

PLAYING DIGITAL GAMES IN CZECH ADOLESCENTS

Summary

Adolescence is the most dynamic period of human life during which, over a period of several years, a child becomes an adult individual. Numerous changes occur at various levels, with varying intensity and at various stages of this period. Adolescence is understood here as the second decade of life, approximately from the age of eleven to the age of nineteen. Adolescence in girls differs to some extent from that in boys. Changes have been described in the physical, social, mental, spiritual, moral and other areas. Physiological changes are apparent, for example, in the production of hormones, maturation of secondary sex characteristics or even an increase in muscle mass. In the social area, the individual gradually separates from his/her parents and authorities; their place is taken over by a peer group. All these changes, occurring towards the end of this period, result in the individual's search for a partner with whom the individual establishes his/her own family within the period of early adulthood. The adolescent gradually moves from dependence on others to independence, from irresponsibility to moral maturity, and from spontaneous reactivity to sociable purposefulness. Moral feeling and thinking takes two directions with adolescents: towards justice and truth, and also towards the comfort and well-being of other people. In the period between the age of thirteen and fifteen, abstract thinking is fully developed; the adolescent bases his/her thinking on logical reasoning and anticipation of possible solutions. This period in itself is demanding not only for the individual experiencing it, but also for his/her environment. The adolescent has to tackle many intrapersonal and interpersonal conflicts that may frequently result in risky behaviour, which may have a negative impact on the individual's future life. The adolescent gradually searches for his/her place in the particular living environment, seeks his/her own identity, and strives for defining himself/herself against the other members of society. The extent and the quality of the individual's management of this life period usually predestine the individual to either a healthy lifestyle, or to a risky, unhealthy life.

Games are as old as humanity itself, appearing in diverse forms in various cultures. Playing games is one of the basic human activities: games are played by small children, adolescents, adults, as well as seniors. Games and playing may be observed even amongst other animal species. One of the most popular classic play theories states that it is *"a voluntary activity or occupation executed within certain fixed limits of time and place, according to rules freely accepted but absolutely binding, having its aim in itself and accompanied by a feeling of tension, joy, and the consciousness that it is 'different' from 'ordinary life'"* (Huizinga, 2000, 44). Play influences socialization, brings joy, and serves for fulfilment of sensory stimulation and extension of skills and knowledge. It provides feelings of happiness and fulfils the need for certainty, conformity and self-promotion.

The video-gaming industry is already more than forty years old (Newman, 2004) and digital games have become part of our culture and our lives. With digital games, certain characteristics are apparent, occurring in various forms and at various levels. As stated by Wolf (2001), these involve the presence of rules (what may and may not be adhered to and why), utilization of various gamer abilities (certain skills, strategies or the influence of luck), occurrence of a certain type of result (such as victory, or loss, achievement of a higher score or faster fulfilment of a task), and the presence of a conflict (towards an adversary or circumstances). Digital games may take place in a virtual world or in a augmented reality.

Based on the analysis of information and definitions available, it may be stated that digital games are **games that may be played using various imaging devices, for instance a PC, a cell phone, a tablet, a gaming console, etc.**

Playing digital games brings numerous benefits to a varying degree, but games may also hide certain risks that may result in digital gaming addiction. In digital games, an individual may find his/her identity, prove his/her endurance and increase his/her self-assessment. Digital games provide space for interaction and establishment of relationships. The adolescent may improve certain skills and abilities.

We have identified the main benefits provided to adolescents by games:

- a) fun and happiness;
- b) relaxation and rest;
- c) a better world – a world without worries including the option of leaving it at any time;
- d) space for realization of one's desires and needs;
- e) a feeling of usefulness and purpose, success, and acceptance;
- f) achievement of success in a much shorter time than in real life;
- g) forgetting about everyday worries;
- h) stepping out from everyday life, experiencing something different;
- i) social interaction (contact with friends and other users);
- j) establishment of new relationships;
- k) realization of various kinds of activities including ones that would be undesirable or unconventional in the real world;
- l) social status (a popular topic in interviews with some adolescents, especially boys; awareness of this area may facilitate one's integration into the reference group);
- m) contribution to the establishment of identity – concealing one's weak points and adopting the qualities the individual is lacking and wishing to have in the real world.

