of humans' lives, including health, behaviors, values, social interactions, religious and spiritual life, school performance, and occupation decisions... Thus, videogame use and experiences have a far-reaching impact on day to day human life. The scope of this paper is to shed light on videogames in general and to trace their effects through the relationship between aggression, violent behaviors and violent videogames, without neglecting the beneficial aspects of these games when applied in other fields such as learning and teaching experiences, which represent a key point for videogames potentials, consequently the decision to focus on videogames is primarily held to understand contemporary videogames studies and their trends in the academic world, since this phenomenon is an undoubtedly contemporary reality that embody some of the most important aspects of contemporary society.

3. Definition of videogames

Starting either from their popularity, or their excessive use, many studies refer to videogames as a popular source of entertainment among children and adolescents, whereas some of them associate videogames to their outlets and implications, that generally fall into the category of "Internet gaming disorder," which is closely related to impulse control disorder and often compared with gambling addiction (Nazmus Saquibet Al, 2017, p112) due to the emergence of ICTs, that transformed the world into a hyperconnected societies. Henceforth, video games are often characterized accordingly as playing any type of single- or multiplayer commercial video game via any Internet-connected device, including dedicated consoles, desktop computers, laptops, tablets and mobile phones.

Indeed, we cannot speak anymore about videogames without mentioning 'online gaming ecosystem' which includes online playing and watching others play video games via e-sports, streaming or video-sharing platforms, which typically provide options for viewers to comment on or interact with the players and other members of the audience. In simple words, videogames are any of various interactive games and applications played using a specialized electronic gaming device, a computer, mobile device, a tablet, a television or other display screen, along with a means to control graphic images (<https://www.dictionary.com/browse/images>) According to Crawford the interactions between players or between a player and a videogame can be

perceived as a dialogue: “A cyclic process in which two active agents alternately (and metaphorically) listen, think, and speak.” (Damien Djaouti et Al, 2008, p01), so videogames must be perceived beyond their elements, but rather with their implications, interactions, consequences on the players and their direct environment. The most essential distinguishing feature of video games is that they are interactive; players cannot passively surrender to a game’s storyline. Instead, video games are designed for players to actively engage with their systems and for these systems to, in turn, react to players’ agentive behaviors. There are millions of video games, with vastly different themes and goals. These games can be played cooperatively or competitively, alone, with other physically present players, or with thousands of other online players, and they are played on various devices from consoles to smartphones.

4. The elements of Videogames

The User or the player is one of the most prominent elements of videogames game to the extent that a considerable body of literature focuses on player behaviors that border with pathological addiction, aggressive and violent behaviors, social distancing... (Andreas Alexiou and Michael C. Schippers, 2018, p5) next to the player we have:

- a. The game system (rules, mechanics); it incorporates a set of specific game rules and mechanics that facilitates the navigation in the overall environment of the game, and determines the degrees of freedom that players have during gameplay and define the laws that govern the virtual environment. These rules and laws develop and sharpen the cognitive skills of the players, such as neural processing and efficiency, spatial skills, enhanced mental rotation abilities, problem solving skills and creativity. The game system incorporates a set of rules and mechanics.
- b. Narrative (theme, story, characters), the narrative elements provide with excellent platforms for thought experiments and simulations of ‘model behavior’.
- c. Aesthetics (audiovisual elements, fidelity, aesthetic choices), game aesthetics guarantee the necessary fidelity and realism that brings the other two aforementioned game layers to life.

5. The ambivalent effects of videogames

Although the time spent playing games can crowd out other activities children may benefit from or be expected to participate in, videogame playing is not different from any other hobby they might engage in. Whether gaming is accepted as a ‘good’ hobby or not is often based on cultural norms and expectations. In some contexts, for example, children are expected to spend most of their time in school or on extra-curricular activities and girls in particular, maybe restricted from having access to devices connected to the Internet (UNICEF, 2019, p12).

