Video game usage influence on adolescents' social skills

Influencia del uso de videojuegos en las habilidades sociales de los adolescentes

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Abstract

Video games, deeply rooted in nowadays' society, constitute a key element to understand the implications that their use has on the social and personal relationships of adolescents. The aim of this research is to determine the link between video games use and social skills in the adolescent population. The study was developed following a quantitative perspective, with a non-experimental, cross-sectional, descriptive and multifactorial design. An *ad hoc* questionnaire with general items on preference and frequency of video game use and a social skills questionnaire were used. Data analysis was performed using the IBM SPSS v.22 statistical package The sample consisted of 708 Galician adolescents aged between 12 and 18 years (M = 13.92; SD = 1.71). Results show that a 31.4% of adolescents see video games as their first leisure choice, with the male gender being the one that plays the most

through cell phones, Tablets or consoles connected to the television. In addition, Massively Multiplayer Online games are the most played type of games, with the female population preferring *Among Us*, whereas the male population shows preference for *Fortnite*. Finally, a slight relationship has been shown between the use of video games and worse social skills. Not using video games improves both assertiveness and problem-solving skills during adolescence. On the other hand, no statistically significant relationship was found between the use of video games and communication skills. In conclusion, the use of this leisure activity implies certain negative consequences in the social sphere, resulting in slightly poorer social skills, with problem-solving skills being the most affected area.

Keywords: Videogames, Social skills, Adolescence, Gender, Quantitative research.

Resumen

Los videojuegos, enraizados profundamente en la sociedad actual, constituyen un elemento clave para abordar las implicaciones que conlleva su uso en las relaciones personales y sociales de los adolescentes. El objetivo de la presente investigación es determinar la asociación que existe entre el uso de videojuegos y las habilidades sociales en la población adolescente. El estudio fue desarrollado siguiendo un enfoque cuantitativo, con un diseño no experimental transversal descriptivo y multifactorial. Los instrumentos utilizados fueron un cuestionario *ad hoc* de preguntas generales sobre la preferencia y frecuencia en el uso de videojuegos y un cuestionario de habilidades sociales. Para el procesamiento de la información se utilizó el paquete estadístico SPSS V.22. La muestra estuvo conformada por un total de 708 adolescentes gallegos de entre 12 y 18 años (M = 13.92; DT = 1.71). Los resultados muestran que un 31.4% de los jóvenes tiene los videojuegos como principal opción de ocio, con un mayor uso de estos por parte del género masculino utilizando el móvil, Tablet o consola conectada a la televisión como plataforma de preferencia. Además, el tipo de videojuego más utilizado son los juegos multijugador con predilección por *Among Us* por parte del género femenino y *Fortnite* por parte del masculino. Finalmente, se ha evidenciado que existe una relación entre el uso de videojuegos y unas peores habilidades sociales. No hacer uso de videojuegos mejora la asertividad y las habilidades en la resolución de conflictos en edad adolescente. Asimismo, no se alcanzan diferencias significativas entre el uso de videojuegos y las habilidades comunicativas. En conclusión, el uso de esta forma de ocio parece llevar aparejadas ciertas consecuencias negativas en la esfera social, traducidas en una merma de las habilidades sociales de sus participantes, siendo la capacidad de resolución de conflictos el área más afectada.

Palabras Clave: Videojuegos, Habilidades Sociales, Adolescencia, Género, Metodología Cuantitativa.

Introduction

Human beings are inherently social creatures; both survival and the experience of a meaningful life depend on the presence of others. Social skills are therefore essential, as they enable individuals to establish and maintain effective interpersonal relationships (Betina & Contini, 2011; Flores-Mamani et al., 2016), regardless of the intent—whether to trade, form friendships, or express needs (Dongil-Collado & Cano-Vindel, 2014). Defining the construct of social skills is a complex task, as is often the case within the social sciences. However, in this study, the concept is approached from two premises: first, social skills encompass both behavioral and cognitive dimensions; second, their purpose is emphasized: "they are cognitive or behavioral routines that allow us to maintain healthy relationships with others" (Oliva et al., 2011, p. 176). According to these authors, social skills comprise communication abilities, assertiveness, and conflict resolution skills.

