Playing: traditional (outdoor), electronic (indoor). How much time do children spend on any of these two aspects of playing? Research conducted in an urban center in Greece

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Abstract: **Playing as an activity has roots that are lost in the mist of the past and it has obviously endured though time due to its spontaneous nature. It is a notion tightly intertwined with childhood, as playing is inherent in a child's nature. This activity is an index of mental health and development, through which children broaden their mind, learn to overcome difficulties, sharpen their judgement, explore their surroundings, immerge themselves in imaginary worlds built as their spirit and will dictates.**

With the evolution of time, however, playing has been changing forms and means. The development of technology has had its impact on the type and form of playing. Our focus has shifted, at least partly, from what has been defined as traditional to a broader perception of playing. The last decades have seen the appearance of new forms of playing based on contemporary electronic means developed by modern technology.

Children, nowadays, have forged their own perception and reality regarding the procedure of playing. The way children play is influencing their socialization and the pace and manner in which they activate their body and do sports, key features of the notion of playing. It is undoubtedly true that the changes brought to playing have affected all aspects of everyday life, not only for the children, but for their parents, who get to decide for their offspring's activities, as well as for the teachers, who, in their respect, are involved in the learning procedure, for which playing constitutes an inextricable aspect.

Keywords: **child, research, traditional game (outdoor), video game (indoor).**

I. INTRODUCTION

The main aim of this research has been to investigate the concept of "playing" and especially its two-edged nature, ranging from the traditional to the electronic. Additionally, it has been examined by means of questionnaires how much the children of an urban environment are engaged in the above aspects of playing (traditional and/or electronic). The research has been conducted in Greece, in the second biggest city of the country after Athens, a seaport in the north. The demographic data according to the 2011 census are as follows: Municipality of Thessaloniki (historical city center) 325,182, Thessaloniki Metropolitan Area 1,030,338. The respondents were residents of the broader Thessaloniki area and were classified as belonging in three distinct areas: the city center of Thessaloniki, eastern suburbs (regarded as middle and upper class), western suburbs (considered working class).

The sample of the study were pupils of the last two classes of elementary school (10-12 years old). These children are going through a transitional phase, slowly abandoning childhood and entering puberty, during which many changes take place, emotional as well as physical, thus affecting their psychology and the choices they make regarding their playing habits.

II. THEORY

A. Definition of play

The necessity along with the educative value of playing has already been underlined by ancient philosophers such as Plato and Aristotle and stressed in later years by Montaigne, Rousseau and other scholars. Plato emphasized its inherent nature. Even earlier in Homer's Odyssey the verb play $\pi\alpha i\zeta\omega$ appears, meaning not only behaving like a child but also connecting to the mythical world of nymphs and their gay dancing. The ancient Greeks acknowledged the importance of playing and this is apparent through the numerous findings related to everyday life, significant part of which was dedicated to playing. The first gift given to a newborn was a $\pi\lambda\alpha\tau\acute{\alpha}\gamma\eta$, a form of rattle, which apart from its practical use was also invested with magical properties and was considered an evil repellant. The children clung to their toys all through their childhood only to part with them before marriage by dedicating them to the gods. The boys to Hermes and the girls to Aphrodite or Hera as a symbol of their transition to adulthood, when they reached this marginal age of becoming mature and fertile, ready for procreation.

Playing can be defined as a very interesting occupation including a physical or mental effort aiming at emotional and bodily pleasure (Tsantis, 1991).

According to Haralambopoulos (1973), when referring to "playing" we mean not only various group or individual games but also psychosomatic and mental playful drills like riddles, conundrums and collections. This dual reference both to the kinetic and the mental aspect of playing appears as the means for the normal development of the child, as a preparatory stage for its future life.

When Knox designed the Knox Play Scale (Knox, 1974), she defined play as the spontaneous activity through which the child learns about itself by rehearsing, experiencing, experimenting and orienting itself to the work (Knox, 1997).

The play has also been defined as exploratory in nature and consisting of a variety of activities that involve movement and manipulation in relation to the environment (Robinson, 1977: Sutton – Smith, 1967).

Playing is the fulfillment of learning through action (Feeney, Christensen, & Moravcik, 1996).

The child through play can learn subtle and complex movements, develop intellectual skills, release tension stemming from serious issues that trouble it and at the same time the child enriches its mind with new representations, information and pictures, learns how to focus, to observe, to remember and compare, to discern potential evolution, to create (Kappas, 2005).