A great number of studies have reported that excessive and heavy video game playing may lead to adverse impacts on health status or health-related determinants among players, especially children and adolescents. It is argued that adolescents spend a notable amount of time using the computers or any screen device (smart phones, Ipads..), which is unfavorably related and assimilated to health, psychological and social related determinants such as life appreciation, health responsibility, social support, and exercise behavior. Nevertheless, many researches and theories insist strongly on the positive and satisfactory feeling of gameplay like:

- Challenge and feedback: The theory of psychological flow advances that

there is a positive relationship between challenge and feedback. When a challenge is high but within the capabilities of the individual, the result is a state of consciousness characterized by extreme absorption, enjoyment and feelings of achievement.

- Goal setting: goal setting in videogames is typically invested through a system of objectives, quests and sub-quests which grow more challenging as the game progresses and oftentimes operate on a parallel fashion. Previous works have shown that game goals that are clear, specific, and challenging can generate greater persistence and enhance performance on behalf of the players.
- Increasing awareness and consciousness: It is evident in the fact that games play a central role in increasing students' intelligence quotients (IQ). Computer and videogames affect the psychomotor functions and decrease stress. Also, game play enhances logical thinking, analytical skills, movement, social skills, visual abilities, collaboration, and computing. In a study that examines the scope of knowledge and understanding about digital citizenship among Middle Eastern and US students at the University of Northern Colorado, Al-Hadlaq found that more than 80 % of students agree that the video games have positive effects in learning. In contrast, about 73 % expected video games could consume their time that will affect their learning achievement (Mohammed Alqurashi, Abdullah Alqahtani and Yousef Almoslamani, 2016, p170).

While educational games are specifically designed to promote pro-social behaviors, in most recreational games violence and competition are standard integral features. Consequently gaming is often associated with a range of negative effects including addiction, aggression and violence, social withdrawal, poor academic performance and health risks, negative impressions, lack of information. The World Health Organization (WHO) has recently included unhealthy engagement in gaming in the International Classification of Diseases as a 'Gaming Disorder', a classification intended to support those who suffer severe life impairments as a result of their gaming habits, which is defined as a pattern of gaming behavior characterized by impaired control over gaming, increasing priority given to gaming over other activities to the extent that gaming takes precedence over other interests and daily activities, and continuation or escalation of gaming despite the occurrence of negative consequences. The behavior pattern must be of sufficient severity to result in significant impairment in personal, family, social, educational, occupational or other important areas of functioning and would normally have been evident for at least 12 months (Unicef, 2019, p13).

A connection has been found between excessive video gaming and non-active and aggressive behavior, as well as decreased academic performance among children and adolescents (Niko Mannuko, 2014, p53). Moreover, several studies concluded that the quantity of videogame use is determinant of risk behaviors and negative overall health outcomes, including happiness and positive self-concept, depression and sleeplessness, feeling ill at ease, dizziness, poor appetite, headache, abdominal pain, being short-tempered and negative thinking, greater drug use, drinking behaviors, and lower relationship quality with friends and parents.

Particularly, there has been concern about pathological patterns of behavior with videogames and other computer- and Internet-related technologies, one of the

studies reported that pathological gamers had experienced more physical health problems (e.g. hand and wrist pains, obesity), more fights with parents over videogames, getting too little sleep and being late for school, decreased social contact, neglecting self-care to play games (e.g. skipping meals, baths, toilet), and neglect their homework. Indeed, similarly to this study, problematic game playing or excessive game play have been associated with regular cigarette smoking, drug use, depression, serious fights, psychosocial problems, and less physical activity in secondary school children.

Moreover, increased game use has been linked with certain kinds of unhealthy features, such as somatic symptoms, anxiety, insomnia, worse mental health status and social dysfunction. A study by Mentzoni and colleagues showed that video gamers attained lower scores on self-reported health than respondents who did not use videogames. Moreover, in this study problematic game use was linked to increased points on measures of anxiety and depression, and lower scores on satisfaction with life.

