

Maja Ružić-Baf, Mirjana Radetić-Paić,  
Andrea Debeljuh  
Croatia

## Differences in Self-Evaluation of Female and Male Students Concerning the Motives for Playing Online Video Games

### Abstract

The paper aims at determining the differences in self-evaluation of the motives for playing online video games among university students. The presence of differences between the two genders was built on the assumption that in our cultural environment various gender roles, such as rebellion, non-conformity and refusal to comply with norms, are more typical of the male gender role, and also when it comes to playing online video games. The results of the survey have shown that there are differences between female and male students concerning the motives for playing online video games, which suggests the need to record these indicators, in particular the negative ones, within the university environment.

**Keywords:** *online video games, students, gender, motive*

### Introduction

The Sexual Selection Theory (Pawlowski, Atwal and Dunbar, 2008) predicts that males will tend to behave in ways that are more risky than females. Numerous studies have noted that young males are more inclined to behave in more risky ways than females, in particular with regard to conflict (Campbell, 1999; Daly and Wilson, 1988; Wilson and Daly, 1993), drug-taking (Tyler and Lichtenstein, 1997) and outdoor activities (Howland et al., 1996, Wilson et al., 1996). Psychological theories explain this in the way that females find risky situations more stressful than males do (Kerr and Vlaminkx, 1997).

The popularity of playing online video games among the student population has increased enormously.

In relation to gender differences in playing online video, men still prevail (in their studies Chou and Tsai (2007) came to the conclusion that, with regard to gender and playing time, males spent more time playing). In relation to game type preference (Homer, Hayward, Fry, Plass, 2012) and their gender, preadolescents elect different types of games. Among male preadolescents there is an increased likelihood of electing First Person Shooter games, Sports Games and Fighting Games, while female preadolescents prefer Virtual World and Virtual Life Games. Nevertheless, it is worth noting that the results of the study confirm that many girls also favour stereotypically male games with a third of female preadolescents preferring playing Fighting Games. The percentage of girls who prefer playing Fighting Games is almost equal to the percentage of girls who prefer playing Puzzle Games. And while girls are more interested in playing Party Games, boys have little interest in playing such games. In recent years more and more women have actively involved in playing online video games and have often become active clan members together with men.

The results of a survey (Bilić, Ljubin and Golob, 2011) comprising a sample of 327 respondents attending grammar and vocational schools in Zagreb and its surroundings have shown that the majority of the respondents were classified as non-pathological video gamers. In vocational schools, the male gender and low self-esteem were associated with an increased tendency to video game addiction. Curiosity, role playing, belonging, obligation and reward are among the indicators which could be used to predict MMORPG addiction among students (Hsu, Wen and Wu, 2009).

Bourgonjon, Valcke, Soetaerz, Schellens (2010) reported that students were interested in the introduction of videogames in the classroom due to their usefulness, ease of use, learning opportunities, and personal experience with video games. Numerous game players feel attached to a team (community) and find new friends, which often results in significant and long-lasting friendships (Krotski, 2004).

Considering the increasing popularity of online video gaming within an older population, Olson (2010) came to the conclusion that the majority of adults who are less experienced in online video game play consider video game play as an isolating (anti-social) activity.

In the context of the effects of video game playing, the question of motivation cannot be overlooked. What is it that motivates a young person to play video games? The answer is quite important as video games motivate a remarkable amount of goal-directed behaviour. Numerous studies have been undertaken in this context,

e.g., Przybylski, Rigby and Ryan (2010) presented a survey that evaluated sources of player aggression as a consequence of video game engagement. Their interest was in the relations between game experiences that are psychologically need-thwarting and postgame aggressive feelings. They then shifted focus and explored how player backgrounds shape game engagement, contrasting players who are playing because they want to and those who feel compelled or pressurized to play or are playing because they must. By applying the SDT-based model they found empirical support for the notion that video games are experienced as ends in themselves precisely because they tap into fundamental need-based motivational processes. They found also that the influences of video games on players are not uniform.

On the other hand, when the self-esteem or the self-concept of the students is considered, self-esteem results from its influence on the overall behaviour and experience of a young person. Self-esteem is a tremendously important factor of psychic and social functioning of a young person, particularly in the light of its influence on the behavioural direction (Lacković-Grgin, 1994). Indeed, it is well known that a positive or negative self-perception in the broadest sense affects the formation of a successful or unsuccessful identity and, accordingly, it also affects everyday functioning, contacts with others, problem-solving ways, ways to satisfy personal and others' demands, achieving of happiness, etc. (Berger, 1979; Glasser, 1990, Koller-Trbović, 1995).

