AGGRESSIVENESS AND VIDEO GAMES AT THE STUDENTS FROM PRIMARY SCHOOL

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Abstract: *Aggressiveness in students is a phenomenon that teachers, colleagues and parents increasingly have to face. In an attempt to explain the etiology of aggressive behavior, we started from the premise that video games that children play can influence their aggressive behavior in the direction of augmenting aggressive behavior. The theoretical foundations of this study are from the theories of aggressiveness theories and its causes to students. We also mentioned some types of video games, divided into two categories - with inherently aggressive content, with potentially or non-aggressive content. The group of subjects consisted of 35 students from primary school. Two tools were used to collect the data - a video game questionnaire and the Buss & Perry questionnaire to identify students' aggressiveness levels. As a result of the statistical processing of the data using the T Test, it was found that those students who use explicitly aggressive games also develop more aggressive behaviors. The other category of students, who consume non-aggressive games, show fewer aggressive behaviors. Thus, we can use as a measure to reduce aggression in those students the replacement of games with high aggressive potential with some non-aggressive ones.*

Keywords: *aggressiveness; video games; students; causes of aggression;*

1. Theoretical premise
1.1. Forms and causes of aggression

Aggressiveness is formed and develops from an early age. The aggressive behaviors of children can manifest themselves from the infant stage when they express their anger. Later, in small childhood, aggression manifests itself in conflicts with the elder ones, especially with same-sex ones. During primary school, boys begin to show aggression in physical form and females in an indirect form. In the next stages the expression of aggression is diversified, being influenced by many internal and external factors.

Stanley Greenspan (2015) states that those children who are more aggressive need more sensory information from the environment than other children. They react less to sensations, which is why their intensity should be higher: loud noises, touching, etc. These children try to get to know the world and meet their needs. However, the author states that this rule is not valid for all children, because some of them can react intensely to external sensations and even to their own emotions. Aggressive children can be authoritarian and can manipulate others. If they do not get what they want they react with aggressiveness.

The causes of aggressive behavior in children are numerous and diverse. These include: aggression in the family, poor economic conditions, unstable environment (parental divorce, parental death, unstable affective climate), school environment (inadequate disciplinary measures, labeling, non-objective assessment, etc.) self-inflicted self-image, disbelief in one's own person), the image of media aggression (long exposure to violence leads to desensitization

and to the promotion of promoted models), the legal system (in some countries the legal framework regarding youth violence is permissive), (lack of communication and relations with the community, lack of belonging to a group, lack of motivation for success in life, thus integrating into an aggressive group will ensure the sense of belonging and hope for success in the future), racism, social stratification (discrimination of some individuals or groups may lead to aggression) (coord: Jigău, Liiceanu, Preoteasa, 2006).

Other factors influencing children in aggressive behaviors are those related to the individual, such as: antisocial attitudes, personal history of aggressive conduct (research shows that the authors of violent acts are victims of such conduct), tobacco, alcohol or drug use, low empiricism, impulsivity (the tendency to act, without predicting the outcome, which is also involved in solving the conflicts through aggression, often physically), insufficiently developed self-control (low control or lack of control allows aggressive impulse to manifest itself), attitude towards life (is conditioned by the way students perceive in relation to their peers, it is done by social comparison, they present a state of resignation, pessimism, states that they accept things they cannot change) and the self-image (at aggressive children have a lower level of self-esteem than non-aggressive children) (coord .: Jigău, Liiceanu, Preoteasa, 2006).

Children can manifest their aggression by: hitting other children or adults, wounding, slapping, throwing and hitting with various objects around them, pulling hair, tripping others, intimidating those he considers inferior to him, ignoring, marginalization, indifference, threats, visual confrontation, insults, etc. A certain aggressive behavioral manifestation often found in schools is also bullying. Bullying and cyber-bulling is an aggressive behavior repeated with the intention of harming others in order to gain power and control in a group (Rad, D., Dughi, T., Roman, A., & Ignat, S., 2019).

1.2 Video Games

Playing is a part of virtual, digital life that allows temporary detachment from the real world and the problems faced by individuals, and entry into a world that offers pleasure, certainty, problem solving, and an immediate reward for your own actions from the game. From the study "Satisfaction of Virtual Life", published in 2011 by E. Castronova and G. G. Wagner, it follows that the satisfaction in virtual life created by a game is almost equal to the one resulting from finding a job by an unemployed person. So virtual life offers emotional rewards, but on the other hand determines the limitation of real-life satisfaction by comparing with virtual life (Chatfield, T., 2016).

People choose video games according to their interests and preferences. Most games have decor elements and a fairly simple story in which the player performs a certain action. The interest of people of all ages for video games has increased their number and diversified them. Video games are classified based on the action that players must do, not on the design elements, the pretext or the story of the game.