Most research on social skills links them to desirable outcomes, such as improved academic performance (Betina, 2012; Caldarella et al., 2017; Zorza et al., 2013), enhanced quality of life (Leme et al., 2015; Salavera et al., 2020), or positive romantic relationships (Zavala et al., 2017). Notably, several studies suggest that females tend to exhibit higher levels of social skills (Maleki et al., 2019; Morales et al., 2013; Reyna & Brussino, 2015).

Today, the use of video games continues to rise: in Spain, there are approximately fifteen million players, with around eleven million engaging weekly, spending an average of about seven hours per week (Asociación Española de Videojuegos, 2019). Among adolescents, nearly seven out of ten report regular use, with the typical gamer profile being predominantly male. Nonetheless, gender distribution has become more balanced in recent years, and the frequency of use appears to decline with age (Asociación Española de Videojuegos, 2019).

Although multiple definitions of video games exist (Arjoranta, 2019), to avoid ambiguity, this study adopts the definition proposed by Esposito (2005, p. 2): "a game played through an audiovisual device that may be based on a storyline." The main challenge, however, lies in establishing a

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comprehensive and precise classification system for video games. While the current regulatory framework (Pan European Game Information - PEGI, 2003) provides guidance on recommended age and content, it does not address key elements such as theme—referring to the narrative topics explored in games—or mechanics, defined as the tools and systems that allow players to progress (Fabricatore, 2007). In many cases, classification proves difficult, as games often integrate multiple mechanics without any one predominating (Pérez, 2011). Consequently, this study adopts the classification proposed by Fritts (n.d.), which categorizes video games into action, adventure, action-adventure, role-playing games (RPGs), simulators, strategy, casual games, and massively multiplayer online games (MMOs).

Numerous studies suggest a relationship between video game use and diminished social skills. Männikkö et al. (2014) and Campit (2015) report a negative correlation between video game use and social skills. Similarly, Yousef et al. (2014) found a positive association between video game use and social problems, while Griffiths (2010) linked high gaming frequency to increased social anxiety. Research by Kowert et al. (2014a), De Pasquale et al. (2020), and Fumero et al. (2020) indicates that higher levels of online gaming correlate with poorer social relationships. You et al. (2014) observed that exposure to violent video games reduces prosocial behavior by impairing both empathy and behavioral regulation. Furthermore, Zamani et al. (2010) and Männikkö et al. (2020) highlight that problematic video game use is associated with lower social competence and deteriorated interpersonal relationships.

However, other studies have found no significant link between video game use and social skills (Blinka & Mikuška, 2014; Kowert, 2013; Kowert et al., 2014b; Loton, 2007; Mamani & Yupanqui, 2018). In fact, some research posits that appropriate use of video games may provide adolescents with a safe environment conducive to the development of social skills (Alfageme & Sánchez, 2002; Eguia et al., 2013; Kovess-Masfety et al., 2016; Thirunarayanan & Vilchez, 2012). Carras (2015) even argues that online games can serve as effective tools for acquiring social competencies that may later be transferred and applied in real-life settings.

Thus, considering that the purpose of this study is to determine whether

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an influential relationship exists between video game use and social skills in adolescents, the following hypotheses are proposed: H1: adolescents who identify video games as their primary leisure activity will obtain lower scores in social skills; H2: those who report a longer history of video game use will display reduced levels of social skills; H3: an inverse relationship will be observed between the amount of time spent playing video games during the school week and social skill levels; and H4: the number of hours dedicated to video game use over the weekend will likewise be negatively associated with social skills scores.

Method

Design

This study follows a quantitative, non-experimental, ex post facto design, as it analyzes a phenomenon that has already occurred in a natural setting: the use of video games. Participants were informed that the research focused on the world of video games from the perspective of adolescents, and they were asked to complete a brief questionnaire.

Sample

The participants in this study were selected through a non-probabilistic, purposive sampling method. The final sample consisted of 708 students (see Table I), with the following characteristics:

- Students enrolled in schools offering Compulsory Secondary Education (Educación Secundaria Obligatoria, ESO) and Baccalaureate (Bachillerato) under the authority of the Department of Culture, Education and University Planning of the Xunta de Galicia.
- Participants enrolled in any year of ESO or Bachillerato.
- Adolescents aged between 12 and 18 years, inclusive.
- Data collection occurred both in person at the students' schools under the supervision of the research team, and online via a digital

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questionnaire.

- The sample size was heavily influenced by a double layer of voluntariness: first, at the institutional level (schools and/or teachers), and second, at the individual level (students' personal willingness to participate).

