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Research article

eSPORTS AS A NEW PLAYGROUND

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Abstract. *With the emergence of digital media, traditional sport got computer platforms as a new kind of gaming space. eSports, as a modern form of gaming, has become an inevitable part of the digital game culture. The aim of this research is to determine if there is a connection between playing eSports video games and sport knowledge, competition skills, social interaction, skill building for problem solving and pleasurable stimulation which leads to emotional well-being. The survey encompassed 256 respondents who filled out a questionnaire that provided answers to questions that enabled us to look at the attitudes of respondents who were tested in relation to the hypotheses set out in this paper. The research has shown that respondents believe that this type of game and the amateur competition has a positive impact on players and helps them advance their knowledge of sports, cognitive skills for competition and socialization, as well as helps them to feel good in the role of players.*

Key words: *eSports, skills, interaction, problem solving, well-being, correlation*

INTRODUCTION

The development of technology and the Internet has enabled the emergence of a new kind of game. Video games are increasingly replacing traditional games and have a direct impact on how internet users spend their free time (Baltezarević & Baltezarević, 2018a). The appearance of the Internet and the various forms of virtual networking has led to the creation of new social space and the formation of a new kind of playground, which moved from the real world into virtual space. A virtual game creates the ability to meet and connect players to social networks that come into play primarily for fun. The development of the video industry, which enables a diverse and constantly growing offer of video games,

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leads to more and better social connectivity in this alternative space (Klimmt & Hartmann, 2008; Hamilton et al., 2014).

New information technologies and new possibilities of contemporary media have allowed traditional sport to become a part of the virtual world. eSports is usually related to competitive (pros and amateur) video games that offer players the opportunity to play against each other, regardless of the extent to which the world's gamers find themselves in it.

eSports, as computer-supported games, reached 165 million enthusiasts, i.e., people who watch professional eSports content more than once a month in 2018 (Newzzo, 2018) and "in recent years, growth in gaming audience and player engagement has elevated eSports into mainstream culture as a legitimate professional sport with the massive global following" (The World of Games, 2018, 7). According to Statista (2017) the first ranked eSports video game "League of Legends" has 100 million "fans", i.e., number of players, "Call of Duty" has 28.1 million, "Hearthstone" has 23.9 million, "Dota 2" has 12.6 million and "World of Tanks" has 12.3 million players worldwide. These data clearly point to the massive extent of eSports' acceptance.

Seo Yuri (2013) pointed out that eSports, no matter that it is a leisure activity, helps develop different competencies such as social, educational, communication, decision-making, problem solving and many others. eSports, which can be characterized as competitive games, helps amateur groups of players to "through watching recorded sessions of pro matches to analyze moves and tactics" (Taylor, 2012, 236) and "to reconfiguring their own models of action" (Ibid, 237).

Players consider that eSports is no different from traditional sports based on the mental requirements (Himmelstein, Liu, & Shapiro, 2017) and that eSports has a positive influence on cognitive processes (Staiano & Calvert, 2011; Nuyens, Kuss, Lopez-Fernandez, & Griffiths, 2018).

The aim of this research is to determine if there is a relationship between playing eSports video games and sport knowledge, competition skills, social interaction, skill building for problem solving and pleasurable stimulation which leads to emotional well-being.

METHODS

Experimental design

For the purpose of this research a special questionnaire containing two parts was prepared. The first part relates to the socio-demographic data of the respondents (gender, age, education, as well as the question of whether they play video games belonging to eSports). In the second part of the questionnaire we examined the attitudes of the respondents regarding their relationship to eSports and its impact on improving various skills in players, interviewing them using the closed type questions, with offered responses on a five-tiered Likert type scale ranging from 1 "Strongly disagree" to 5 "Strongly agree". The questionnaire was electronically forwarded to a 320 electronic address. Out of a total of 308 questionnaires returned, 256 questionnaires were selected for further research , in which respondents confirm that they are playing eSports games. The research was carried out on the territory of the Republic of Serbia in the period from September to December 2018.

Statistical analysis

Data were analyzed using the SPSS Statistical Package version 20. We first checked the internal consistency (reliability) of the scale using Cronbach's Alpha coefficient, and

then we checked the normality of the distribution using the Kolmogorov-Smirnov test. Since the result showed a deviation from normal distribution we applied non-parametric techniques, i.e., a Chi-square test and Spearman's rank correlation coefficient. Demographic data of the respondents were processed using descriptive statistics.