In relation to psychological development, several cross-sectional studies of videogame violence effects had been conducted, but none had employed well-validated measures of youth violence or considered video game violence effects in context with other influences on youth violence such as family environment and peer delinquency. In a study intended to look for the effects of Unreal violent video games on aggressive behavior using a sample of 148 participants, the obtained results indicated that the violent videogames had effects on state hostility and aggressive behavior than non-violent games, regardless of the sex of the player and the use of virtual reality (Patricia Arriaga, 2008, p04)

Links between real-life violence and violent games were indicated in another study where it was found that people with aggressive tendencies and manifesting violent behaviors tended to play more aggressive videogames and express their actions more violently in a form of punches, kicks, and shots (Peng .w, Liu.M and Mou.y, 2008, p159), also it has been shown that impulsivity and trait anger as well as the time spent doing particular activities after school can influence aggression (Marc Wittmann, Estibaliz Arce, Carmen Santisteban, 2008, p07) .

In a study lead by Fraser and colleagues about the associations Between Violent Video Gaming, Empathic Concern, and Pro-social Behavior Toward Strangers, Friends, and Family Members, it has been revealed that there was a negative association between playing violent video games and social interactions with family, this study also found a connection between violent video gaming and low empathic concern in both genders (Ashley Fraser et al, 2012, p644).

On the level of psychological Health, two studies reported that videogame playing was not associated with depression (Casiano, H et al, 2012, p296), the first study focused on the association between quantity of media use and health outcomes in adolescents), the second one examined media use and psychological adjustment (as indicated by depression and anxiety symptomatology) in a sample of 328 (14- to 16-year-old) adolescents (Christine McCauley Ohannessian, 2009, p08) In contrast, Nakamura and co-authors examined the combined influence of media use on subjective health in elementary school children in Japan, they found an association between the time spent using games and depression (Harunobu Nakamura et Al, 2012, p04). Conventional late computer game playing was also associated with a probability of depression in adolescents and young adults (Sakari Lemola et Al,

2011,p117) whether the amount and circadian time of habitual computer game playing wererelated to depressive symptoms in adolescents and young adults... Furthermore, adolescents with problematic game playing recorded that depression was more likely (Rani A. Desai et Al, 2010, p1414). The prevalence of problematic gaming is low but notinsignificant, and problematic gaming may be contained within alarger spectrum of externalizing behaviors,the results of this study also suggested that adolescents with problematic game playing were more likely to be involved in other risk behaviors such as smoking, drug use and violence.

By their turn Wang and co-authors (Wang,ES et Al, 2008, P26)analyzed the relationship between leisure satisfaction and life satisfaction of adolescents concerning online games, they reported that a strong commitment to online games had a negative effect on adolescent life satisfaction. This review shows that pathological digital game playing can lead to negative psychosocial consequences, such as aggression, loneliness, lower self-esteem and social self-efficacy, particularly with girls.(Philip Bonanno,2008, p50).

Reiner Hanewinkand his colleagues (Reiner Hanewinkel,2012,p168) investigatedthe co-occurrence and shared personalitycharacteristics of problematic computer gaming, problematicgambling and substance use. Correspondingly, higher levels of impulsivity and lower levels of self-regulation appear to act as predictors of pathological video gaming(Albert Kienfie Liao,2011,p07)in a study that gauged the influence of impulsive and regulatory processes on pathological video gaminginvolved 2154 students from 6 primary and 4 secondary schools in Singapore, the second study involved 191 students from 2 secondary schools.

Furthermore, a study held by Gentile and co-workers (Douglas A. Gentile,2011,p319),which measures the prevalence and length of theproblem of pathological video gaming or Internet use to identify riskand protective factors, to determine whether pathological gaming is aprimary or secondary problem, and to identify outcomes for individualswho become or stop being pathological gamers, found thatGreat amounts of gaming lower social competence,and greater impulsivity seemed to act as risk factors forbecoming pathological gamers, whereas depression, anxiety, socialphobias, and lower school performance seemed to act as outcomes ofpathological gaming, youth with characteristics of impulsive personality, lower social competence and poorer emotional regulation skills were more probable for risk of becoming pathological gamers. The same study provided also displayed evidence that depression, anxiety, social phobias and lower school performance were potential outcomes of pathological game playing.

Kwon and co-workers (Jung-HyeKwon , Chung-Suk Chung and Jung Lee,2009, p 07) searched for The Effects of Escape from Self and Interpersonal Relationshipon the Pathological Use of Internet Games, and they reported that the escape from self-theory might be one clear explanation for adolescents' Internet game addiction.