According to the purpose of the video game there are (Chatfield, T., 2016):
- Advergames - designed to advertise a product or event;
- Art games - aim at catharsis, as well as painting, literature, drawing, etc. and do not follow the playful character of the game;
- Casual games designed to create immediate pleasure to help players quickly detach themselves from the real world through simple tasks that do not require the player's extensive knowledge and can be played anytime and anywhere as they do not consume much time;
- Educational games - aiming at enriching or strengthening knowledge, promoting science, social change and problem solving; is used both in the school environment and in other environments;
- Exergames - aiming at stimulating and promoting physical movement in a fun way;

- Video training games for virtual training - aiming at practicing motor skills and abilities; for example: surgeons can practice their precision with the help of specially created video games. Another criterion for classifying video games is the participant's play task. Depending on this, video games can be:

- Action games - Train hand and eye coordination, but also reaction speed, challenges are typically of physical nature where the player controls most of the action;

- Platformer - The action of the game is placed in a simple decoration, usually in a two-dimensional world, where the player directs a character among various obstacles, such as walking, jumping, climbing, shooting, opening gates to reap rewards and move to the next level;

- Shooter - are action games in which characters use firearms to shoot down and kill enemies; the effects of the games are realistic enough, promoting violence. These games usually have multiplayer functionality, which allows users to play with friends, thus increasing the interest in the game. It also gives players the opportunity to "look" in the environment in which they play behind the character and through his eyes. These types of games are among the most bought video games;

- Fighters - is a category of fighting action games that have violent scenarios where players battle with one or more enemies, using in particular hands and feet, but also surreal movements;

- Racing - games that represent racing with different means of transport, generally with machines which, in general, violate the laws of physics;

- Adventure Games - do not focus on looks, content and story, but on exploration and problem solving, and require the player's attention and memory. This category excludes action and does not engage in motor skills and visual-motor coordination;

- Interactive movies are games with pre-recorded sequences in which players make decisions instead of characters, so they decide the way the character follow;

- Three-dimensional real-time adventures - is an augmentation of adventure video games that give the player the ability to move around in space and respect the laws of physics;

- Tycoon - players are at the head of an organization and aim to organize it so that it is successful, using all the resources at their disposal;

- Strategy Games - requires the player's strategic thinking to aim the objectives set by the game and involves achieving with a given number of actions or moves.

Studies have shown that trimming video games has beneficial effects on children if the time spent is not very high and if there is no substitution between real and virtual interrelations. The fact that children can create identities and idealized social circles in video games is a major attraction for them. But if it remains only at this level there is the risk of dysfunctional, inappropriate behaviors that may take the form of isolation, anxiety or aggression. This latter aspect is also of interest to us in this study, the main objective being to identify the extent to which video games inflate aggressive behavior into elementary school students.

2. Research methodology
2.1. The aim of the study is to highlight the influence of video games on aggressiveness in young school children.
2.2. Hypothesis: The type of video game influences the level of aggression in small students, meaning that students who play inherently aggressive games have a higher level of aggression than those who play potentially aggressive or non-aggressive games.
2.3. The variables involved
Independent Variable (I.V.): The type of video game that schoolchildren play predominantly, which can be: action, platformer, shooter, fighter, racing, adventure, tycoon or strategy;
Dependent Variable (D.V.): The level of aggression in children.
2.4. Methods of research

„In order to carry out the research "Influence of video games on aggressiveness in children of elementary schoolage", we used the method for the investigation of the field of video games and on the other hand a psychometric method, Buss-Perry Questionnaire, for determining the aggressiveness level of the participants. Thus, to measure the psychological variables investigated, we used the following tools:
• The video game questionnaire regarding video games that are played by young students;
• The Aggression Questionnaire, AQ or BPAQ, A.H. Buss and M. Perry, 1992

The video game questionnaire regarding video games that are played by young students.

The questionnaire is addressed to children of elementary school age who play video games. It includes six free-to-answer items, but also multiple-choice items related to video games played by the participants. In the first part of the questionnaire, the subjects complete their data regarding their age, gender and class in which they are students. The task of the participants is to answer questions in the allocated space or to try the answer that suits them, in the items where there are multiple answers.

The first item is an introductory question: "Do you play video games" that has a short answer: "yes" or "no". The condition to participate in the study is the "yes" answer. The next two free-answer items target a research variable, that is, the time that the participants dedicate daily to video games. Thus, item 2 "at what times of the day you play" sends the participant with thoughts about daily moments and activities in which video games are played so that the next item can clearly state how much he spends daily for this activity.