Playing is a key characteristic of a person's personality and predisposition to engage in a particular, individual way in playful activities of various kinds and duration (Boyer (1997).

The dispositional characteristics of play were proposed to be that play:

 • Is more internally than externally motivated.

 • Transcends reality as well as reflects reality.

 • Is controlled by the player.

 • Involves more attention to process than product.

 • Is safe.

 • Is usually fun, unpredictable, pleasurable.

 • Is spontaneous and involves non – obligatory active engagement.

(Stewart *et al*. 1991: Bracegirdle, 1992: Goodman, 1994: Bundy, 1997: Parham & Primeau, 1997).

During the last years the play has gone through transformation. Apart from its traditional aspect, the electronic game has gained a strong presence in children's everyday life. The time dedicated to the electronic game constitutes a popular activity that is not connected to school and a social phenomenon spreading in many countries, Greece included.

Nowadays the access to digital gaming is widespread, as mobile phones, tablets and the like are omnipresent in our environment. Moreover, the addition to the urban space of amusement centers offering children the opportunity to have easy access to a number of electronic games is a worth-noticing phenomenon of modern city life.

This new form of entertainment, which is winning over teenagers living in urban space has raised criticism and debate regarding possible benefits and drawbacks to its users.

On the positive side one can site references to the development of cognitive skills but also to the possible fostering of children's imagination and creativity.

On the negative side, one can raise concern about correlation of frequent playing games with violent content and rise of aggressive behavior, the gradual desensitization of children to violence, as well as the risk of addiction.

B. Why is this a necessary research?

There have been various researches and surveys regarding the preferences children show to the traditional play. Surveys examining the tendencies appearing in the various stages of children development; preschooler, schoolchild, teenager. Or the time children and teenagers dedicate to the traditional play and the particular forms of it they prefer, the spontaneous playing of the first years and its contribution to the shaping of a toddler's personality.

Not so many, however, are the references regarding modern tendencies shaping the landscape of playing. The new trends which show up are those defined by the massive introduction of the electronic games in the life of children. The field of a comparative approach to the two aspects of playing -outdoor/traditional and electronic/digital, which gains ground in the life of children- has not been thoroughly explored.

Furthermore, surveys examining the possible positive and negative effects of playing electronic games on children result in a plethora of contradictive conclusions, with opinions covering the whole range between positive and negative.

Undeniably all the above lay the ground for the initiation, with the incitation of the relevant research, of a fruitful dialog regarding the concept of playing and how one can be involved with it in an efficient and advantageous way. The present study tried to examine in an inclusive way the above approaches and to record the extracted results for children of preadolescent age.

C. Aim of the study

The aim of the present research effort was to record the preferences concerning the electronic game of preteenagers living in a contemporary urban environment, taking into account all the restrictions and the opportunities for entertainment that such a surrounding offers. An additional goal of our work has been to examine how much time children spend playing electronic games, possible effects of long hours of playing, as well as which particular type of games are most popular, examining variables such as gender. Last, in a comparative table, we tried to record the opinions of pupils and their parents concerning the control that the latter have over the time that their children dedicate to electronic games' playing.

D. Methodology of the research process

The present research has been conducted as a survey research with qualitative control of the opinions of pupils with simultaneous control of latent variables, applying Cronbach alpha validity check.

In September 2015 we started distributing questionnaires for completion by the selected group of individuals. The whole effort spanned over 12 months of school terms (the entire school year 2015-16 and the first three months of the next school term 2016-17).

We examined:

- The type of electronic games the children prefer to play and the time they consumed playing them.

- The type of homework school children carry out when they connect to the internet.

- Possible effects on the behavior and the psychosomatic status of children observed after long hours of electronic game playing.

- Whether there is a risk of addiction and dependence,

- Effort to detect linked symptoms.

The opinion, which pupils expressed regarding playing, has been recorded in a specially designed questionnaire which comprised several basic demographic features of the pupils' group. The questionnaire has been completed by a total of 523 pupils; 125 were studying in downtown Thessaloniki schools, 209 in eastern suburban schools and 189 attended western suburban schools.

E. Figures, Graphs and Tables

Answering the open question "what is the meaning of playing for you?" the pupils described their feelings. Subsequently their answers were classified in seven (7) broad categories. Since there was no limitation regarding the notions of playing that the children could state, this was considered a multiple-choice question.