Digital games may be classified according to various criteria. For instance, there are single-player and multi-player games; some games provide both options. Some games may be played in the offline regime, while others may only be played online. According to the payment model, digital games may also be divided into premium, freeware, freemium, and shareware. The gaming world offers various gaming genres: adventures, open world games, online card games, massively multiplayer online role-playing games, multiplayer online battle arenas, puzzles, role-playing games, sandbox games, simulators, sports games, strategic games, shooting games, survivals, web games or race games.

As already mentioned, playing digital games may result in addiction to the activity. The emergence of an addiction is influenced by a number of factors. Important aspects are the game itself, but also the personality of the gamer and his/her living environment. Risky personality traits include for example impulsiveness, low life satisfaction, depression, predisposition to addictive behaviour, male gender, low self-confidence, unfunctional coping strategies, negative feelings, fear, stress, and ADHD.

Certain environmental factors may also facilitate the digital game addiction. These are specifically a lack of time and interest from parents and the social environment, an insufficient amount of time spent together by the family, peer pressure, a benevolent attitude on the part of society towards playing digital games, the social environment's positive perception of playing digital games, the lack of other leisure activities, and the family members' positive attitude to playing digital games. The games as such are another source of risky aspects: these are in particular affordable gaming equipment, affordable games, easy accessibility of the gaming world, affordable Internet connection, colour, sound and light effects, game graphics, fast game pace, undue identification with the character, the flow phenomenon, and the infinity of the game.

Risky digital game playing has numerous negative impacts. The health impacts include impaired vision, disruption of the sleep cycle, sleep deprivation, as well as pain in the back, shoulders, neck, head or fingers. Carpal tunnel syndrome is a frequent health problem. Other problems involve the disruption of the daily cycle, neglecting personal hygiene, and an unhealthy diet with a consequent increase in body weight. Gamers who play digital games excessively may develop states of depression and anxiety. Problematic gaming is accompanied by mood changes and a feeling of loneliness. The gamers' social area is disrupted as well: they frequently encounter a loss of friends, interpersonal conflicts, and problems with the people closely related to them. Gaming gradually replaces all other leisure activities and the individual devotes his/her time, including the working time, to playing games. Work efficiency at school or work is decreased and assessed negatively by the management of the particular institution. In severe cases, the situation may result in the loss of employment or a forced dropout of school. Owing to their gaming, gamers may face financial problems, as well as problems with various state institutions.

Certain experts have attempted to define the criteria to reveal digital game addiction; these criteria have become part of the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition. DSM-5 uses nine diagnostic criteria. In order for an individual to be diagnosed with an Internet gaming disorder, he/she must meet at least five criteria within the last year. At the same time, these symptoms must lead to bad functioning or deterioration regarding the gamer's life. The symptoms include:

- a) excessive online gaming;
- b) withdrawal symptoms if the individual is prevented from online gaming;
- c) the need to play more often and for a longer period in order to achieve feelings of happiness, excitement and fulfilment;
- d) unsuccessful attempts at controlling or quitting gaming;
- e) loss of interest in former hobbies and other forms of entertainment;
- f) continued gaming despite problems caused by it;
- g) deception and cheating related to gaming;
- h) escape from reality;
- i) threatened important relationships and life opportunities.

Adolescents practicing digital gaming may be divided into three groups according to the risk rate of their gaming, and characterized in general as follows:

- a) Non-problematic digital gaming – gaming as one of leisure activities: gaming as only one of the ways of spending leisure time apart from other interests; gaming as one of the possible ways of enjoying new technologies (virtual reality); gaming for distraction and entertainment; division of time between gaming and real life; games do not interfere with the time spent together – i.e., the individual does not have a preference for gaming over other activities with other people, family, friends, classmates, colleagues (meeting the family at meal times, meeting friends face-to-face, regular sleep, vacations and holidays without gaming, trips, gaming does not influence the daily routine); gaining information/education through games; the individual plays educational games and thus gains new knowledge; the motivation for gaming is to try something new; training of cognitive abilities through gaming for instance when playing logical games, attention games, or games developing spatial orientation.