The last three items are to investigate the variable: the type of video game that small children play predominantly. Item 4 asks students to list the five games they play. In item 5, children name and describe their favorite game, being a free-answer item. Here too, the participants, who are elementary school students, make a representative design for the game described. Through the drawing he makes, the type of play is highlighted. In item 6, students have the task of framing their favorite game in one of the categories, which are the types of video games. The name of each type of game is written together with a brief characterization of the game so that the participants can easily fit and clarify their favorite game in a category of video games. From these last three items, there is a predominant type of video games that the participants are accessing.

The Buss and Perry aggressiveness questionnaire has been used in numerous studies, being an easy to apply psychometric instrument. The task of the participants is to carefully read each of the 29 statements, and to determine the extent to which they characterize them on a scale from 1 to 5, where 1 means that the statement does not characterize them at all, and 5 signifies that the statement characterizes them very much. Scoring is done by adding the scores awarded by the participants, given the indirect quotation for the two items. The increased end score indicates a high level of aggression.

In the present study, the variable investigated is the level of aggression, so the general score obtained by participants in the Buss and Perry Aggressiveness Questionnaire will be taken into account.

2.5. Group of subjects

For this study we selected 35 young school children from the Iratoşu Gymnasium School in Arad County. Those children are students in primary education, age being one of the selection criteria. Another criterion for the selection of participants was to play video games. Most schoolchildren play video games, except for students who do not have access to them because of the lack of computers, other technological means or lack of internet.

Of the 35 small children, 17 are boys and 18 are girls. Their age is between 7 and 11 years, being at the age of the elementary schooling stage. The average age of the participants is 9.6 years. All participants in the study play video games daily, to a lesser or greater extent.

The shortest time spent on video games by a participant is 10 minutes, and the maximum time dedicated to video games by students participating in the study is 300 minutes, equal to 5 hours.

2.6. Results of the study

One of the variables of this study is the time spent daily by elementary children to play video games. The minimum time is 10 minutes and the maximum is 300 minutes. Of the 35 participants 17 are playing video games daily for one hour or less; 10 participants play between one hour and two hours; 4 are playing between two and three hours; 2 students play between three and four hours; and 2 play video games daily between four and five hours. The average time that students spend daily playing video games is 108.57 minutes, which is (without 3 seconds) 1 hour and 49 minutes.

Table no. 1 Scholar's daily time spent playing video games
Time spent on video games, expressed in hours

	Time (hours)	Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	1 hour	17	48,6	48,6	48,6
	2 hours	10	28,6	28,6	77,1
	3 hours	4	11,4	11,4	88,6
	4 hours	2	5,7	5,7	94,3
	5 hours	2	5,7	5,7	100,0
	Total	35	100,0	100,0	

Another important aspect of the research is the type of video game that students play predominantly. There were 8 types of video games identified, which can be seen in figure no. 1. The most attractive types of games for participants in this study are: action games, shooter games, weapons-fighting, and fighters that involve body battles. Each of the three categories of video games is preferred by 17% of the participants. The least accessible video games for young schoolboys are "tycoon" games, which involve the organization and leadership of an organization, a city, and "racing" games, involving racing with means of transport, generally vehicles. Each of these is preferred by only 6% of the study participants. Platform games and strategy games are played by 14% of small children. 9% of participants prefer adventure games. In figure no. 1 you can see the percentage of participants grouped according to the type of video game they prefer and play mainly as described above.
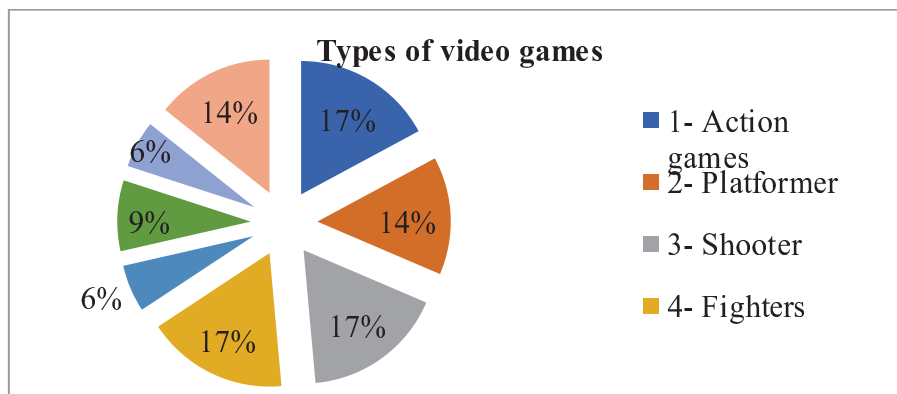

Fig. 1. Percentage of participants ranked according to the type of video game they play predominantly

For analyzing hypotheses and clarity of data, we divided these types of games into two main categories according to the aggressiveness they are promoting. Thus, we have obtained: the category of inherently aggressive video games, consisting of "shooter" and "fighters" games which, by their nature and gaming tasks, imply the manifestation of physical aggression in the virtual environment and the category of potentially aggressive video games and non-aggressive games, which include all other types of video games, because it does not directly request or requires the player to show aggressive virtual behavior to a small extent.

