Transmission of values in adolescents: an analysis with video games

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Abstract

Introduction: Like any other audiovisual products, video games are tools that enable the transmission of contents. However, while the educational utilities of this medium of communication have been researched in several occasions, its transmission of values has not been analysed in depth. **Method:** A correlational approach based on a survey questionnaire has been used in order to examine video game consumption habits among adolescents (N=110). In addition, the content of the video games used the most by research participants was subjected to analysis. **Results and conclusions:** The study has shown that there are significant differences in video game usage among male and female adolescents, and that there are no significant differences according to age groups. The study also confirmed that video games are, indeed, transmitters of certain values.

Keywords

Video games; video game usage; transmission of values; media literacy.

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Translation by **Cruz Alberto Martínez Arcos**, Ph.D. (Universidad Autónoma de Tamaulipas)

1. Introduction

Over the years, since their inception about 60 years ago, video games have evolved in different ways. What has remained intact, however, has been their objective: entertain. As their name suggests, they are audiovisual games. The Real Academia Española (RAE) defines a video game as an "electronic device that allows, through appropriate commands, to simulate games on TV or computer screens" (RAE, 2001). Obviously, according to the latest advances regarding this object of study, this definition is somewhat outdated, since we no longer necessarily need a TV or computer screen to play video games, and can use portable and mobile consoles instead. Marqués defines them as a type of interactive electronic game, present in different media (ROM, cartridge, magnetic or optical disk, online platform, etc.) and used on different platforms (pocket device, console attached to a TV set, arcade, microcomputer, interactive video, networked platform) (Marqués, 2000).

Like any other media, video games have a number of characteristics. According to Gros (2000) they are the following: they have a series of symbolic notations, i.e. they contain textual information, sound, music, animation, video, photographs and images in three dimensions, are dynamic and allow us to show on a screen changing phenomena and highly interactive processes.

The video game industry has grown exponentially in recent years, and everything indicates that it will continue to grow. A study conducted by the PwC agency (2011) indicates that, while the market volume in 2010 amounted to 55 billion dollars, the forecast for 2015 is 82,400 million, which is an increase of 8.2% according to the compound annual growth rate. If we look at the data provided by this study on the television industry, the growth will be of only 7%, which is a lower growth rate in comparison with video games, although the television's market volume is clearly larger. In Spain, however, in recent years there has been a decrease in the market of video games, going from 1,454 billion euros turnover in 2007 to only 762 million euros in 2013, which is a very similar to the figures from 2002. However, according to the forecasts of the PwC agency, the figures from 2007 will be exceeded in 2015, reaching 1,716 billion euros. This year the video game industry will surpass the cinema industry on market figures.

In addition to their economic impact, video games have achieved great influence and consolidation with the passing of the years. Although in many places they are still seen as mere entertainment, video games have become a profession, a way of life. In South Korea, for example, video game matches involving professional players have been broadcast on television since 15 years ago. Meanwhile the United States grants electronic sports o e-sports visa to video game players, as the video game industry increasingly attracts more people: the World Championship of *League of Legends*, currently one of the most successful video games with an audience of 32 million people throughout the world and 27 million players per day.

With regards to video game consumers, several authors have shown that video games are used more frequently by teens (Estallo, 1995; in Etxeberria, 2001) and by males (Estallo, 1995; Funk, 1993; in Etxeberria, 2001). Likewise, a study conducted among children of the community of Madrid (2005)

concluded in the same way: 69% of children admited to play video games. If we look at the gender of video game players, 85% of boys play video games while only 52% of girls do so. In terms of age, as people grow older the use of video games declines. Thus, video games are played by 78% of students in the third cycle of primary school, 73% of students in the first cycle of secondary education, 65% of students in the second cycle of secondary education, and only 52% of high school students.

While we might think that the only purpose of video games is to entertain, different authors have highlighted their academic opportunities (Etxeberria 1999; Esther-Gabriel, 1994; Le Diberdier, 1998; Mandinacht, 1987). Their pedagogical capacity is undeniable, as pointe out by Etxeberria (2001). According to this author, video games "have many of the features that require an effective organisation of the social learning", including: "the playful nature of learning, the growing and progressive difficulty of skills, the individual rhythm of each participant, the immediate knowledge of the results" (p. 11). So in comparison to other activities that take place at school or at home, video games are very effective learning tools. Many examples can be found in *Los video games: aprender en mundos reales y virtuales* ("Video games: learning in real and virtual worlds"), in which Lacasa (2011) presents different real-life examples of classroom activities dedicated to learning through the use of video games.