- b) Risky/problematic digital gaming – gaming is a dominant leisure activity; gaming for the purpose of relaxation – the individual uses gaming as the main coping strategy to release tension; the feeling of relaxation after gaming; the individual starts considering that his/her gaming should be regulated and he/she should determine certain borders; gaming already disrupts some aspects of life, but the daily routine and fulfilment of the most important tasks remains preserved; excessive time spent on gaming; increasing frequency and time spent on gaming; evasive behaviour – if facing conflicts or experiencing unpleasant feelings, the individual escapes to the gaming world; obvious neglect of school, work, friends (for instance, the individual neglects his/her school duties by not preparing for lessons or not attending school at all so that he/she can spend time on gaming; these states may be magnified when a new game is introduced); the individual is repeatedly so preoccupied with gaming that he/she does not feel any pain, exhaustion, hunger, thirst or forgets about bodily needs (for instance playing the entire day without a break, without using the toilet, eating, or drinking, the individual only realizes these feelings several hours later, having finished the game); transfer of friendship relationships to the gaming or online environment and their preference; the individual prefers his/her virtual friends and shares personal and intimate details with them; the gamer ignores his/her problems and stress and communicates online rather than offline.
- c) Addiction to digital gaming – manifested by a loss of control (the individual wants to stop gaming, but is unable to do so) – at the beginning, the gamer has his/her playing under control, later the individual loses control over the intensity of gaming and is unable to end the game; the irresistible desire to play – the gamer feels a strong compulsion to play and cannot resist it; merging of the gaming world with the real world – in their fantasy, adolescents do not distinguish between the virtual world and the real one, nor do they distinguish between the abilities of the character and their own; development of tolerance (the more the individual plays, the more he/she needs to play to achieve pleasure, which increases the time the individual spends on gaming) – the individual needs more stimuli to achieve the same effect/pleasure from gaming; withdrawal symptoms – manifested for instance by unrest, irritation, anxiety, sadness, bad mood, moodiness, impulsiveness, irritability, unceasing thinking about gaming, or sleep disorders; a somatic condition (nausea, tremor); continued gaming despite obvious harmful effects – the negative impacts of gaming gradually increase (loss of employment, significant/radical deterioration of school performance), although tension within the family increases as well, the gamer continues with gaming at the same intensity; giving up a job, study, or personal life – gaming is the central content of life and other aspects of life are subordinate; higher financial expenses on gaming and insufficient financial income; higher delinquency in the form of lying, deception, stealing; a high amount of time spent on gaming.

When observing a phenomenon such as digital gaming, experts have used numerous diagnostic tools. Although the games may be expedient to the adolescent and bring him/her various benefits, such as relaxation, distraction and entertainment, or may serve as a tool for rest and relaxation, in some cases gaming may exceed the commonly acceptable level and become a risk, or even an addiction. This state subsequently impacts all areas of the individual's life (for instance a loss of friends, problems with people closely related to the individual, trouble at school or work, or health problems). Certain diagnostic

methods focus on detection of addicted and risky gamers; others focus on the gamer typology or the motivation of adolescents to play digital games. At present, research projects as well as counselling and clinical psychology use methods including the following ones: Digital Games Questionnaire (Suchá, Dolejš, & Pipová, 2017); Internet Gaming Disorder (DSM-5, 2015); Scale for the Assessment of Pathological Computer-Gaming in Children and Adolescents (Skala zum Computerspielverhalten bei den Kindern und Jugendlichen; Wölfling, Müller, & Beutel, 2011); Clinical Video Game Addiction Test (DeFuentes-Merillas, Frielink, Schoenmakers, Rooij, & Van Duin, 2012); Video Game Addiction Test (Meerkerk, Van Den Eijnden, Vermulst, & Garretsen, 2009); Motives for Online Gaming Questionnaire (Wu, Yu, Lei, Lai, & Lau, 2017); Cognitive Distortions Scale (Wang & Li, 2009); Gaming-Contingent Self-Worth (Beard, & Wickham, 2016); Trojan Player Typology (Kahn et al., 2015), etc.

The programs focused on prevention of risky digital gaming behaviour involve specific prevention, which is divided into three levels (general, selective, and indicated) based on the program's intensity and the resources and tools used, including the involvement of a target group. The programs are intended to develop skills related to digital gaming (such as identification of maladaptive thoughts), as well as skills promoting efficient coping with stress and emotions. They should also involve skills related to the daily regime and development of skills connected to interpersonal situations.