RESULTS

Out of a total of 256 surveyed questionnaires, there were n=140 (54.7%) male and n=116 (45.3%) female respondents. The age structure of the sample shows that there were n=45 (17.6%) aged under 25; n=111 (43.4%) from 26 to 35 years and n=100 (39.1%) aged from 36 to 45. Hence, the most frequent respondents were aged 26-35 (Mode = 2).

The results of the descriptive statistics showed that n=118 (46.1%) have a high school education, n=126 (49.2%) with a university degree and n=12 (4.7%) with Mba/PhD. The most frequent respondents have a university degree (Mode = 2).

In the case of the question: How long did they play eSports video games? the results showed that only n=2 (0.8%) of the respondents played less than six months, n=8 (3.1%) of the respondents played 6 to 12 months, while n=249 (96.1) of the respondents were playing games for more than a year.

Based on the research aim we have defined a six-item scale whose internal reliability was measured using Cronbach's alpha. The value for the full scale is $\alpha = .798$, which indicates a high level of internal consistency (De Vellis, 2003).

Table 1 Scale Mean, Standard Deviation and Internal Reliability (Cronbach's α)

	Mean	Standard Deviation	Internal Reliability (Cronbach's α)
Playing eSports video games	3.95	.315	.787.
Sport Knowledge	3.57	.935	.755
Competition	3.44	1.050	.757
Social interaction	3.99	.840	.786
Pleasurable stimulation	3.43	1.104	.736
Skill Building for Problem solving	4.02	.749	.773

Table 1 shows that the scale is well-formed because the values of all the items are above 0.7 which is acceptable for psychometric surveys that measure the attitudes of the respondents (Nunnally, 1978).

Table 2 Tests of Normality

	Kolmogorov-Smirnov[a]		
	Statistic	df	Sig
Playing eSports video games	.358	256	.000
Sport Knowledge	.306	256	.000
Competition	.266	256	.000
Social interaction	.355	256	.000
Pleasurable stimulation	.281	256	.000
Skill Building for Problem solving	.345	256	.000

Results of the Kolmogorov-Smirnov test (Table 2) indicate that all the values are <0.05, i.e., that the scale has no normal distribution (Palant, 2009, 62).

The Chi-Square test showed that there is a statistically significant relationship between Playing eSports video games and the attitude of the respondents that playing games improves Sports Knowledge, $\chi 2$ (16, 256) = 55,593, p <0.01. Spearman's correlation of rank Rho = .274 shows that this is a weak positive correlation.

The Chi-Square test showed that there is a statistically significant relationship between Playing eSports video games and the attitude of the respondents that playing games improves Competition Skills, $\chi 2$ (16, 256) = 31.963, p <0.01. Spearman's correlation of rank Rho = .228 shows that it is a weak positive correlation.

The Chi-Square test showed that there is a statistically significant relationship between Playing eSports video games and the attitude of the respondents that playing games improves social interaction, χ^2 (16, 256) = 172, 067, p <0.01. Spearman's correlation of rank Rho = .539 shows a strong positive correlation.

The Chi-Square test showed that there is a statistically significant relationship between Playing eSports video games and the attitude of the respondents that playing games improves pleasurable stimulation, $\chi 2$ (16, 256) = 103.453, p <0.01. Spearman's correlation of rank Rho = .379 shows that this is a moderate positive correlation.

The Chi-Square test showed that there is a statistically significant relationship between Playing eSports video games and the attitude of the respondents that games improves Skill Building for Problem Solving, $\chi 2$ (16, 256) = 55.593, p <0.01. Spearman's correlation of rank Rho = .274 shows that this is a weak positive correlation.

From the research's results, it can be seen that the correlation analysis supported the theoretical views presented in this paper. eSports games are still a new form of play and many aspects of the impact of this kind of game on players are not followed by a broad set of existing research. Despite the limitation of this research, with respect to the number of respondents, we consider this work to be the starting point for further and deeper exploration of the impact of playing eSports video games on players.

DISCUSSION

There are several reasons, philosophical, sociological, and conventional, to be skeptical in considering computer games as a sport. In cybernetics terms simulated activities are not real, but virtual, and the term virtual has connotation of something being real in effect or real for all practical reasons, but not real in substance (Hemphill, 2005). Although the outcome-defining events of the sport occur within the confines of an electronic, computer-mediated environment, it does not in any way imply that eSports cannot be physically taxing for the players (Hamari & Sjöblom, 2017). It is also known that games have always been a companion of man. They are often the antipode of reality, and older than magic and ritual (Baltezarević & Baltezarević, 2018b, 139).