TABLE I. Sociodemographic characteristics of the sample

***N* = 708 participants**	***%***	***n***	***M*(SD)**
Sex			
Women	51.3	363	
Men	48.7	345	
Age			13.92 (1.71)
12-13 years	26.7	189	
14-15 years	54.1	383	
16-18 years	19.2	136	
Main Leisure Activity			
Video games	31.4	222	
Other activities	68.6	486	
Years Playing Video Games			4.96 (3.57)
0 years	17.4	123	
1-3 years	18.1	128	
4-6 years	30.4	215	
7-9 years	22.7	161	
More than 9 years	11.4	81	
Weekly Hours of Gameplay (min. 0; max. 40)			5.76 (7.75)
0 hours	25.7	182	
1-3 hours	29.4	208	
4-6 hours	15.4	109	
6-9 hours	8.5	60	
More than 9 hours	21	149	
Weekend Hours of Gameplay (min. 0; max. 25)			4.99 (5.33)

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0 hours	18.9	134	
1-3 hours	32.2	228	
4-6 hours	22.5	159	
6-9 hours	8.1	57	
More than 9 hours	18.4	130	
Preferred Gaming Platform			
TV-connected	28	198	
Handheld console	5.5	39	
Computer	17.8	126	
Mobile pone or tablet	31.4	222	
Does not play	17.4	123	
Preferred Type of Game			
Action-adventure	16.7	118	
RPG / Strategy / Casual	4.1	29	
Simulators	11.4	81	
MMOs (Massively Multiplayer Online)	41.9	297	
Not specified	8.5	60	
Does not play	17.4	123	
Most Played Video Game			
Among Us	15.5	110	
Fortnite	15	106	
FIFA	4.9	35	
Several titles simultaneously	47.2	334	
None	17.4	123	

Instruments

Two questionnaires were used to collect information:

- *Ad hoc* questionnaire: Developed to gather sociodemographic data of

the sample. This set of items included standard classification questions such as age, gender, or academic year, as well as others related to video game use, such as favorite game type or weekly hours dedicated to video gaming.

- Social Skills Questionnaire by Oliva et al. (2011): This instrument directly measures social skills through three scales: communicative skills, assertiveness, and conflict resolution skills. The questionnaire consists of 12 items (acceptable reliability in this study: $\alpha = .696$; $\omega = .660$), divided into three subscales: communicative skills (5 items, $\alpha = .731$), assertiveness (3 items, $\alpha = .614$), and conflict resolution skills (4 items, $\alpha = .733$). Each item is rated on a 7-point Likert scale, ranging from completely false (1) to completely true (7).

Procedure

Fieldwork was conducted by contacting selected secondary education centers in Galicia, offering them the possibility to participate either by having the research team visit the center in person or through an online survey (Google Forms). Participant anonymity was ensured at all times. Prior to data collection, families were sent an informed consent form, so participation in the study was granted only after approval from both the legal guardians and the adolescents. Combining both options, a sample of a total of 708 adolescents was obtained.

Data Analysis

For data analysis, descriptive statistical analyses were first conducted for all variables of interest through cross-tabulation. Secondly, after verifying that the data met the assumptions for parametric statistical analyses, a multivariate analysis of variance (MANOVA) was performed. This type of analysis was chosen because it examines the simultaneous effect of multiple variables and is used to analyze the joint behavior of more than one dependent variable. Additionally, *Wilks' Lambda* statistic was selected due to its widespread use in multivariate analysis when the independent factor has more than two levels. This statistic compares the within-group deviations with the total deviations without distinguishing groups (significance level: $< .05$).

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Results

The descriptive analysis carried out through contingency tables for video game use by gender (Table II) shows that 49.9% of boys report video games as their primary leisure activity, while only 13.8% of girls consider them their first choice of entertainment. Likewise, when considering years of gameplay, higher percentages are observed in the zero to three years range among girls, whereas for longer periods of play (more than four years), the percentage is higher among boys. Regarding weekly and weekend hours of gameplay, females show higher percentages in the zero to three hours range, while males predominate from four or more hours of play. Similarly, the male adolescent population prefers the console connected to the TV as their gaming platform, whereas females prefer mobile phones or tablets. Finally, both males and females agree that multiplayer online games are their favorite genre, with Among Us being the most played among girls, and Fortnite among boys.