According to Gros, using video games in a formal learning context may be a valuable tool for teachers, since video games have shown a great motivating potential among students (2002: 13). This same author points out that:

> "What a video game [...] offers is not a mere simulation [...]. The objective of the use of these video games is not to develop skills to play but to think and reflect on the content, on the decisions taken, to compare them with the decisions taken by other colleagues, to analyse the generated learning, and its transfer. Ultimately, the teacher should take advantage of the richness of a tool that luckily is liked by and can motivate students, who know it to use."

In the same way that video games have been introduced in the academic and school realms, they have also been incorporated into the professional field. In fact, the games used by companies for the training of workers are known as *serious games*. In this sense, Chabert and Allain (2014) point out that video games have become a real and important market with their companies, their customers, its R&D and the support of public authorities as well as the common tender among several French ministries.

However, as is the case with television, movies or other media, video games are also a transmitter of values, feelings, sensations, thoughts, etc. And these values are not neutral, they present certain options of life and a certain scale of values (Medrano, Martinez de Morentin, Aierbe, 2010). These values, as you would expect, are not always desirable from an educational point of view.

1.1. Schwartz's model of values

The study of values is not something new in the academic literature. For many years authors have tried to formulate a satisfactory definition and it seems, according to Schwartz (1992), that a

consensus by different authors in different fields has been reached. We could define values in the following way: "criterion used by people to select and justify their actions and assess people (including oneself) and different events" (Kluckhohn, 1951; Rockeach, 1973; Williams, 1968).

Thus, we could say that values are the qualities people develop, initially, to respond to biological needs and, later, according to their social context; based on which people shapes their representations of reality and acts.

Values play a crucial role in the proper functioning of all types of organisations and in the performance of all of their components. An organisation's values (which are defined by the set of values held by its members) define the ideals of its members and, therefore, its responses to and perceptions of the world that surrounds it. In the same way, they are responsible for the satisfaction of each of the members, their identification with the organisation and their intentions to remain or leave the organisation (Judge and Bretz, 1992; Kristof, 1996; Kristof-Brown *et al.*, 2005; Meglino and Ravlin, 1998; Verquer *et al.*, 2003; Quaquebeke, Graf, Kerschereiter, Schuh, and Dick, 2014).

Like it occurs with the definition, the literature identifies five intrinsic characteristics of values (Schwartz and Bilsky, 1987, 1990): 1) they are concepts or beliefs, 2) concerning states or behaviours, 3) go beyond specific situations, 4) guide the selection or evaluation of behaviours and events, 5) and are ordered by their relative importance. Values, understood in this way, differ from attitudes primarily in their generality or abstraction and hierarchical ordering according to their importance (Bem, 1970; Rockeach, 1973).

In addition to these formal characteristics, Schwartz and Bilsky (1987, 1990) added that the main aspect of a value is the type of goal or motivational concern it expresses. They developed a universal typology of the different contents of values, concluding that values represent 3 universal requirements for human beings: need of the individual as a biological organism, need for social interaction, and survival and need for well-being.

Although, as noted Bermejo Berros (2010), there is still no definitive consensus on values and their classification, Schwartz and Bilsky (1987, 1990) initially defined eight "motivational types" of values: prosocial, restrictive conformity, pleasure, achievement, maturity and self-direction, safety and power. In a second review (1992), Schwartz proposes 11 motivational types of values, adding new types and modifying some of the previous ones. However, in subsequent revisions, he reduced the number to 10 values. Thus, the list of motivational types of values is as follows: self-direction, stimulation, hedonism, achievement, power, safety, conformity, tradition, benevolence and universalism.

- Self-direction: the goal of this value is independent thought and action.

- Stimulation: derived from the need for variety of situations to maintain an optimal level of activation (Berlyne, 1960; Houston y Mednick, 1963; Maddi, 1961; in Schwartz, 1992b).

- Hedonism: refers to the organism's need for pleasure and satisfaction (Bentham, 1938 / 1948; Freud, 1993; Morris, 1956; Williams, 1968; in Schwartz, 1992b).

- Achievement: it is the personal success through the demonstration of competences according to social standards.

- Power: it relates to certain former motivational type, but unlike "achievement", "power" is characterised by the attainment or preservation of a dominant position within the social system.

- Security: is it related to harmony, the stability of society, relationships and of self.

- Conformity: it is characterised by restricting certain actions, inclinations and impulses that could damage or inconvenience others and violate different social norms.

- Tradition: within this group we find values that are defined by respect, commitment and acceptance of customs and ideas imposed by the culture or religion of each individual.

- Benevolence: refers to the concern of everyone for the welfare of the people of her around.

- Universalism: understanding, appreciation, tolerance and protection of the well-being of all persons and nature without distinction.

1.2. Values and video games: previous research

Values have been studied by many authors and in different areas and fields, including media studies. Several studies have analysed the presence and the impact of the media on society and their ability a diversity of contents, including values. In the same way, scholars have studied the kinds of values they media pass on to consumers.