## **Research Problem**

The objective of this study was to determine the differences in self-evaluation of the motives for playing online video games between female and male students.

A hypothesis was proposed expecting statistically significant differences between female and male students in the self-evaluation of the motives for online video gaming.

The hypothesis was grounded on the presumptions that in our cultural environment various gender roles, such as rebellion, non-conformity and refusal to comply with norms, are more typical of the male gender role (Glavina-Kozić, 2002). From another standpoint, the greater aggressiveness of young men is to a certain extent biologically determined by a higher amount of testosterone and by socialization factors, such as competition and need to dominate within a group of male peers. According to the recent report of the Entertainment Software Association (ESA) for 2012, 53% of online video gamers are male with 47% of online video gamers being female.

The results of a similar study (Raboteg-Šarić and Brajša-Žganec, 2001) suggest that boys display a statistically more problem behaviour in elementary school, they consume more alcohol and their school performance is poorer. Evidence has also shown that externalized behavioural disorders are more frequent among boys at an early age, with the difference diminishing as they are growing up (Koller-Trbović, 2001).

## **Research Methodology**

The sample comprised a total of 136 respondents, chosen at random among the students in Pula and Rijeka, out of whom 61 were female students and 75 male students.

Variables were assessed by the students on the basis of a 5-point Likert-type scale (1- it never applies to me, 2-it rarely applies to me, 3-it sometimes applies to me, 4-it often applies to me, 5-it always applies to me). The questionnaire was created for the purpose of this study and the following items were assessed:

1. I play online video games to make new acquaintances (acquaintances)
2. I play online video games because I cannot stand even one day without playing (without playing)
3. I sometimes play online video games in class (classes)
4. Because an online video game has to be played at a definite time I am absent from classes (absence)
5. Playing online video games is a means of escape from the real world (escape)
6. Upon request of the team to play a video game, I cancel all my appointments (cancellation)
7. Playing online video games makes me happy (happy)
8. Playing online video games makes me feel safe (safe)
9. Playing online video games makes an important person of me (important)
10. While playing online video games I feel powerful (powerful)
11. While playing online video games I feel an equal clan member (equal)
12. When I am not playing online video games I feel anxious (anxious)
13. When I am not playing online video games I feel depressed (depressed)
14. Playing online video games disturbs my sleep (insomnia)
15. I rarely socialize with my peers (socializing)
16. I find it easier to communicate with “online friends” (online friends)
17. I prefer spending my free time gaming than socializing with my peers (free time)

18. I often communicate about the way of playing outside gaming (communication outside)

19. I am afraid of becoming a video game addict (addict)

In order to determine differences in the variables of self-evaluation of the motives for playing online video games between the female and male students a discriminant analysis and a univariate analysis of variance were applied.

The questionnaire was created by researchers. The study was carried out in 2012. The survey was anonymous and the questionnaires were filled out by the respondents online.

## **Research Results**

In order to determine latent levels of differences between the female and male students, or to determine whether there are and, if so, what the differences between the observed groups are, a discriminant analysis was carried out. Within the framework of this survey, the latter analysis comprised the group of variables describing self-evaluation of motives for playing online video games. Considering the fact that the discriminant analysis comprised two groups of subjects, only one discriminant function was obtained. However, this function (Table 1) was statistically significant at the level of  $p=0.05$  and it discriminates the observed groups of respondents.

**Table 1.** Analysis of variance and characteristic values of discriminant functions

Function	Eigenvalue	Cumulative %	Canonical Correlation	Wilks' Lambda	Chi-square	df	Sig.
1	0.288	100	0.473	0.776	31.555	19	0.035

The analysis of discriminant coefficients of the obtained function, the correlation with the discriminant function (Table 2) and the position of centroids for the observed groups (Table 3), show that the male students group, unlike the female students, more often stated that they often communicated about the way of playing outside gaming, felt an equal clan member, playing made them happy, they found it easier to communicate with online friends, upon request of the team to play they would cancel all their appointments and they played online video games because they could not stand even one day without playing.