TABLE II. Descriptive analysis of video game use by gender

Main Leisure Activity				**Video Games**	**Other Activities**	**Total**
Female				13,8%$_a$	86,2%$_b$	100%
Male				49,9%$_a$	50,1%$_b$	100%
Years Playing Video Games	0 years	1-3 years	4-6 years	7-9 years	> 9 years	Total
Female	30,3%$_a$	20,7%$_a$	25,3%$_a$	18,5%$_a$	5,2%$_a$	100%
Male	3,8%$_b$	15,4%$_a$	35,7%$_b$	27,2%$_b$	18%$_b$	100%

Weekly Gaming Hours	0 hours	1-3 hours	4-6 hours	7-9 hours	> 9 hours	Total
Female	35,5%$_a$	33,1%$_a$	14,6%$_a$	6,3%$_a$	10,5%$_a$	100%
Male	15,4%$_b$	25,5%$_b$	16,2%$_a$	10,7%$_b$	32,2%$_b$	100%

Weekend Gaming Hours	0 hours	1-3 hours	4-6 hours	7-9 hours	> 9 hours	Total
Female	32%$_a$	36,1%$_a$	18,7%$_a$	5,5%$_a$	7,7%$_a$	100%
Male	5,2%$_b$	28,1%$_b$	26,4%$_b$	10,7%$_b$	29,6%$_b$	100%
Preferred Platform	TV Console	Handed Console	Computer	Mobile/ Tablet	Does not play	Total
Female	10,5%$_a$	5,2%$_a$	8%$_a$	45,7%$_a$	30,6%$_a$	100%
Male	46,4%$_b$	5,8%$_a$	28,1%$_b$	16,2%$_b$	3,5%$_b$	100%

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Preferred Game Type	Action-Adventure	Role-Strategy-Casual	Simulators	MMOs	Unspecified	Does not play	Total
Female	8,3%$_a$	3,3%$_a$	8,3%$_a$	39,7%$_a$	9,9 %$_a$	30,6%$_a$	100%
Male	25,5%$_b$	4,9%$_a$	14,8%$_b$	44,3%$_a$	7%$_a$	3,5%$_b$	100%

Most Played Game	*Among Us*	*Fortnite*	*FIFA*	Various/ Others/Unspecified	None	Total
Female	26,4%$_a$	6,3%$_a$	0,8%$_a$	35,8%$_a$	30,6%$_a$	100%
Male	4,1%$_b$	24,1%$_b$	9,3%$_b$	59,1%$_a$	3,5%$_a$	100%

Note. Each subscript letter denotes a subset of gender whose column proportions do not differ significantly from each other at the .05 level.

The scores obtained in social skills according to whether leisure time is primarily dedicated to video games (yes/no) are presented in Table III. Slightly higher communicative skills are observed when leisure time is spent on video games. In contrast, greater assertiveness and conflict resolution skills are found among those who do not dedicate their leisure time to video games.

TABLE III. Means, standard deviations, and multivariate analysis (MANOVA) of social skills according to leisure time dedicated to video games

SS	**YES**	**NO**	**Total**	***F***	***p***	η_p^2	***Power***
CS	19.77 (7.19)	19.74 (7.81)	19.75 (7.61)	.003	.956	.000	.050
AS	15.96 (3.70)	16.82 (3.21)	16.55 (3.39)	9.86	.002	.014	.880
CR	17.25 (5.37)	19.28 (5.07)	18.64 (5.25)	23.62	.000	.032	.998

Note. CS: Communicative Skills; AS: Assertiveness; CR: Conflict Resolution.

Likewise, the MANOVA results (Table III) indicated significant differences in the use of video games as a central leisure activity in relation to specific subscales of the social skills questionnaire [*Wilks' Lambda* = .97, F(3, 704) = 8.06, $p < .001$, $\eta^2p = .033$, power = .991]. Univariate analyses revealed significant differences in video game use for assertiveness [F(1, 706) = 9.86, $p < .01$, $\eta^2p = .014$, *power* = .880] and conflict resolution [F(1, 706) = 23.62, $p < .001$, $\eta^2p = .032$, *power* = .998], but not for communicative skills [F(1, 706) = .003, $p > .05$, $\eta^2p = .000$, *power* = .050]. Therefore, individuals who do not play video games in their leisure time demonstrated better assertiveness ($M = 16.82$, $SD = 3.21$) and conflict resolution skills ($M = 19.28$, $SD = 5.07$)

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than those who do play them (assertiveness: *M* = 15.96, *SD* = 3.70; conflict resolution: *M* = 17.25, *SD* = 5.37).