> "The transmitted values are not neutral, they present certain life choices and a certain scale of values, which does not always coincide with desirable values from the educational point of view" (Medrano, Martinez de Morentin and Aierbe, 2010: 24)

This argument refers to the world of television, but can be extrapolated to any of the other mass media: newspapers, radio stations, internet websites and cinema. In these media we can find occurrences, situations and actions that go in line with that statement.

Video games, although not a medium of communication per se, share diverse aspects with them: they are stories told through a screen (in the same way that occurs with television and cinema), with the peculiarity that it is an interactive medium, i.e., the customer himself takes the decisions and takes control of the story. Therefore, the transmitting capacity of video games would be, if not the same, very similar to that of television, taking into account, in addition, their great acceptance today. Moreover, the contents, attitudes, values and beliefs transmitted by the media and video games are also similar.

However, research on the incidence of values by video games are scarce, as Ortega Carrillo and Robles Vílchez (2008: 156) point out:

> "Studies on video games and their impact on the formation of values are still scarce and little significant. The Educational technology and social research group (TEIS) of the

> University of Granadas [...] is one of the few groups that include this subject among its priority research lines (Ortega Carrillo, 2001 and 2003; and Pascual and Ortega, 2007). The work of Vera y Espinosa (2003) also highlight the power of video games to convey attitudes and shape values".

In the same way, Pindado, in his review of the literature on video games (2005), examines many studies addressing this subject. However, none of them is about the transmission of values by these electronic games. These studies address the educational power of video games, the cognitive value, the acquisition of skills and abilities, literacy, prevention and health promotion and video games as socialising medium.

Research on video games and values has been scarce in recent years. However, Ortega Carrillo and Robles Vílchez carried out a study to analyse the values transmitted in violent video games (2008). Based on a sample of college students the study examines the possibilities offered by a number of video games chosen by the students themselves. This study used a 30-items instrument designed by the authors to analyse video games in different facets. For the part of values, in addition to the corresponding indicators, the authors provided participants/researchers with a list of the different values and attitudes, to facilitate their identification. This research shows that violent video games transmit values and counter-values. However, the presence of the first type occurs as a way to get the second type. "Be perfect, surpass yourself, rejoice and be competent to kill, annihilate, destroy, steal or rape, is a moral perversion, unacceptable from an educational point of view" (Ortega Carrillo and Robles Vílchez, 2008: 164).

The media have always been the target of various social agents when explaining "the evils that afflict society" (Pindado, 2010). While the most-criticised medium has been television, "in the last decade it has shared honour with video games and the Internet" (Pindado, 2010). Today's society is changing at a very high pace, due to the full inclusion of technology in our daily lives. This is the "global village" (Medrano and Aierbe, 2008), which implies that adolescents are part "of a generation that was born and lived in environments with different screens" (Medrano and Aierbe, 2008). They are the so called digital natives:

> "They live immersed in an authentic electronic and media reality that surrounds their lives and in which they move with ease. This is a world in which adults feel at times so intimidated as aliens, and that they, on the other hand, dominate with great skill" (Pindado, 2010: 55).

These teenagers, who are very skilled in the management of electronic devices and technologies, build their values differently from today's adults. They do not do it through the traditional socialization media, such as school or family, but do so through the media.

Having reviewed the state of the art, the main objectives of this article are as follows: 1. identify adolescents' video gam use habits according to age and gender, and 2 to analyse the types of values transmitted by video games. Based on these objectives, we formulated the following hypotheses: 1) there are differences in video games use habits according to age and gender; 2) video games are a medium transmitter of values; and 3) the values transmitted by video games are individualistic, collectivist and mixed.

2. Method
2.1. Participants

The sample size was n=110 compulsory secondary education students from Getxo, province of Bizkaia. Of them, 54 are in the first year (49.1%) and 56 in the fourth year (51.9%). Within the first group of students, at the time of the survey, 43 were 12 years old and 11 were 13 years old. Of the second group, 40 were 15 years old and 16 were 16 years old at the time of the survey. 54 of the participants were female, and 55 were male.

Table 1: Number of participants by age and gender

	12-13 years old	15-16 years old	Total
Female	18	36	54
Male	25	31	55
Total	43	67	110

2.2. Design

The study follows a quantitative and correlational design. Analysis of frequencies, exploratory factor analysis, as well as the Student's T test were performed to examine differences in terms of age and gender.

2.3. Instruments

The instrument used is the "questionnaire on video games consumption habits", designed and validated by López Becerra (2012). This questionnaire consists of 24 items: the first 19 use a Likert-type scale, with 5 possible answers, ranging from "Totally disagree" (1) to "totally agree" (5); the last 5 offer diverse response alternatives. For this research, however, we added one item, the number 25, which asks respondents about their favourite video games. The inclusion of this last open question aims to identify the general preferences with respect to video games, to carry out the subsequent analysis of these video games.