The results presented in the table below show clearly that the prevailing answer with 81.6% frequency was that playing is mainly fun and entertainment. The concept of "escape and relaxation" as well that of "friendship, socializing" were significant as well, since around one fourth of the children encompassed these in their answer sheet. At around 10% we find answers referring to playing as "learning tool" and "sport", while the notion of "imagination" is related to playing for a mere 2.5% of the respondents.

Table 1: What is the meaning of playing for you?

	Escape, Relaxation	Learning Tool	Friendship Socializing	Entertainment Fun	Sport	Imagination	Vital necessity	χ^2	p
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)		
Gender									
Boy	67 (26,3)	20 (7,8)	62 (24,3)	204 (80)	32 (12,5)	4 (1,6)	34 (13,3)	4,561	0,713
Girl	74 (27,9)	22 (8,3)	65 (24,5)	223 (84,2)	31 (11,7)	9 (3,4)	28 (10,6)		
Class									
5th Grade	78 (28,8)	24 (8,9)	73 (26,9)	225 (83)	30 (11,1)	8 (3)	35 (12,9)	5,102	0,648
6th Grade	63 (25,3)	18 (7,2)	54 (21,7)	202 (81,1)	33 (13,3)	5 (2)	27 (10,8)		
In which area is your									
Eastern suburban area	21 (10,1)	4 (1,9)	13 (6,3)	178 (85,6)	8 (3,8)	2 (1)	20 (9,6)		
Municipality of Thessaloniki-	55 (44,4)	13 (10,5)	47 (37,9)	107 (86,3)	15 (12,1)	5 (4)	14 (11,3)	178,298	0,000
Western suburban area	65 (34,6)	25 (13,3)	67 (35,6)	142 (75,5)	40 (21,3)	6 (3,2)	28 (14,9)		

When the pupils were asked to state if they preferred an individual way of entertainment almost half of them answered "a lot" and "very much" (both "a lot" and "very much" sums up to 49.3%). Higher percentage has been scored by children residing in the Center of Thessaloniki. There is no surprise there since the scarcity of open-air spaces for playing in the city center orientates pupils to opt for individual forms of fun and entertainment.

Table 2: Can you tell us if you prefer an individual way of entertainment?

	I choose an individual way of entertainment						
	Never n (%)	Rarely n (%)	Sometimes n (%)	Often n (%)	Very often n (%)	x^2	p
Gender							
Boy	14 (5,4)	35 (13,6)	70 (27,2)	89 (34,6)	49 (19,1)	4,323	0,364
Girl	16 (6)	44 (16,5)	86 (32,3)	82 (30,8)	38 (14,3)		
Grade							
5th grade	9 (3,3)	47 (17,3)	73 (26,8)	90 (33,1)	53 (19,5)	12,089	0,017
6th grade	21 (8,4)	32 (12,7)	83 (33,1)	81 (32,3)	34 (13,5)		
Where is your school situated?							
Eastern Suburban Area of Thessaloniki	15 (7,2)	31 (14,8)	69 (33)	62 (29,7)	32 (15,3)		
Municipality of Thessaloniki	5 (4)	17 (13,6)	29 (23,2)	46 (36,8)	28 (22,4)	9,085	0,335
Western Suburban Area of Thessaloniki	10 (5,3)	31 (16,4)	58 (30,7)	63 (33,3)	27 (14,3)		
Father's profession							
Self-employed	7 (4,2)	23 (13,9)	48 (29,1)	53 (32,1)	34 (20,6)		
Employee	23 (6,7)	52 (15,2)	101 (29,4)	116 (33,8)	51 (14,9)	9,188	0,327
Unemployed	0 (0)	4 (26,7)	7 (46,7)	2 (13,3)	2 (13,3)		
Mother's profession							
Self-employed	5 (7)	14 (19,7)	14 (19,7)	25 (35,2)	13 (18,3)		
Employee	13 (4,9)	34 (12,7)	77 (28,7)	97 (36,2)	47 (17,5)	11,766	
Housewife	12 (6,5)	31 (16,8)	65 (35,3)	49 (26,6)	27 (14,7)		
Father's level of education							
Primary	3 (6,1)	13 (26,5)	14 (28,6)	9 (18,4)	10 (20,4)		
Secondary	14 (6,8)	34 (16,5)	68 (33)	63 (30,6)	27 (13,1)	17,515	0,131
Tertiary	11 (5,6)	25 (12,8)	53 (27,2)	72 (36,9)	34 (17,4)		
Second Stage Tertiary	2 (2,7)	7 (9,6)	21 (28,8)	27 (37)	16 (21,9)		
Mother's level of education							
Primary	2 (4,5)	6 (13,6)	12 (27,3)	11 (25)	13 (29,5)		
Secondary	12 (7,3)	33 (20)	48 (29,1)	51 (30,9)	21 (12,7)	15,065	0,238
Tertiary	13 (5,6)	31 (13,3)	75 (32,2)	76 (32,6)	38 (16,3)		
Second Stage Tertiary	3 (3,7)	9 (11,1)	21 (25,9)	33 (40,7)	15 (18,5)		