6. The Arab world and video gaming

Unfortunately when it comes to video gaming in the Arab world, only a few rare sources provide significant information about the subject; even though, there is data that shows the approximate number of gamers in that area, which attest that The Middle East has a great number of gamers, there are 200 million Arabs, who own

phones, and 80% of them play games using their phones, plus 8.5 million consoles were sold in the Arab world. In particular, Saudi Arabia scores the highest number of gamers in the Arab world. And videogame is the most searched word among twenty-four searches each month. There are three million gamers who play social games using Facebook in Saudi Arabia only (Manal Alamri, 2018, p31).

The University of Qatar reported statistics related to videogames use among seven Arabian countries, listed as follows: Egypt, Lebanon, Qatar, Tunisia, United Arab Emirates, and Saudi Arabia (2014). Interestingly, Saudi Arabia has the highest number of players of video games among those countries. In general, 65% of Saudi people play video games. Over two-thirds of Saudi men (69%) play video games while 59% of Saudi female play video games. Men, younger individuals, non-Arab expatriates, and those who have achieved a higher level of education and income are keener on videogames than others. A 25% of Arabs players choose to play war games (Manal Alamri, 2018, p09).

Another Arabic study investigated the Effects and Influence of videogames on child's Culture, which investigates the relationships between playing video games and aggressive behaviors, thoughts, and feelings, the participants include both male and female Saudi college students of the Taibah University. Its major findings suggested that there are no relationships in general between the amount of violence in video games and the amount of time playing video games and aggressive behaviors, thoughts, and feelings. However, there is a positive moderate correlation between the amount of time playing video games in childhood and verbally aggressive behaviors among only female Saudi college students (Rufaidabint Adnan Hamed Al-Ansari, 2020, pp302-303).

In a study held in Egypt that examines the addiction to electronic games and its effects on some mental and social diseases of adolescents found a negative correlation between the variable of social support by the family and the degree of addiction to electronic games and the social and psychological isolation of adolescents represented by psychological depression, isolation and violence among adolescents male and female. There is also a positive relationship between the time spent on playing, the relationship between addiction to electronic games and the degree of violence among adolescents, and the existence of a positive correlation between the degree of addiction to electronic games and some social diseases of adolescents like psychological depression, isolation and violence (Hoda M. Abd El-Aal, 2019, p579).

7. Beyond the negative effects of videogames

Until recently, digital games were associated with many stereotypes and alleged to have negative effects on gamers' physical and mental health and their direct social environment. However, later studies have pointed out to the fact that if videogames are played beyond a reasonable length of time, they may have negative effects like any other excess, instead, if good gaming habits are pursued (eg. appropriate time, environment, moderation of online games, etc.) they can be considered a safe and fulfilling activity (Patrick Felicia, 2009, p06).

It is important to mention that the relationship between play and learning is both complicated and fundamental, since learning and play are in many ways inseparable. More than simply a means to learning, play is a way of thinking about more than what we know. It is a disposition toward the world, a way of not only perceiving the world but of seeing ourselves in it and the various possibilities and opportunities that the world may offer (Douglas Thomas and John Seely Brown, 2007, p156).

In this scope, recent developments in gaming technologies, reinvigorated the discussion regarding the potential of videogames as vehicles for learning, presenting a more game-like educational experience and blurred the line between learning and entertainment even more, and there has been a wide range of studies that discussed certain dimensions of videogames and their importance in the gaming experience by looking at the motivational outcomes of gameplay, which led the gaming industry products to opt for more than to serve pure entertainment, and subsequently a plethora of game genres were highly invested in various areas such as technology enhanced learning and social therapy. Games are effervescently employed as teaching tools, as learning environment to facilitate reintegration into society of marginalized youth and young people, as rehabilitation platforms for various types of patients; also it has been found that these games provide e-inclusion solutions to improve cognitive and social activities of elderly people as well as for tele-rehabilitation and preventive gaming. Yet we are still missing a thorough theoretical understanding of how the different elements embedded in videogames influence user experience and learning, and for the potential of games to support learning to be fully realized, more research is needed into the ways games are actually used in schools that recognizes the everyday conditions in which most students and teachers find themselves.