The instrument used for the analysis of each video game is Schwartz's list of 52 different values. These values we sorted into different groups, which represent the different motivational types: openness to change (self-direction, stimulation and hedonism), self-enhancement (achievement and power), conservation (security, conformity and tradition) and self-transcendence (benevolence and universalism)

2.4. Procedure

For this study we contacted the aforementioned school and provided it with the necessary information about the project, its objectives and procedures. Before the application of the questionnaire we obtained the consent of the participants' parents.

The administration of the questionnaire was approved by the management and teaching staff of the school. We started with the first year secondary school students, one class at a time. The application of the questionnaire took place during school hours and lasted a maximum of 20 minutes. Before beginning, we explained to the participants the purpose of the questionnaire and the instructions to fill it (which also appeared in the document itself).

2.5. Data analysis

After the administration of the questionnaire the answers were analysed in the IBM SPSS Statistics 21 program. Different statistical analyses were performed, including an analysis of the questionnaire's total reliability and an exploratory factor analysis.

Various analyses were also carried out to study the different relationships between the use of video games and such variables as gender and age.

Similarly, we analysed of frequency of item 25 of the questionnaire, which examines the favourite games of the participating teens. After the table of frequencies was developed, we performed an axiological analysis of these videogames based on Schwartz's model and list of values.

3. Results

According to Cronbach's Alpha the total reliability of the questionnaire is $\alpha = 0.954$. In other words, this is a very acceptable reliability level.

An exploratory factor analysis of the questionnaire was performed. In concordance with the original author, a first analysis was carried out to discover correlations between factors. To this end we used the Principal Component Analysis and the direct oblimin rotation method, as a methods of extraction.

Table 2: Analysis of correlations between the different factors.

Matrix of correlations between factors				
Factor	1	2	3	4
1	1.000			
2	.315	1.000		
3	-.341	-.497	1.000	
4	489	435	-.607	1.000

Extraction method: Principal Component Analysis.
Rotation method: Oblimin with Kaiser Normalisation.

   As we can see in table 2, the correlations between the different factors are not high, so this is a multidimensional test.

 A second factor analysis was performed, this time using as extraction method the principal component analysis and the varimax rotation method. The results are ordered by size.

Table 3: Weight of items

	Rotated component matrix*			
	Component			
	1	2	3	4
Item 1	.785	.405		
Item 6	.753			
Item 3	.751			.380
Item 7	.737			
Item 20	.713			
Item 5	.649	.410		
Item 23	.627			.475
Item 2	.618	.480		
Item 22	.579	.407		.481
Item 21	.555	.400		
Item 4	.534	.433		
Item 24	.493	.439	.421	
Item 12		.773		
Item 16		.715		
Item 14		.709		
Item 15	.421	.669		
Item 8		.609		
Item 13	.458	.585		
Item 18			.790	
Item 17			.763	
Item 19			.739	
Item 10		.463	.465	.392
Item 9				.710
Item 11			.517	.543

Extraction method: Principal Component Analysis.
Rotation method: Varimax with Kaiser Normalisation.
* Rotation has converged in 14 iterations.

The four factors extracted account for 67.887% of the total variance of the questionnaire, divided in the following way:

The first factor explains 49.907% of the variance. It consists of items 1, 2, 3, 4, 5, 6, 7, 20, 21, 22 and 23. According to the author, this factor makes reference to "the habits of use and the degree of attraction to videogames. This factor is called "degree of attraction to video games".

The second factor consists of items 12, 13, 14, 15 and 16 and 7,771% of the total variance. It is called "level of concern about video games" and refers to the ability of teens "to play, get games or search information about video games they like the most".

The third factor explains 6.005% of the total variance of the questionnaire, and consists of items 10, 17, 18 and 19. Refers to the degree of interference posed by gamers in academic activities. It is termed "interference of video games with academic activities"

The fourth and last factor represents 4.204% of total variance and consists of items 9 and 11. Refers to the interference produced by video games in non-academic activities. It is called "interference of video games with other activities".

3.1. Differences according to gender and age

The Student's T test was used to detect gender differences in video game habits and verify the first hypothesis ("there are differences in video game use habits depending on age and gender"). To this end, we compared the factors included in the questionnaire (table 4).