When asked "what do you usually do when you are on the internet?" most of the children answer that they like to play internet games (70.94%). In second place they say that they use the internet for their homework (61.19%) and third comes communication with friends and relatives (55.64%).

81,1% of boys against 63,7% of the girls state that they use the internet to play internet games. On the other hand, girls lead in using the internet for their homework; 69,9% of girls versus 54,7% of the boys.

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Table 3: What do you usually do when you are on the Internet?

	What do you usually do when you are on the Internet?							
	Seek Information n (%)	Do Homework n (%)	Play Internet Games n (%)	Communicate with friends or other relatives n (%)	Facebook or other social medias n (%)	Chatting n (%)	χ^2	p
Gender								
Boy	95 (37,4)	139 (54,7)	206 (81,1)	142 (55,9)	105 (41,3)	54 (21,3)	62,844	0,000
Girl	99 (38,2)	181 (69,9)	165 (63,7)	149 (57,5)	70 (27)	20 (7,7)		
Class								
5th Grade	110 (41,4)	164 (61,7)	197 (74,1)	133 (50)	76 (28,6)	24 (9)	34,687	0,000
6th Grade	84 (34)	156 (63,2)	174 (70,4)	158 (64)	99 (40,1)	50 (20,2)		
Where is your school situated?								
Eastern Suburban Area of Thessaloniki	70 (34,3)	139 (68,1)	159 (77,9)	132 (64,7)	80 (39,2)	35 (17,2)		
Municipality of Thessaloniki	47 (38,2)	70 (56,9)	81 (65,9)	63 (51,2)	45 (36,6)	20 (16,3)	33,293	0,001
Western Suburban Area of Thessaloniki	77 (41,4)	111 (59,7)	131 (70,4)	96 (51,6)	50 (26,9)	19 (10,2)		

Leading the list of electronic games that the children choose to play are the games described as sport games with a percentage of 19,2%. Strategy games come in second place followed by role playing games in the top three positions of the list.

Table 4: Favourite electronic game. Gender variable

Favourite Electronic Game A	Gender	
	Boy n (%)	Girl n (%)
Adventure	2 (66,7)	1 (33,3)
Educative-mind games	0 (0)	10 (100)
Battle games	7 (77,8)	2 (22,2)
Fix – shooters	9 (81,8)	2 (18,2)
On line strategy	34 (79,1)	9 (20,9)
Music	1 (16,7)	5 (83,3)
Platform games	13 (23,2)	43 (76,8)
Puzzles	1 (20)	4 (80)
Racing games	21 (87,5)	3 (12,5)
Retro	1 (20)	4 (80)
Role playing	7 (10,8)	58 (89,2)
Third – person shooters	13 (100)	0 (0)
Multigame sites Friv & Kizi	10 (16,1)	52 (83,9)
Sport games	73 (78,5)	20 (21,5)
Strategy games	56 (70,9)	23 (29,1)

It is noteworthy how gender appears to differentiate the children's answers and preferences. Boys tend to select mostly racing and sport games, as well as strategy and battle games, whereas girls express mainly inclination to educative-mind games, role playing and music games.