When considering the number of years participants have been playing video games, those who had been playing for four to six years showed higher communicative skills, while those who had never played video games showed better assertiveness and conflict resolution skills (Table IV).

TABLE IV. Means, standard deviations, and multivariate analysis (MANOVA) of social skills according to years spent playing video games

SS	0 years	1-3 years	4-6 years	7-9 years	+ 9 years	Total	*F*	*p*	η_p^2	*Power*
CS	20.31 (7.64)	19.45 (7.43)	20.47 (7.87)	18.64 (7.19)	19.67 (7.89)	19.75 (7.62)	1.56	.183	.009	.485
AS	17.18 (3.19)	16.76 (3.10)	16.57 (3.46)	16.20 (3.58)	15.93 (3.49)	16.55 (3.39)	2.38	.048	.013	.697
CR	20.02 (5.14)	18.47 (5.05)	18.37 (5.46)	18.30 (5.25)	18.28 (4.95)	18.65 (5.52)	2.59	.035	.015	.713

Note. CS: Communicative Skills; AS: Assertiveness; CR: Conflict Resolution.

Additionally, the MANOVA analyses revealed significant differences in social skills based on the number of years adolescents have been playing video games [*Wilks' Lambda* = .969, F(12, 71854.963) = 1.844, $p < .05$, η^2p = .010, power = .853]. Subsequent univariate analyses (Table IV) indicated significant differences only in the assertiveness [F(4, 703) = 2.389, $p < .05$, η^2p = .013, *power* = .697] and conflict resolution [F(4, 703) = 2.596, $p < .05$, η^2p = .015, *power* = .731] subscales of the social skills questionnaire. In contrast, the differences in the communicative skills scale [F(4, 703) = 1.562, $p > .05$, η^2p = .009, *power* = .485] were not statistically significant.

Post hoc tests showed that adolescents who have never played video games demonstrated significantly higher assertiveness (*M* = 17.18; *SD* = 5.08) than those who have been playing for seven to nine years (*M* = 16.20; *SD* = 3.58) and more than nine years (*M* = 15.93; *SD* = 3.49). Similarly, adolescents who have never played video games (*M* = 20.02; *SD* = 5.14) exhibited greater conflict resolution skills compared to those who have been playing for seven to nine years (*M* = 18.30; *SD* = 5.25) and more than nine years (*M* = 18.28; *SD* = 4.95).

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Taking into account the number of hours spent playing video games weekly (Table V), better communicative skills were found in adolescents who played between seven and nine hours per week, greater assertiveness in those who had never played video games, and higher conflict resolution skills in individuals who spent between one and three hours weekly playing video games.

TABLA V. Means, standard deviations, and multivariate analysis (MANOVA) of social skills according to the number of hours spent playing video games during the week

SS	0 hours	1-3 hours	4-6 hours	7-9 hours	+ 9 hours	Total	*F*	*P*	η_p^2	*Power*
CS	19.70 (7.47)	19.09 (7.57)	19.89 (7.86)	21.30 (8.04)	20.02 (7.50)	19.75 (7.62)	1.07	.368	.006	.340
AS	16.96 (3.11)	16.70 (3.37)	16.68 (3.16)	16.10 (3.61)	15.95 (3.77)	16.55 (3.39)	2.24	.063	.013	.659
CR	19.23 (5.03)	19.33 (5.45)	18.69 (4.94)	17.72 (5.25)	17.34 (5.23)	18.65 (5.25)	4.28	.002	.024	.929

Note. CS: Communicative Skills; AS: Assertiveness; CR: Conflict Resolution.

Similarly, the number of hours spent playing video games during the week showed significant differences in adolescents' social skills [*Wilks' Lambda* = .968, F(3, 701) = 1.935, $p < .05$, $\eta^2p = .011$, *power* = .873]. The subsequent univariate analyses (Table V) revealed that significant differences emerged exclusively in the conflict resolution subscale of the social skills questionnaire [F(4, 703) = 4.283, $p < .005$, $\eta^2p = .024$, *power* = .929]. For the remaining two subscales, the results were not statistically significant: communicative skills [F(4, 703) = 1.074, $p > .05$, $\eta^2p = .006$, *power* = .340], and assertiveness [F(4, 703) = 2.247, $p > .05$, $\eta^2p = .013$, *power* = .659]. Post hoc tests showed that adolescents who reported playing video games for more than 9 hours during the week ($M = 17.34$; $SD = 5.23$) had lower conflict resolution skills compared to those who never played video games ($M = 19.23$; $SD = 5.03$), and those who played between 1 and 3 hours weekly ($M = 19.33$; $SD = 5.45$).