Table 4: Differences associated with gender

	Gender	N	Average	SD	t	p
Degree of attraction to video games	Girl	54	29.8587	9.41032	-6,902	0.000
	Boy	56	41.4546	8.18668		
Concern about video games	Girl	54	7.9867	3.45612	-6,475	0.000
	Boy	56	13.2500	4.91473		
Academic interference	Girl	54	5.1667	2.20420	-3,682	0.000
	Boy	56	7.1071	3.21179		
Non-academic interference	Girl	54	2.4630	1.16089	-2,751	0.007
	Boy	56	3.1607	1.47435		

As we can see, there are differences in the four factors. Scores for boys are, on average, higher than those for girls: they feel more attraction for video games (t = 6.902), have greater concern (t = -6.475), video games interfere more with both academic and non-academic activities (t = - 3,682 and t = -2,751). The differences are, in addition, significant in all cases ($p \le 0.05$).

Differences according to age

As with gender, an analysis was carried out to identify the differences between different age groups. The Student's T test was used given that participants were divided in two different school years and, therefore, in two age groups (table 5).

**Table 5: Differences according to age**

	Age group	N	Average	SD	t	p
Degree of attraction to videogames	12-13	43	36.8143	11.07920	0.839	0.403
	15-16	67	35.0868	10.18211		
Concern about video games	12-13	43	11.8438	5.25030	2.007	0.047
	15-16	67	9.9104	4.71532		
Academic interference	12-13	43	5.9302	2.15357	-0.644	0.521
	15-16	67	6.2985	3.32582		
Non-academic interference	12-13	43	3.0465	1.34436	1.407	0.162
	15-16	67	2.6716	1.37497		

In the case of differences according to age, we can see that in 3 of the 4 factors, 12-13 year-old participants have higher scores: degree of attraction to videogames (t = 0.839), concern about videogames (t = 2.007) and non-academic interference (t = 1.407). The only dimension in which 15-16 year-old students scored higher is academic interference (t = -0.644). However, these differences are only significant in the second factor ($p \leq 0.05$).

3.2. Analysis of video games' values

In order to verify the second and third hypothesis and carry out the analysis of the values transmitted by video games, we identified the favourite or most-used videogames among adolescents. Figure 1 shows the favourite games of participants, and the frequency with which they were chosen. As we can see, four video games have stood out above the rest: FIFA, GTA V, Call of Duty and Just Dance. Together, they constitute 50% of the cases. The rest of the video games are very behind in terms of frequency: Mario Bros., Mario Kart and Sims 3 are the following favourite games with 3.6% each.

Figure 1: Frequency of most-used video games
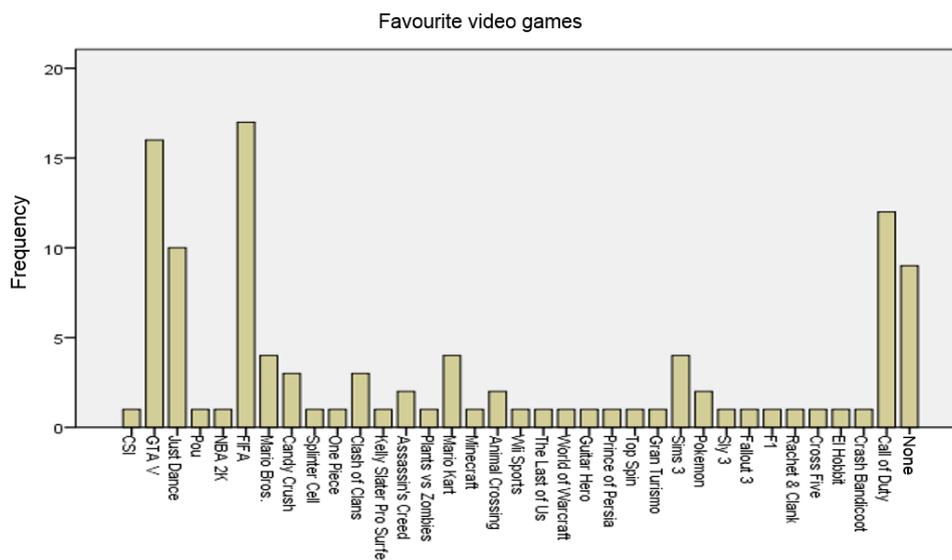
For the analysis, we selected the video games used the most by teens, given that they have the greatest presence and influence. The list of analysed video games is shown in table 4.

Table 6: Analysed video games

Title	Platform	Genre	Year	Developer	Description
14 FIFA	PS3	Sports	2013	EA Sports	Football Simulator
Grand Theft Auto V	PS3	Action-adventure	2013	Rockstar Games	3 players must complete missions to reach the objective
Just Dance 4	Wii	Musical	2012	Ubisoft	Dancing to the sound of music
Call of Duty: Black Ops II	PS3	First-person action	2012	Treyarch	Soldiers fight around the world
The Sims 3	PC	Social Simulator	2009	Maxis	Create a character and control all aspects of his life
Mario Kart Wii	Wii	Racing Simulator	2008	Nintendo	Racing simulator
Super Mario Galaxy 2	Wii	Platforms	2010	Nintendo	Run, jump and move around different planets to set the trapped Princess free

"Platform" refers to the platform in which the game has been analysed.