The following is a summary of preventive recommendations according to Krossbakken et al. (2018) supplemented by our own empirical findings and experience:

- a) Gaming equipment and computers should be placed in shared rooms;
- b) The child's or adolescent's bedroom should not include any electronic media for digital gaming;
- c) Digital games should not be played before going to sleep;
- d) The child or adolescent should be supported and motivated towards various leisure activities and regular participation in them;
- e) Gaming should be prohibited during meal times and emphasis should be placed on spending this time together;
- f) Leisure time should be spent together;
- g) Permission for gaming should be based on the recommended age (according to the PEGI rating);
- h) The games should preferably be those developing skills and knowledge;
- i) The adult should have control over what type of games the child or adolescent plays and sufficient information about these games;
- j) The child or adolescent should explain not only the principle of the games he/she plays, but also the motives behind gaming and the goals the child or adolescent wants to achieve in the game;
- k) Daily time limits for digital gaming should be defined and observed and certain days without gaming should be determined;
- l) The child's or adolescent's interpersonal relationships should be promoted and cared about and his/her face-to-face friendship should be supported;
- m) The adult should have control over how much the child or adolescent invests in the gaming equipment or games;
- n) The adult should have access to the passwords the child or adolescent uses in games.

Digital gaming is one of the common forms of spending leisure time for a major part of the population, but there are even gamers who develop this activity into risky behaviour or an addiction. These people need to be provided with high-quality, erudite and efficient professional help and treatment. The treatment is based primarily on psychotherapeutic interventions in the form of individual,

cognitive-behavioural, psychodynamic and family therapy. The professional help should be focused on structuring the gamer's day, adjusting his/her lifestyle, and identifying and supporting risk-free activities not related to gaming. The treatment and help may use various techniques, such as the technique of motivational interviews or relaxation techniques. The risky or addicted gamer should:

- a) Realize what he/she is losing;
- b) Calculate the time spent on gaming;
- c) Search and identify the triggers;
- d) Listen to the inner voice concerning the denial of his/her gaming-related problems;
- e) Learn to use time-planning strategies;
- f) Find support in real life;
- g) Remedy problems caused by gaming.

In cases of risky or addictive gaming, it is therefore important to target work on motivation, analysis of present behaviour, and assessment of the individual's personal goals and efforts towards them. The treatment may also include psycho-education (characterization and explanation of the influence of games), establishment of / re-establishment of / integration into the social network and cooperation with the family (education, creating common strategies to cope with gaming).

Our representative national research project provides numerous interesting findings and information. These are presented below in the form of individual points, which is the most convenient form to summarize the very extensive, detailed and valid results brought by the research. The summary presents the individual groups of respondents and their results regarding the individual diagnostic methods. Certain points are focused on the relationships between quantitative tools and differences between the individual types of adolescent groups participating in the research.

Characteristics of participants:

- a) The project included two groups: 1) a group of Czech adolescents (1,940 boys and 2,010 girls); and 2) a group of gamers (100 boys and 21 girls);
- b) The average age of the standard group was 15.73 years and the research included adolescents aged 11-19;
- c) Over 200 participants belonged to the age cohorts of 15 to 18 years;
- d) The research involved adolescents living in all regions of the Czech Republic;
- e) The standard group included 693 boys and 735 girls attending primary schools and lower secondary grammar schools, while 1,247 boys and 1,275 girls studied at secondary schools with or without the school-leaving maturita exam;
- f) With regard to the school type, the research involved five types of educational institutions: 1) higher primary schools (900 adolescents); 2) lower secondary grammar schools (528 adolescents); 3) (four-year) secondary grammar schools with the maturita exam (1067 adolescents); 4) secondary schools without the maturita exam (519 adolescents); and 5) secondary schools with the maturita exam (936 adolescents).

Results from the diagnostic tools:

- a) The research used the following methods: 1) The Scale for the Assessment of Pathological Computer-Gaming in Children and Adolescents (CSV-S), originally Skala zum Computerspielverhalten bei Kindern und Jugendlichen created by Wölfling, Müller & Beutel (2011); 2) Internet Gaming Disorder; diagnostic criteria of Internet gaming addiction according