Inherently aggressive video games are played by 12 participants, while potentially aggressive video games are preferred by 23 of the study participants, as can be seen in table no. 2. In the present study, we will use the concept of inherently aggressive or potentially aggressive video games with reference to the category that includes all related game types, depending on the level of aggressiveness promoted by them.

Table no. 2 Frequency of participants according to the category of video game they prefer

Video games categories

	Frequency	Percentage	Valid percentage	Cumulative percentage
1- Inherently aggressive video games	12	34,3	34,3	34,3
2- Potential aggressive video games	23	65,7	65,7	100,0
Total	35	100,0	100,0	

The last variable that we will present in this part of the paper and which has a leading role in this research is the level of aggressiveness of the participants. Table no. 3 presents the general data on the scores obtained by the small students in the Buss-Perry Aggressivity Questionnaire. In this questionnaire, the general level of aggression is between 29 and 145 points.

Participants in the study achieved scores ranging from 51 to 119. In order to obtain the overall aggression score, physical aggression (PA), verbal aggression (VA), anger (A) and hostility (H) were measured. In the following table we can see for each of them, the subscale tested, the minimum value or score, the maximum score, the average, but also the standard deviation. The minimum value for general aggression is 51, while the maximum value is 119. The average score for the overall level of aggression is 80.46.

Table no. 3
Participants' level of aggressiveness

	N	Minimum	Maximum	Mean	Std. deviation
PA score (Physical aggression)	35	11	43	23,31	8,439
VA score (Verbal aggression)	35	7	22	15,09	4,266
A score (Anger)	35	10	30	19,34	5,023
H score (Hostility)	35	11	36	22,71	6,215
Aggressiveness general score	**35**	**51**	**119**	**80,46**	**18,108**
Valid N (Listwise)	35				

Hypothesis 1: The type of video game influences the level of aggression in elementary school children.

To verify the validity of this hypothesis we used the T test for independent samples. The two groups of independent subjects are: the group of small students who play inherently aggressive video games, and the small group of students who play potentially aggressive video games. In table no. 4 it can be noticed that the average of the overall aggression scores obtained by children playing inherently aggressive video games is higher than the scores of those who access potentially aggressive video games.

Table no. 4 Statistics of elementary school groups, which predominantly play a certain type of video games, given the general level of aggression

Group Statistics

	Type of the video game	N	Mean	Std. Deviation	Std. ErrorMean
Aggressiveness general score	1- Inherently aggressive	12	93,08	16,925	4,886
	2- Potential aggressive	23	73,87	15,206	3,171

As can be seen in Table 5, by applying the T test, a coefficient t = 3.299 was obtained, significantly at a significance threshold $p < 0.01$. The average of the overall aggressiveness scores of schoolchildren who predominantly play aggressive video games is 93.08, while the average of the overall aggression scores of schoolchildren who predominantly play aggressive video games is 73.87; the difference between the two averages being 19.21. Between any two participants in the two groups (children playing inherently aggressive games and those playing potentially aggressive games), there is no difference in aggression lower than 7.08 and above 31.34, as aggression scores obtained by participants ranges between 51 and 119.

This confirms the first hypothesis of this research; the type of video game is influencing the level of aggression in elementary school students. Children who predominantly "consume" aggressive video games, such as "shooter" and "fighters", have a significantly higher level of aggressiveness than those who access mainly potentially aggressive or non-aggressive games, such as action / adventure, platformer, racing, tycoon or strategy.

Table no. 5 T test results for independent samples, depending on the type of video game that participants play predominantly

Group Statistics

	Type of the video game	N	Mean	Std. Deviation	Std. ErrorMean
Aggressiveness general score	1- Inherently aggressive	12	93,08	16,925	4,886
	2- Potential aggressive	23	73,87	15,206	3,171

Conclusions

The results obtained from the data analysis generally confirmed the hypotheses of the proposed research, the third hypothesis being only partially confirmed, which supports the

general hypothesis of the study "The influence of video games on aggressiveness in elementary school children". The results also led and contributed to the objectives of the proposed research.

The type of video game preferred by young schoolboys influences their aggressiveness. Children who are mainly playing inherently aggressive video games such as "shooter" or "fighters" have a higher level of aggression than children who play low aggressive video games such as adventure games, action, "platformer", racing, "tycoon" or strategy.

One of the limitations of the study is that other factors that could influence the aggressiveness of elementary school children, such as their environment, family type, family climate, social-economic family conditions, etc. have not been taken into account.

Also, for greater accuracy of data, it would have been advisable to have a larger number of subjects. The larger number of participants would have favored obtaining more specific data, and more accurate results.

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