Schwartz's list of 52 different values was used for the analysis of each video game. These values were classified in different motivational types, each one of them referring to different dimensions, as explained in the "instruments" section. Table 7 presents the motivational types and their presence in the analysed video games.

Table 7: Presence of motivational types in various video games

	N	Media	SD	Asymmetry	Kurtosis
Self-direction	7	2.14	2.854	764	-1.687
Stimulation	7	1.57	1.272	-.222	-1.715
Hedonism	7	1.14	1.069	-.374	-2.800
Achievement	7	3.29	1.976	-.733	-.864
Power	7	2.71	2.138	.374	-2.800
Safety	7	2.71	3.147	.727	-1.415
Conformity	7	1.43	1.902	.764	-1.687
Tradition	7	1.00	1.732	1.347	-.111
Benevolence	7	3.29	2.928	.277	-1.482
Universalism	7	2.86	3.579	1.079	-.973
N valid	7				

In terms of the aforementioned values, we confirmed their presence in the different characters of the video games, both protagonists and secondary characters. The study shows that 3 values (*capable, successful* and *social recognition)* appear in 6 of 7 of the examined games (figure 2). Other 3 values (*daring, helpful* and *loyal*) appear in 5 of the 7 video games used the most by adolescents. On the contrary, many values are hardly present in these games, as shown in Figure 3.

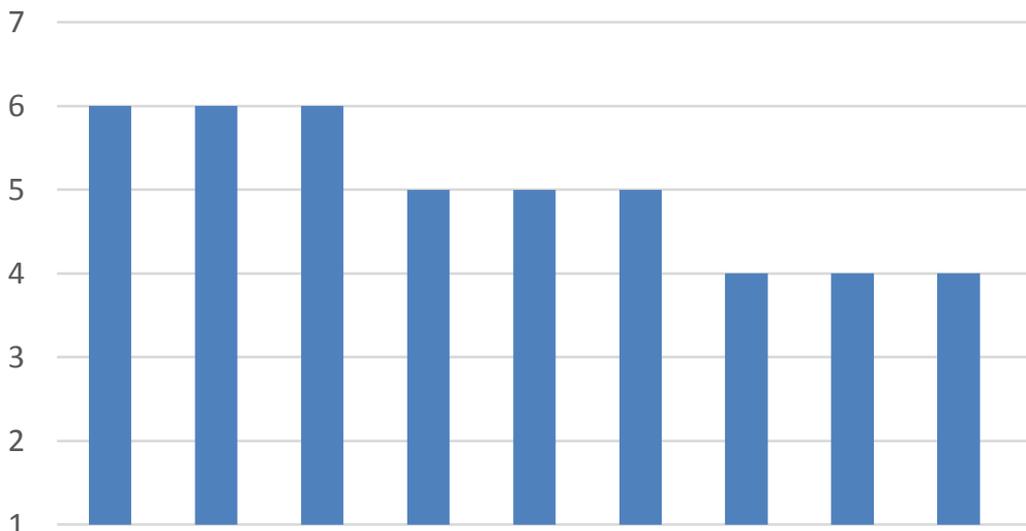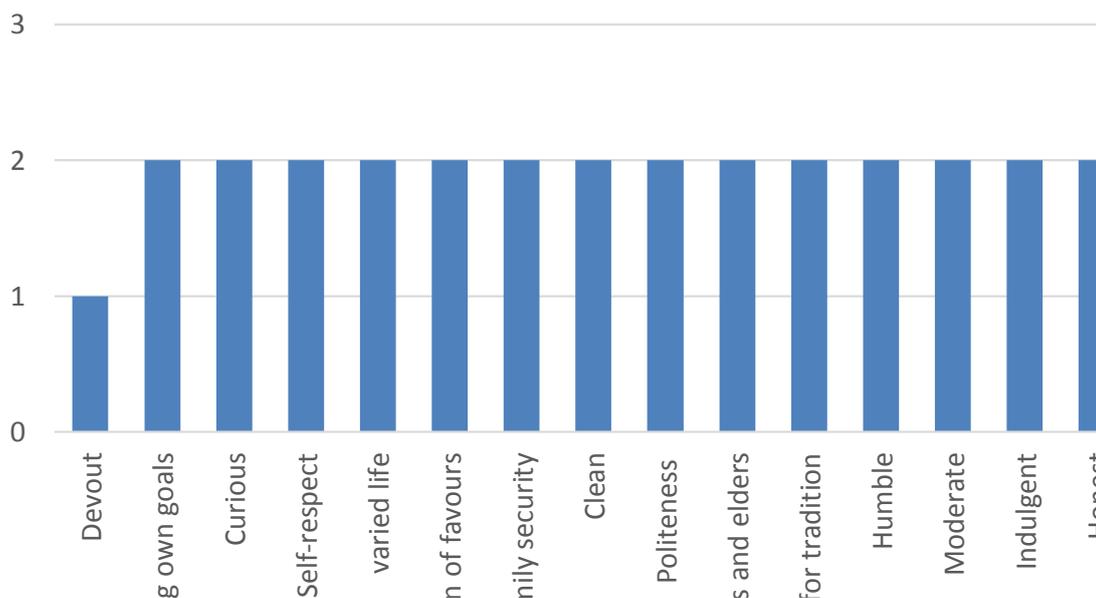**Figure 2: Most frequent values in the sample of video games**