8. Conclusion

In spite of the abundance of researches and literature reviews about videogames and their effects on users, an ambiguous picture and unclear perspective, often contradictory exists yet, we do need more research on whether 'violent' video games attract players who already possess violent behavioral predispositions, or whether the playing of 'violent' games makes game players more aggressive and facilitates the transfer of violent acts from the game into their own lives, in addition studies ought to settle that the culture for violence cannot be attributed solely to games. There is an urgent need for developing objective classification instruments that take into consideration different social and psychological and environmental factors and culturally acceptable criteria. In another hand, there is an urgent need to promote games as an innovative learning approach, the resonance of games with the psychological and social make-up of young people and the need to challenge established perceptions.

But the most compelling two aspects arise from the conviction that there is dire need to sensitize people about the potential and the risks of this area and henceforth the need to engage in research that addresses these needs and proposes examples of good practice, and to acknowledge the fact that videogame industrial sectors are far from being alone to take full responsibility towards the negative aspects of gameplay, especially on children and adolescents, parents, educators, organizations of socialization are equally responsible in the matter, they have specific accountabilities to protect and support children rights, and these responsibilities extend to reach the academic and research centers, which they have to take initiatives to carry out studies on the impact assessments of videogames, this will enable each part to clarify and understand their responsibilities in order to find out ways to further protect children and take full advantage of the opportunities of videogame use in other fields such as the following suggestions:

- Videogames can be used as research and/or measurement tools, because they allow the researcher to measure performance on a very wide variety of tasks, and can be easily changed, standardized and

understood.

- Videogames can be applied when examining personal features such as self-esteem, self-concept, goal-setting and individual differences.
- Videogames can assist children in setting goals, ensuring goal rehearsal, providing feedback, reinforcement, and maintaining records of behavioral change.
- Videogames equip children with state-of-the art technology. This may help overcome technophobia; they may help in the development of transferable IT skills. Over time it may also help eliminate gender imbalance in IT use (as males tend to be more avid IT users)
- Videogames can provide elements of interactivity that may stimulate social inclusion and cultural integration of some social disconnected groups.
- Videogames also allow participants to experience novelty, curiosity and challenge.

Bibliography List :

- Andreas Alexiou , Michaela C. Schippers(2018)Digital game elements, user experience and learning: A conceptual framework, *EducInfTechnol*, https://www.researchgate.net/publication/324991602_Digital_Game_Elements_User_Experience_and_Learning_A_Conceptual_Framework/link/5afea7010f7e9b98e0199665/download.
- Ashley Fraser et Al(2012), Associations Between Violent Video Gaming, Empathic Concern, and Pro-social Behavior Toward Strangers, Friends, and Family Members, *journal youth adolescence*, Springer Science and Business Media, LLC, issue 41.
- Albert KienfueLiau (2011) Impulsivity, Self-Regulation, and Pathological Video Gaming Among Youth: Testing a Mediation Model. *Asia Pacific journal of Public Health*, <http://aph.sagepub.com>
- Casiano, H., Kinley, D. J., Katz, L. Y., Chartier, M. J., & Sareen, J. (2012). Media use and health outcomes in adolescents: Findings from a nationally representative survey. *Journal of the Canadian Academy of Child and Adolescent Psychiatry / Journal de l'Académie canadienne de psychiatrie de l'enfant et de l'adolescent*, 21(4), 296–301.
- Christine McCauleyO'hannessian, CM (2009) Media Use and Adolescent Psychological Adjustment: An Examination of Gender Differences. *J Child FamStud*, National institute of health, USA.
- Damien Djaouti et al (2008), A gameplay definition theory through videogames classification, *International journal of computer games technology*, Hindaoui publishing corporation , volume 2008.
- Douglas A. Gentile et Al (2011) Pathological video game use among youths: a two-year longitudinal study, *The American Academy of Pediatrics*, *Pediatrics* 127.
- Douglas Thomas and John SeelyBrown(2007)The Play Imagination: Extending the Literary Mind Games and Culture, *SAGE Journals Online and HighWire Press platforms*, <http://gac.sagepub.com/cgi/content/refs/2/2/149>.
- Jung-Hye Kwon, Chung-Suk Chung and Jung Lee (2011) The effects of Escape from Self and Interpersonal Relationship on the Pathological Use of Internet Games. *Community journal of Mental Health* 47, Springer Science+Business Media, LLC.
- Hoda M. Abd El-Aal(2019)Addiction to electronic games and its effect on some mental and social diseases of adolescents(a field study on some school's students in a