- to DSM-5 (DSM, 2015); 3) Game Type Questionnaire (Suchá & Dolejš, 2017); and 4) socio-demographic questions (school type, age, sex, etc.);
- b) 16.88% of adolescents from the standard group and 42.98% of the gamer group play for four hours or more, while 28.40% of adolescents from the standard group do not play digital games;
 - c) Boys identified as non-problematic gamers play on average 2.54 hours per day; addicted boys spend on average 7.28 hours per day on gaming (valid for standard group);
 - d) On average, adolescents with an ideal body weight play for 1.88 hours per day, overweight ones for 2.45 hours per day, those with first-degree obesity for 3.40 hours per day, and those with second-degree obesity for 4.45 hours per day (valid for standard group);
 - e) Digital games are played several times fewer by girls than boys, and primary-school adolescents play more (on average 2.17 hours per day) than secondary-school ones (on average 1.85 hours per day);
 - f) On average, girls from the standard group spend twelve times less: the average amount for girls is 116 CZK, while for boys it equals 1,430 CZK; girls from the gamer group spend 962 CZK in twelve months, while boys invest 3,274 CZK in the same period;
 - g) Boys from the standard group prefer the following game genres: first person shooters, open world action games, and racing games; girls prefer life simulators, open world action games, and with the third place occupied by online web games and puzzles;
 - h) In the Internet Gaming Disorder criteria, boys from the standard group reached on average 1.47 points and girls reached 0.58 points; pupils at primary schools and lower secondary grammar schools reached on average 1.21 points, while pupils of secondary schools reached 0.91 points;
 - i) The Internet Gaming Disorder contains nine criteria: a score of five or more fulfilled criteria indicates an addiction; from the standard group a score of five or more points was reached by 3.70% of adolescents, and in the gamer group the same scores were reached by 6,14% of adolescents;
 - j) The standard group includes more boys than girls addicted to digital games; the sex-based ratio is 4:1 with a prevalence of boys; the group of primary-school pupils includes 5.17% addicts, and the secondary-school group includes 2.87% addicted adolescents;
 - k) In the Scale for the Assessment of Pathological Computer-Gaming in Children and Adolescents (CSV-S), girls from the standard group reached 0.95 gross points, while the boys' results equalled 2.94 gross points;
 - l) The group with the greatest risk, i.e. the one with the highest average value, are primary-school boys (3.47 gross points) followed by secondary-school boys (2.64 gross points);
 - m) Primary-school girls (1.13 gross points) are a group with slightly greater risk in relation to digital gaming than secondary-school girls (0.85 gross points);
 - n) In the CSV-S method, the lowest score was reached by secondary-grammar-school pupils; in contrast, the highest score was reached by primary-school pupils;
 - o) In the total CSV-S score, the difference between girls (0.95 points) and boys (2.94 points) from the standard group is statistically significant at the level of 0.001;
 - p) Within the standard group, 15.65% of adolescents encounter trouble at school or with education, and 18.84% of adolescents repeatedly forget about their duties;
 - q) 27.29% of all interviewed adolescents admit neglecting their leisure activities, and 10.54% admit neglecting their friends or partners (valid for standard group);
 - r) 81.94% of addicted boys and girls play games to improve their mood, while for non-addicted boys and girls, the amount equals only 35.98% (valid for standard group);

- s) In all observed groups of participants, the mutual relationship between the CSV-S and the IGD criteria was moderately strong and statistically significant at the level of 0.001; in the standard group, the correlation coefficient was $r = 0.70$, while in the gamer group it equalled $r = 0.59$;
- t) Impulsiveness or physical aggression also positively correlate with the observed CSV-S questionnaires and the IGD criteria: these correlations are statistically significant, but low (valid for standard group);
- u) In the Impulsivity Scale (SIDS), addicted adolescents reached 62.44 gross points, while non-addicted adolescents reached 54.99 gross points; in Buss-Perry's Aggression Scale (BPQA), addicted individuals reached 92.37 points, while the results of non-addicted adolescents equalled 79.27 points (valid for standard group);
- v) Based on the VRCHA method, it was determined that addicted gamers manifest a higher degree of various types of delinquent behaviour (lying, deception, stealing); addicted gamers are more frequently victims of bullying than their peers (they are more frequently targets of mockery, offences or insults from their classmates); no difference has been found between both groups (addicted, and non-addicted) concerning the abuse of addictive substances (valid for standard group).

GAME OVER only applies in the game. Speaking in gaming terms, the addiction to digital gaming may be fought and "beaten". In order to do so, the gamers need to have sufficient motivation and determination, and professionals need to use high-quality preventive, counselling and treatment procedures and tools, and dispose of a sufficient amount of high-quality data and information on the present state of this phenomenon in the current population.