Figure 3: Least frequent values in the analysed video games

4. Discussion and conclusions

It seems necessary to begin the conclusions section alluding to the questionnaire used in this research. As mentioned in the results section, the reliability analysis yields a good result, with an index α=0.954. This score converges with the one obtained by the author of the scale (α=0.915), although it is slightly higher.

In terms of the factor analysis, we found serious differences in the composition of each factor. According to the analysis carried out in this research, the factors are ordered in a way and contain items different from those obtained by López Becerra (2012). This could be due to the fact that the original design of the questionnaire is aimed at preteens, so its application to teens changed the results. Another explanation could be the number of items contained in the questionnaire, the last 5 in particular: the design of these items can lead to confusion, since their drafting and answer options are not entirely clear.

In terms of the objectives of this study, the first one was to confirm the existence of differences in video game usage among male and female teens, based on the hypothesis that the rate of use among males would be higher than among females. The results confirmed that video game usage among boys is higher than among girls. These data confirm the results of other related studies carried out by different authors (Estallo, 1993; Funk, 1995; Protégeles, Civertice and Defensor del Menor, 2005).

In terms of the age of players, the differences are not significant. Unlike the results found in other research studies, the age is not a relevant factor to explain video game usage. In other words, preteens and teens are attracted by video games with the same intensity, have the same degree of concern about video games, and their academic and non-academic activities are affected by video games with the same intensity.

The second objective was to analyse the values transmitted by video games, based on the hypothesis that videogames transmit values and that they are both individualist and collectivist. The first general analysis of the results shows that, in fact, video games transmit values. All of the analysed video games transmit values, as expected, and as shown by other researchers (Ortega Carrillo and Robles Vílchez, 2008).

Similarly, the values transmitted by video games have proved to be both individualist and collectivist. If we look at the most-common values we can see that some of them belong to the first group (successful, social recognition) and some others belong to the second group (loyal, helpful). The frequency with which they appear is very similar in both groups, so we could say that video games transmitted collectivist and individualist values alike. As explained at the beginning, the state of the art review showed that no other studies have addressed the transmission of values by video games, so these findings are exploratory, and therefore it would be appropriate to confirm them in future research.

However, these conclusions do converge with the contributions of other researchers in relation to the media: they are transmitters of individualist and collectivists values (Medrano, Aierbe and Martínez de Morentin, 2011).

Video games have proven to be able to transmit any type of content and become a tool to carry out different activities and tasks ranging from mere entertainment to educational applications and a diversity of treatments and/or rehabilitations.

However, we did not find any previous research addressing the possible consequences of video games in relation to the values they transmit. On some occasions the academia and the media have argued that violent video games cause violent behaviours. However, we have not found any study that corroborate this hypothesis. Likewise, there are no studies addressing the possible effects of the values that are transmitted by video games and that the educational community has considered as desirable for adolescents. Will a video game that promotes collectivist values make the player more inclined to this type of behaviours?

In terms of limitations, we could highlight the nature and design of the questionnaire. In addition to some items being not entirely clear, the use of Likert-type scales can affect the effect of social desirability. It is possible that some participants answered what they thought "they should answer" following the rules and assumptions of the social group to which they belong, instead of answering what they really thought or did, regardless of whether it is socially acceptable by peers. It is known that adolescence is a period in which personality takes shape and that peers play an important role in its development, so peer pressure may have had a negative effect on respondents' honesty.

If we look at possible future research, this is a poorly researched field so there is still a great deal of issues to investigate. We could classify video games depending on the values they tend to transmit. Thus, violent video games (encompassing action, adventure, strategy, or role-playing genres) would transmit markedly individualistic values, whereas simulators (sports, musical, social genres) would transmit markedly collectivist values. Undoubtedly, delving into this field, in order to understand and be able to use video games and their values as an education tool, can be really interesting given the current the importance and relevance of this medium of communication among teenagers. As Lacasa (2011) points out, "in a society that wants to receive and produce messages, teaching students to express themselves [...] can contribute to the creation of innovative educational scenarios related to new literacy forms" (p. 54).