**Table 5: How often do you play video games on weekdays?**

	Never n (%)	Rarely n (%)	Sometimes n (%)	Often – Always n (%)	x^2	p
Gender						
Boy	39 (15,2)	114 (44,4)	70 (27,2)	34 (13,2)	23,475	0,000
Girl	81 (30,5)	114 (42,9)	56 (21,1)	15 (5,6)		
Class						
5th Grade	70 (25,7)	125 (46)	56 (20,6)	21 (7,7)	7,180	0,066
6th Grade	50 (19,9)	103 (41)	70 (27,9)	28 (11,2)		
Where is your school situated?						
Eastern Suburban Area of Thessaloniki	48 (23)	78 (37,3)	63 (30,1)	20 (9,6)		
Municipality of Thessaloniki	23 (18,4)	56 (44,8)	30 (24)	16 (12,8)	14,880	0,021
Western Suburban Area of Thessaloniki	49 (25,9)	94 (49,7)	33 (17,5)	13 (6,9)		
Father's Profession						
Self - employed	41 (24,8)	75 (45,5)	35 (21,2)	14 (8,5)		
Employee	79 (23)	146 (42,6)	86 (25,1)	32 (9,3)	7,135	0,309
Unemployed	0 (0)	7 (46,7)	5 (33,3)	3 (20)		
Mother's Profession						
Self - employed	18 (25,4)	33 (46,5)	13 (18,3)	7 (9,9)		
Employee	62 (23,1)	111 (41,4)	75 (28)	20 (7,5)	6,853	0,335
Housewife	40 (21,7)	84 (45,7)	38 (20,7)	22 (12)		
Father's level of education						
Primary	8 (16,3)	23 (46,9)	12 (24,5)	6 (12,2)		
Secondary	50 (24,3)	93 (45,1)	44 (21,4)	19 (9,2)	7,261	0,610
Tertiary	40 (20,5)	84 (43,1)	55 (28,2)	16 (8,2)		
Second Stage Tertiary	22 (30,1)	28 (38,4)	15 (20,5)	8 (11)		
Mother's level of education						
Primary	8 (18,2)	21 (47,7)	9 (20,5)	6 (13,6)		
Secondary	33 (20)	76 (46,1)	39 (23,6)	17 (10,3)	5,436	0,795
Tertiary	56 (24)	96 (41,2)	61 (26,2)	20 (8,6)		
Second Stage Tertiary	23 (28,4)	35 (43,2)	17 (21)	6 (7,4)		

At the question examining the time that children spent playing electronic games the prevailing answer is "rarely" with a percentage of 43,6%. However, the positive answers of sixth grade pupils tend to be higher. The profession of the parents apparently sets a trend, as the answers "often" and "always" come primarily by pupils whose father is unemployed and mother an employee.

To this, as to previous questions alike, the responses of boys studying in schools of the city center present statistically significant differences from the rest, given that they tend to opt for "often" and "always" when asked to comment on the time they spent playing electronic games.

Regarding some questions aiming to record the psychosomatic effects on children after long hours of electronic game playing, the majority of the respondents admitted the appearance of such symptoms, namely headaches, eye or back pains. In the second place we list consequences relating to quarrels with close friends and family and in the third place what is classified as the desire of the children to simulate and live in reality the scenarios of their favourite electronic games.