It can also be generally concluded on the grounds of the obtained indicators that most of the variables which could correspond to the students' pathological playing

of online video games contribute relatively well to the definition of the obtained discriminant function and that it can be considered as a multiple-risk factor,

**Table 2.** Discriminant coefficients and correlations with the discriminant function

	Standardized Canonical Discriminant Function Coefficients	Structure Matrix
Acquaintances	.158	.370
Without playing	.292	.410
Classes	.121	.168
Absence	-.377	.137
Escape	-.482	.249
Cancellation	.286	.435
Happy	.269	.506
Safe	-.084	.229
Important	.371	.274
Powerful	-.318	.299
Equal	.150	.508
Anxious	-.671	.115
Depressed	.772	.200
Insomnia	-.546	.099
Socializing	-.206	.065
Online friends	.601	.468
Free time	-.465	.192
Communication outside	.596	.656
Addict	.138	.404

**Table 3.** Functions at group centroids

	Function
F	-.591
M	.481

In order to provide better access to the existence of possible differences between the groups on manifest variables, Table 4 features data on arithmetic means, group standard deviations, F-test and significance (p). Manifest variables include: the ways of communication with “online” friends while the respondent is not playing

online games and refer to “live” communication; while playing online video games the respondent feels an equal clan member; playing online video games makes the respondent happy; the respondent finds it simpler (easier) to communicate with “online” friends and upon request of the team to play a video game the respondent cancels all the appointments. These variables are significant at the level of significance  $p < 0.01$

Variables referring to the respondents’ fear of becoming addicted to playing online video games, playing online video games to make new acquaintances and playing online video games because one cannot stand even one day without playing are significant at the level of significance  $p < 0.05$

**Table 4.** Univariate analysis of variance results

Variables	Arithmetic Means		Standard deviations		F	p
	Females	Males	Females	Males		
Acquaintances	1.21	1.55	.69	.95	5.289	.023**
Without playing	1.18	1.51	.53	.88	6.508	.012**
Classes	1.36	1.49	.73	.74	1.090	.298
Absence	1.08	1.15	.38	.48	.726	.396
Escape	1.30	1.52	.74	.92	2.390	.124
Cancellation	1.08	1.32	.33	.62	7.316	.008*
Happy	1.84	2.52	1.13	1.36	9.896	.002*
Safe	1.31	1.53	.85	.95	2.022	.157
Important	1.18	1.40	.72	.77	2.900	.091
Powerful	1.25	1.53	.77	.99	3.449	.065
Equal	1.10	1.59	.54	1.10	9.989	.002*
Anxious	1.08	1.13	.42	.41	.511	.476
Depressed	1.07	1.15	.31	.43	1.550	.215
Insomnia	1.25	1.32	.67	.72	.377	.540
Socializing	1.23	1.28	.74	.71	.164	.686
Online friends	1.23	1.61	.50	.93	8.452	.004*
Free time	1.25	1.40	.79	.72	1.421	.235
Communication outside	1.30	2.00	.76	1.16	16.630	.000*
Addict	1.10	1.45	.47	1.02	6.311	.013**

\* $p < 0.01$ , \*\* $p < 0.05$

## **Conclusions**

The obtained results confirm the constructed hypothesis expecting significant differences between female and male students in the self-evaluation of the motives for playing online video games. The results have shown that there are differences as the male group, unlike the female group, was more likely to express behaviours relating to pathological playing of video games, which was defined as a multiple-risk factor. This is further supported by survey results (Glavina-Kozić, 2002; Kerr and Vlaminkx, 1997) confirming that young males express behaviours that are more “typical” of the male gender role.

The applicability value of this paper is in the fact that it highlights a need to record such negative indicators within the university environment and the ways in which these are addressed. Even though video games can enhance wellness in the short term, games can exert a negative influence if these experiences undermine needs, prompting negative affect. The limitations of this survey are at the same time directions for future surveys which should seek answers to the question of how specific game features influence basic need satisfaction and how positive effect can be made in this context.