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Annex 1

We are interested in knowing your video games consumption habits. When we talk about video games, we include console and computer types. Carefully read the statements in the questionnaire. Mark with a pen the number of your response.

We highly appreciate your honesty. There is no best or worst answers. We only want you to answer about your habits with regards to video games. If you have any questions, raise your hand and the teacher will assist you. Thank you very much for your collaboration.

		Totally disagree	Fairly disagree	Neither agree nor disagree	Fairly agree	Totally Agree
1.	I like to play video games.	1	2	3	4	5
2.	I usually play video games.	1	2	3	4	5
3.	I've played many video games.	1	2	3	4	5
4.	I know many video games	1	2	3	4	5
5.	I consider myself a good video game player.	1	2	3	4	5
6.	Video games seem fun.	1	2	3	4	5
7.	When I play video games time flies	1	2	3	4	5
8.	I dedicate more time to video games than to play with my friends	1	2	3	4	5
9.	I spend more time playing video games than sports	1	2	3	4	5
10.	I go to bed late and I get up early to keep playing.	1	2	3	4	5
11.	I dedicate more time to video games than to be with my family.	1	2	3	4	5
12.	I look for information about video games in magazines, TV or the Internet.	1	2	3	4	5
13.	I like to compete in video games and be the best.	1	2	3	4	5
14.	I save money to spend it on video games.	1	2	3	4	5
15.	I talk to my friends about video games.	1	2	3	4	5
16.	Whenever I see a video game store I go inside	1	2	3	4	5

17.	Before doing homework I play video games.	1	2	3	4	5
18.	I dedicate more time to video games than to do homework.	1	2	3	4	5
19.	I forgetting important things while I play video games (e.g. like doing homework)	1	2	3	4	5

Age:_____ boy/girl:_____

Answer the following questions with the option closest to reality:

20.	I play video games since:	Never	Months	A year	2 or 3 years	More than 4 years
21.	I dedicated to video games:	Nothing	Less than 1 hour a day	1 to 2 hours a day	2 to 3 hours a day	More than 3 hours a day
22.	Number of video games that I know:	0	1 or 2	Up to 10	10 to 20	More than 20
23.	Number of video games I've played:	0	1 or 2	Up to 10	10 to 20	More than 20
24.	Frequency I play video games:	Never	Once a month	Weekends	Three or four days	Every day
25.	What is your favourite game?					

Annex 2

Self-direction	
1. Freedom - *Freedom of action and thought*	
2. Creativity - *Uniqueness, imagination*	
3. Independent - *Self-dependant, self-sufficient*	

4. Choosing own goals	
5. Curious - *Interested in everything, explorer*	
6. Self-respect - *Belief in one's worth*	
Stimulation	
7. Exciting life - *Stimulating experiences*	
8. Varied life - *Full of challenges, novelty and change*	
9. Daring	
Hedonism	
10. Pleasure- *Gratification of wishes*	
11. Enjoying life	
Achievement	
12. Ambitious	
13. Influential- *Impact on others*	
14. Capable- *Competent, effective, efficient*	
15. Successful- *reaching one's goals*	
16. Intelligent	
Power	
17. Social power - *Control over the rest, domination*	
18. Wealth - *Material possessions, money*	
19. Authority - *The right to command and give orders*	
20. Preservation of one's public image	
21. Social recognition - *Respect, approval of others*	

Security	
22. National security - *Protection of one's nation against enemies*	
23. Reciprocation of favours - *Revocation of debt*	
24. Family security	
25. Sense of belonging - *Feeling others care about oneself*	
26. Social order - *Stability of society*	
27. Healthy - *Not physically or mentally ill*	
28. Clean	
Conformity	
29. Obedient	
30. Self-discipline - *resistance to temptation*	
31. Politeness, good education -	
32. Honouring parents and elders	
Tradition	
33. Respect for tradition	
34. Devout - *to faith and religious beliefs*	
35. Accepting one's life portion - *Surrendering to life circumstances*	
36. Humble	
37. Moderate - *Avoiding extreme forms of thought and action*	
Benevolence	
38. Helpful - *Working for the welfare of others*	
39. Responsible	

40. Forgiving - *Willing to forgive others*	
41. Honest	
42. Loyal - *to friends, the group*	
43. Mature love - *Deep emotional and spiritual intimacy*	
44. True friendship - *close and helpful friends*	
Universalism	
45. Equality - *of opportunities for all*	
46. Unity with nature - *Fitting in nature*	
47. Wisdom- *Mature understanding of life*	
48. World of beauty - *Beauty in nature and art*	
49. Social justice - *Concerned about the weak, correcting injustices*	
50. Broadminded - *Tolerant of different ideas and beliefs*	
51. Protecting the environment	
52. World at peace- *Free of wars and conflicts*	