Table 6: How do you feel after playing electronic games for several hours?
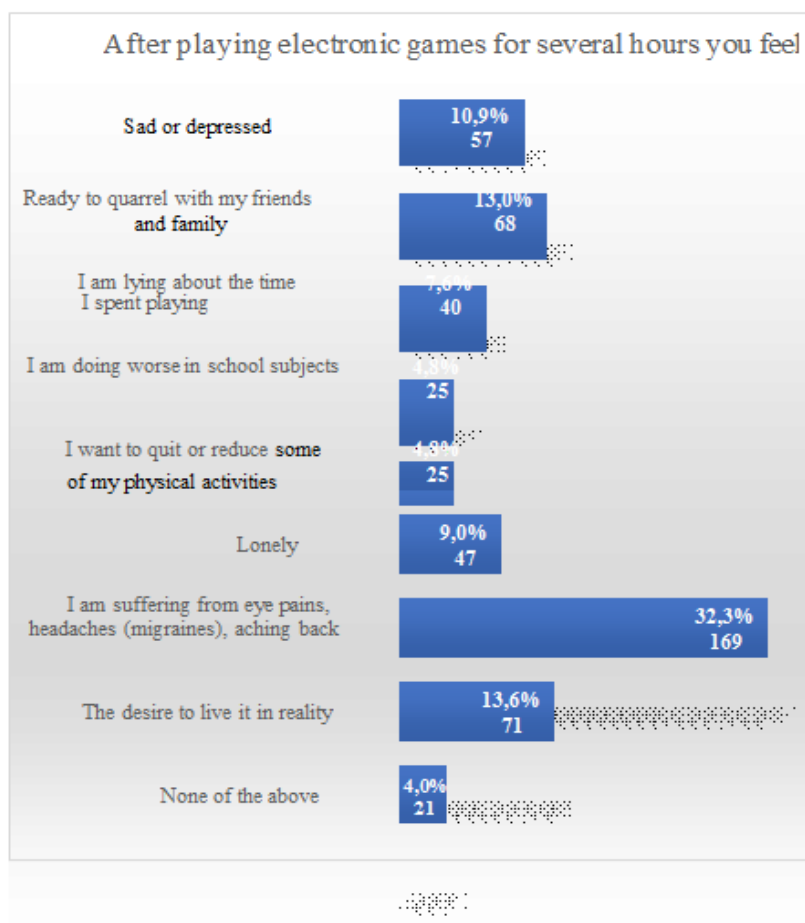
Table 7: Comparison between the views of parents and children regarding the degree of control on behalf of the parents of the time their children spend playing electronic games
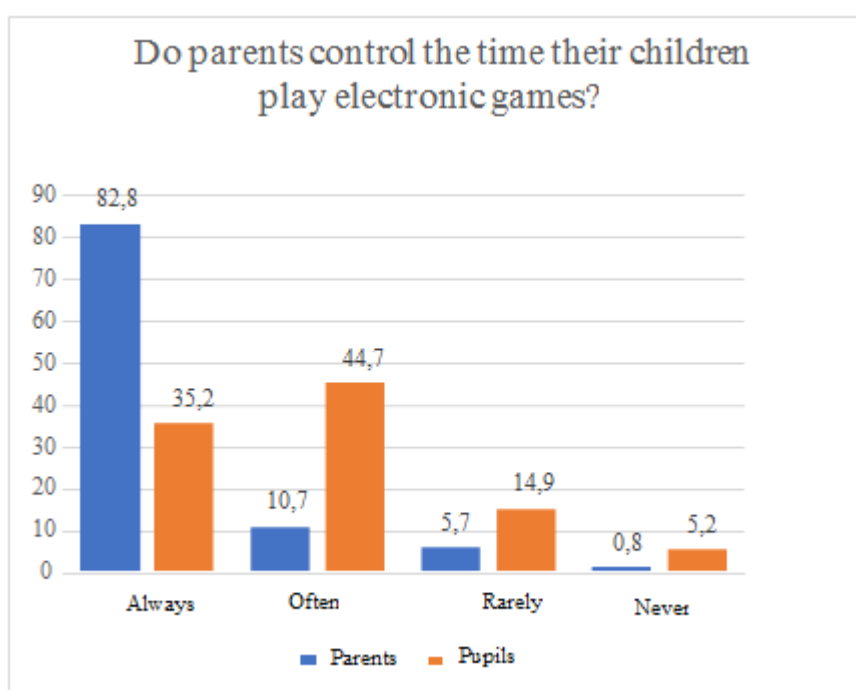
III. CONCLUSION

The survey has showed that for the majority of children (81.6%) the play is predominantly fun and entertainment. The notions of "escape and relaxation" and of "friendship, socializing" are also considered important for them, since almost one fourth of them select this answer.

When the pupils were asked whether they preferred to entertain themselves playing alone, half of them answered "often" and "very often". Children attending schools in the city center opted for individual ways of entertainment in higher percentage and this could be attributed to the scarcity of open-air spaces for playing in the city center which orientates pupils to individual forms of fun and entertainment.

When asked "what do you usually do when you are on the internet?" most of the children answered that they like to play internet games (70.94%). The gender variable plays a significant role: 81,1% of boys against 63,7% of the girls state that they use the internet to play internet games. On the other hand, girls lead in using the internet for their homework.

It is worth noticing also that girls are less encouraged by their parents to engage in playing electronic games. This is undoubtedly linked to fixed social perceptions regarding gender related roles and stereotypes.

Sport games are the most popular electronic games with children, followed in second place by strategy games and role-playing games in third position.

It is noteworthy how gender appears to differentiate the children's' answers and preferences. Boys tend to select mostly racing and sport games, as well as strategy and battle games, whereas girls express mainly inclination to educative-mind games, role playing and music games.

When asked to comment on the psychosomatic effects they might be experiencing after long hours of electronic game playing, the majority of the children admitted the appearance of such symptoms, namely headaches, eye or back pains. In the second place we recorded effects such quarrels with close friends and family and in the third place what is classified as the desire of the children to simulate and live in reality the scenarios of their favourite electronic games.

Most parents, regardless of their gender, age, profession, educational level and area of residence, recognize the educative and emotional value of playing. Their majority adopts a positive stance towards the traditional play. As for the playing of electronic games, parents believe that their children's young age allows them to control the time they spend playing and set limits. This is why they rarely observe changes in their children's attitude. Nevertheless, the majority of parents does not know the type of electronic game that their children prefer to play.

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