- village –Damietta governorate) Agricultural Economics and Social Science ,Zagazig J. Agric. Res., Vol. 46 No. (2).
- ManalAlamri(2018) The Relationship Between Digital Gaming and Behaviors, Thoughts,and Feelings among Saudi College Students, The University of Kansas, Kansas.
- NazirS.Hawi and Maya Samaha Rupert(2017)Validation of the Arabic Version of the Internet Gaming Disorder-20 Test,Cyberpsychology , behavior and social ,Vol 00, N 00.Mary Ann Liebert Inc.
- NasmusSaquib et Al(2017)Video game addiction and psychological distress among expatriateadolescents in Saudi Arabia ,Addictive Behaviors Reports 6,www.elsevier.com/locate/abrep.
- NikoMannikko et Al(2014) Health Determinants Related to Digital Game Playing: A Systematic Review,Journal of Health Science 2014, 4(3).
- Patricia Arriaga et Al(2008), Are the effects of unreal violent videogames pronounced when playing with a virtual reality system? Aggressive behavior ,34(5),<http://onlinelibrary.wiley.com>.
- Patrick Felicia(2009) Digital games in schools: A handbook for teachers complements the study How are digital games used in schools?, European Schoolnet EUN Partnership AISBL, Belgium.
- Peng.W, Liu.M and Mou.y(2008)Do aggressive people play violent computer games in a more aggressive way? Individual differences and idiosyncratic game-playing experience, Cyber psychology and behavior, vol 11 issue 2,MaryAnn LiebertInc,<http://www.ncbi.nlm.nih.gov/pubmed/18422407>.
- Philip Bonanno(2008)Learning Through Collaborative Gaming:A Process-oriented Pedagogy,Academic dissertation to be publicly examined, by permission of theFaculty of Education, University of Joensuu.
- Marc Wittmann, EstibalizArce, Carmen Santisteban(2008)How impulsiveness, trait anger, and extracurricular activities might affect aggression in school children,Personality and Individual Differences, issue 45 , www.elsevier.com/locate/paid.
- Harunobu Nakamura et Al(2012),Combined influence of media use on subjective health in elementary school children in Japan: a population-based study, BMC public health,<http://www.biomedcentral.com/1471-2458/12/432>
- Mohammed Alqurashi, Abdullah Alqahtani and YousefAlmoslamani (2016)Middle school students digital game experiences in the city of Mekka in Saudi Arrabia,IJAEDU- International E-Journal of Advances in Education, Vol. 2, Issue 4,<http://ijaedu.ocerintjournals.org>.
- Rani Desai et Al(2010) Video-gaming among high school students: health correlates, gender differences, and problematic gaming, Department of Psychology, Yale University School of Medicine,West Haven, Connecticut,Downloaded from www.aappublications.org/news
- Reiner Hanewinkel (2012) Co-occurrence of addictive behaviours: personality factors related to substance use, gambling and computer gaming,Institute for Therapy and Health Research, Kiel , Germany.
- Rufaidabint Adnan Hamed Al-Ansari(2020)The Effects of Video Games and its Influence on child s Culture, Journal Of Babylon Center For Humanities Studies, ,Volume:10,Issue1.

-SakariLemola (2011) Habitual computer game playing at night is related to depressive symptoms. *Personality and individual differences*, Vol. 51, www.elsevier.com/locate/paid

-Wang, ES., Chen, LS., Lin, JY. and Wang MC. (2008) The relationship between leisure satisfaction and life satisfaction of adolescents concerning online games. *Adolescence*, Vol. 43, No. 169.

2018 Global games market report, trends, insights and projections toward 2021.

-UNICEF(2019)Child rights and online gaming :opportunities and challenges for children and the industry, discussion paper seriesChildren's Rights and Business in a Digital World.

<https://www.dictionary.com/browse/images>