Finally, regarding the number of hours spent playing video games during the weekend, better communicative skills were found in adolescents who played between 7 and 9 hours, whereas higher assertiveness and conflict

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resolution skills were observed among those who never played video games on weekends (Table VI). Accordingly, hours of video game use during the weekend were found to be significant for adolescents' social skills [Wilks' Lambda = .971, F(3, 701) = 1.917, $p < .05$, $\eta^2p = .012$, *power* = .870]. The univariate analyses (Table VI) revealed no statistically significant differences for the communicative skills subscale [F(4, 703) = 1.596, $p > .05$, $\eta^2p = .009$, *power* = .494] nor for assertiveness [F(4, 703) = 1.272, $p > .05$, $\eta^2p = .007$, *power* = .400]. However, significant differences were found for the conflict resolution subscale [F(4, 703) = 3.438, $p < .05$, $\eta^2p = .019$, *power* = .857]. *Post hoc* comparisons showed that adolescents who never played video games during the weekend ($M = 19.78$; $SD = 5.00$) demonstrated greater conflict resolution abilities compared to those who played between 4 and 6 hours ($M = 17.88$; $SD = 5.07$) and more than 9 hours ($M = 17.85$; $SD = 5.41$).

TABLA VI. Means, standard deviations, and multivariate analysis (MANOVA) of social skills according to the number of hours spent playing video games on weekends

SS	0 hours	1-3 hours	4-6 hours	7-9 hours	+ 9 hours	Total	*F*	*p*	η_p^2	*Power*
CS	20.48 (7.39)	19.06 (7.67)	19.33 (7.62)	21.39 (7.30)	20.02 (7.81)	19.75 (7.62)	1.59	.412	.009	.494
AS	17.01 (3.19)	16.64 (3.52)	16.17 (3.41)	16.67 (2.77)	16.35 (3.59)	16.55 (3.39)	1.27	.631	.007	.400
CR	19.78 (5.00)	18.85 (5.42)	17.88 (5.07)	19.16 (4.78)	17.85 (5.41)	18.65 (5.52)	3.43	.026	.019	.857

Note. CS: Communicative Skills; AS: Assertiveness; CR: Conflict Resolution.

Discussion and Conclusions

The inappropriate or excessive use of video games is related to various problems in social skills, especially during adolescence. In fact, it has become a subject of emerging social and clinical concern, since there is evidence demonstrating a direct relationship between excessive video game use and an increase in difficulties with individuals' social skills. Thus, the aim of this study was to determine the association between video game use and social

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skills in the adolescent population.

The results obtained appear to follow the expected direction according to the state of the art derived from the reviewed literature. On one hand, according to sociodemographic and descriptive data, it is observed that the typical adolescent does not have video games as their main leisure option (more prevalent among males), has been playing between four and six years (females: zero to three years; males: more than three years), and dedicates between one and three hours to this leisure activity both during the school week and on weekends (females: zero to three hours; males: more than three hours). Their preferred platform is the mobile phone or tablet for females, whereas for males it is the console connected to the television. Finally, for both genders, the favorite type of game is the online multiplayer (MMO), while Among Us (females) and Fortnite (males) are the most selected titles.

On the other hand, regarding the first hypothesis—which posits that those adolescents who have video games as their primary leisure activity will present lower scores on the social skills questionnaire—it is almost entirely confirmed. The data indicate that those adolescents who do not consider video games their main leisure activity show better levels of assertiveness and conflict resolution. However, although not statistically significant, descriptively higher communicative skills were observed in those who spend their leisure time playing video games. These results align with studies by Alave and Pampa (2018), Challco and Guzmán (2018), and Gallego-Domínguez and Marcelo-Martínez (2016), who consider that greater dependence on video games during adolescence leads to poorer social skills in this period.