## **References**

- Berger, J. (1979). *Psihodijagnostika*. Nolit.
- Bilić, V., Ljubin Golub, T. (2011). Patološko igranje videoigara: uloga spola, samopoštovanja and edukacijske sredine, *Hrvatska revija za rehabilitacijska istraživanja* 2011, Vol 47, br. 2, str. 1–13.
- Bourgonjon, J., Valcke, M., Soetaert, R., De Wever, B., Schellens, T. (2011). *Computers & Education*. 57, 1434–1444.
- Campbell, A. (1999). Staying alive: Evolution, culture and women’s intrasexual aggression. *Behavioral and Brain Sciences*, 22, 203–267.
- Chou, C., Tsai, M. (2007). Gender differences in Taiwan high school student s computer game playing. *Computers in Human Behavior*, 23, 812–824
- Daly, M., Wilson, M. (1988). *Homicide*. Hawthorne, NY: Aldine de Gruyter.
- ESA (2010). Essential facts about the computer and video game industry. Retrieved 21.04.2011, from [http://www.theesa.com/facts/pdfs/ESA\\_Essential\\_Facts\\_2010.PDF](http://www.theesa.com/facts/pdfs/ESA_Essential_Facts_2010.PDF).
- Glasser, W. (1990). *Pozitivna ovisnost*. Edicija realitetne terapije. Br.4.



- Glavina-Kozić, E. (2002). Izostanci u osnovnoj školi. *Napredak*, 43(3), 291–306.
- Howland, J., Hingson, R., Mangione, T.W., and Bell, N. (1996). Why are most drowning victims men? Sex differences in aquatic skills behaviors. *American Journal of Public Health*, 86, 93–96.
- Homer, D.H., Hayward, E.O., Frye, J., Plass, J.I. (2012). Gender and player characteristics in video game play of preadolescents. *Computers in Human Behavior*, 28, 1782–1789.
- Hsu, S.H., Wen, M.H., Wu, M.C. (2009). Exploring user experiences as predictors of MMORPG addiction. *Computers & Education*; Nov2009, Vol. 53 Issue 3, p990–999.
- Kerr, J.H., Vlaminkx, J. (1997). Gender differences in the experience of risk. *Personality and Individual Differences*, 22, 293–295.
- Koller-Trbović, N. (1995). Razlike u samoprocjeni slike o sebi djece s aktivnim and djece s pasivnim oblicima poremećaja u ponašanju. *Kriminologija and socijalna integracija*, 3 (1), 71–76.
- Koller-Trbović, N. (2001). Prosudba rizika and potreba djece and mladeži s poremećajima u ponašanju u svrhu planiranja intervencija. U: Žižak, A., Koller-Trbović, N. and Lebedina-Manzoni, M., „*Od rizika do intervencije*“, pp. 37–69. Zagreb: Edukacijsko-rehabilitacijski fakultet Sveučilišta u Zagrebu.
- Krotski, A. (2004). Chicks and joysticks: an exploration of women and gaming. London: Entertainment and Lesiure Software Publishers Association.
- Lacković-Grgin, K. (1994). Samopoimanje mladih. Naklada Slap. Jastrebarsko.?
- Olson, C.K. (2010). Children's motivations for video game play in the context of normal development. *Review of General Psychology*, 14(2), 180–187. Web source: [http://www.ckolson.com/wp-content/uploads/Olson\\_uncorrected-proof\\_RevGenPsych.pdf](http://www.ckolson.com/wp-content/uploads/Olson_uncorrected-proof_RevGenPsych.pdf), 7.11.2013.
- Pawlowski, B., Atwal, R., Dunbar, R.I.M. (2008). Sex Differences in Everyday Risk-Taking Behavior in Humans. *Evolutionary Psychology*, 6 (1) 29–42.
- Przybylski, A.K., Rigby, S.C. and Ryan, R.M. (2010). A Motivational Model of Video Game Engagement. *Review of General Psychology*, Vol. 14, No. 2, 154–166
- Raboteg-Šarić, Z., Brajša-Žganec, A. (2001). Roditeljski odgojni postupci and problematično ponašanje djece u ranoj adolescenciji. U: Bašić, J.; Janković, J. (ur.). „*Rizični and zaštitni čimbenici u razvoju poremećaja u ponašanju djece and mladeži*“, str.155–170. Zagreb: Povjerenstvo Vlade Republike Hrvatske.
- Tyler, J., Lichtenstein, C. (1997). Risk, protective, AOD knowledge, attitude, and AOD behavior: Factors associated with characteristics of high-risk youth. *Evaluation and Program Planning*, 20, 27–45.

- Wilson, M., Daly, M. (1993). Lethal confrontational violence among young men. In N.J. Bell and R.W. Bell (Eds.) *Adolescent Risk-Taking* (pp. 84–106). Newbury Park (CA), Sage.
- Wilson, M., Daly, M., Gordon, S., and Pratt, A. (1996). Sex differences in valuations of the environment. *Population and Environment*, 18, 143–159.