The second hypothesis states that those adolescents with a longer history of video game use will obtain lower scores on the social skills scale, and this is also almost fully confirmed. In this case, the group of adolescents who never play video games present higher scores in assertiveness and conflict resolution scales than those who report playing between seven and nine years, or more than nine years. Additionally, descriptive data reveal better communicative skills in adolescents who have been playing video games between four and six years.

Analyzing the third hypothesis, which proposes an inverse relationship between the number of weekly hours dedicated to video games and social skills scores, it is partially confirmed again. Thus, the group of adolescents who spend more than nine hours per week playing video games exhibit lower conflict resolution ability compared to those who either never play video games or play between one and three hours per week. Moreover, better

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assertiveness is observed in adolescents who do not play video games during the week, and higher communicative skills are found in those who play video games between seven and nine hours per week. Given that social phenomena are clearly multifactorial, a plausible reason behind this finding might be the actual amount of time dedicated, as spending excessive time on video games—especially during adolescence—may hinder the development of good social skills (Griffiths, 2010).

Finally, the fourth hypothesis, which posits an inverse relationship between the number of hours played during the weekend and social skills scores, is partially confirmed. In this case, the group of adolescents who never play video games obtain better scores in the conflict resolution scale than those who report playing between four and six hours on weekends. Descriptively, adolescents who play between seven and nine hours on weekends show better communicative skills, while those who do not play on weekends score higher on assertiveness. Studies such as those by Medrano (2018) and Voltes (2018) argue that excessive video game use limits the optimal development of social interaction.

Taken together, these findings align with several studies that show a negative relationship between video game use and social skill levels (Campit, 2015; Männikkö et al., 2014), although, complementarily, they contradict other research suggesting that video games are either harmless entertainment (Kowert et al., 2014b; Mamani and Yupanqui, 2018) or may even have positive consequences (Kovess-Masfety et al., 2016; Thirunarayanan and Vilchez, 2012). A very important nuance in these latter studies is their assertion that proper use of video games could lead to positive outcomes. In other words, it is not video games themselves, but rather good usage of them that may allow for positive effects.

It is also noteworthy that the lowest conflict resolution scores were obtained by the group of adolescents who most identify video games as their first leisure option, have played for the longest time, and dedicate the most hours to them during both the school week and weekends. This may be because the mechanisms required to progress in video games are more often oriented toward competition—whether against other players or the game's AI—and confrontation, whereas cooperation is the cornerstone of good social adjustment. Adolescents who play more video games might be primed to evoke more competitive rather than cooperative responses, a strategy frequently dysfunctional in social interaction contexts.

The present study has some limitations that must be considered

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when interpreting and generalizing the results. Most relate to the sample: it is not as large or as diverse as would be desirable. The focus was on the Galician adolescent population, but random sampling was not possible, and convenience sampling was used instead. Moreover, participants were only aged 12 to 18 and attending compulsory secondary education (ESO) or high school (Bachillerato), with no representation of youth studying vocational training or outside the educational environment. Future research would benefit from increasing both the sample size and diversity. It would also be valuable to explore questions not addressed here, such as whether young people play alone or accompanied, as this might be relevant for explaining the effects of video game use on social skills. Another interesting aspect would be applying the data collection tool used in this study to other Autonomous Communities in Spain to allow comparisons and broaden understanding of the results.

Focusing on the educational context, it is essential to develop pedagogical strategies that promote proper management of video game use by adolescents. Such strategies could include classroom activities fostering critical thinking about video games and their content. Students could analyze the representation of social relationships and conflicts in video games and engage in discussions about gender stereotypes present in virtual environments.

Additionally, establishing safe spaces in schools would allow adolescents to openly discuss their experiences with video games, contributing to a deeper understanding of individual and collective dynamics surrounding video game use. This would enable more effective adaptation of educational strategies.

Furthermore, the natural interest of young people in video games can be harnessed to integrate these games constructively and didactically into the school curriculum. This could involve creating educational projects linking video game themes with established learning objectives, fostering a more interactive and relevant pedagogical approach.

Finally, providing resources and guidance to parents and caregivers on how to supervise and support their children's video game use positively and constructively is essential. Implementing these and other measures aims to create an educational environment that leverages the positive aspects of video games while mitigating their potential negative impact on the development of a vulnerable population such as adolescents.

Given the entrenched presence and ongoing expansion of the video game world, it is crucial to comprehensively understand its implications in order to address its use in an informed and responsible manner.

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