Hence, sports games running on media platforms, known as electronic sports, have caused much controversy in theoretical discussions, primarily on the theme of similarity to traditional sports. The authors in this paper do not deal with this type of theoretical discussions, but rather focus on how participation in video games defined as eSports affects players. "The fact is that the eSports activities are integrated with the media, but it is also true that modern media changed all areas of human activity. Alongside the real

world there is a parallel hybrid (virtual) reality. Due to the growing technical improvements that are available to humanity, we believe that the emergence of eSports was a natural evolutionary consequence. If our meetings with friends had been moved to the virtual world, the migration of games and sports was only a matter of time" (Baltezarević & Baltezarević, 2018b, 144).

The current literature, mentioned in this paper, suggested that amateur sports games supported by electronic media, better known as eSports, had a positive impact on improving various skills in players. The authors agreed to focus on examining the attitudes of the respondents on whether they think that playing these types of computer games helps to advance Sports Knowledge, Competitive Skills, Social Interaction, Skill Building for Problem Solving, and Provide Pleasurable Stimulation.

Research has shown that respondents believe that this type of games, even though seen as fun by players, have a positive influence on players. All five questions of interest set out in this paper have been confirmed.

According to obtained results, respondents considered that playing eSports video games improves Sports Knowledge. While playing eSports games and watching professional tournaments, enthusiasts observe movements, analyze tactics and thus improve their sports knowledge. This finding is in accordance to one of Taylor (2012) who stated that through watching recorded sessions of pro matches players (amateurs) can analyze moves and tactics and improve their knowledge about the rules of eSport tournaments, play, the requirements and practice of professional sports athletes. According to Wagner (2006), eSport is an area of sport activities in which people develop and train mental or physical abilities in the use of information and communication technologies.

The results also confirmed that playing eSports video games improves Competition Skills. eSports games are most often competition-oriented games that imply striving to win. Respondents consider that playing is contributing to the training and acquisition of knowledge that is being developed and promoted by Competition Skills, which is extremely important for players, as competition is the mechanism by which gamers can compare themselves to each other (Greenberg, Sherry, Lachlan, Lucas, & Holmstrom, 2010). According to Baltezarević & Baltezarević (2018a, 478) "the video game requires players to respect the rules set by designer games, to solve puzzles and achieve certain goals." Most video games provide participants with the ability to become winners, either by doing so by 'disabling' all enemies, or by resolving puzzles. This finding is in accordance to one of Woo, Woong, & Young (2012) who determined the interest in winning games and engaging in behavior that contributes to victory among players. Greenberg et al. (2010) concluded that competition is the mechanism by which gamers can compare themselves to each other, while Weiss & Schiele (2013) revealed that both competitive (competition and challenge) and hedonic need gratifications (escapism) drive continuous eSports use.

Respondents also agreed that Playing eSports video games improves social interaction, which corresponds to Hamilton's et al. (2014) attitude that socializing with peers has been shown to be of great importance within eSports and playing video games. This finding is in accordance to the one of Staiano & Calvert (2011) who stated that playing effects can lead to improved physical and cognitive performance, and social interaction. According to Baltezarević, Baltezarević, & Baltezarević (2018, 71) "the game is constantly present in the life of a man and is needed both for the individual and the society, primarily because of the social connections that the participants of the game accomplish". The game allows gamers to develop a sense of belonging to a special type of community that gathers those who play

and that differ from each other because "every individual has the awareness of himself and of his affiliation to a particular group of people with whom distinctions of attitudes, values and attitudes differ in relation to another group" (Baltezarević & Baltezarević, 2010, 86). Ho & Huang (2009) also state that online gaming use emphasizes the importance of various types of cooperation or dependency between players.

Respondents had a positive attitude towards the claim that Playing eSports video games improves skill building for problem solving, as gameplay increases strategic thinking, cognitive skills and kinesthetic skills (Boyan & Sherry, 2011) and can provide an enriched medium for strategic problem solving (Shaffer, 2006). This finding is in accordance to the one of Goldstein (2011), who suggested that playing eSports improves decision-making, and reasoning. Playing eSports video games as a learning approach enables continuous adoption of learning tasks, contents and contexts, and trains players for improved skill building and problem solving. In this way eSports games have great potential in helping players to develop problem-solving skills and construct new knowledge (Triantafyllakos, Palaigeorgiou, & Tsoukalas, 2011), improve their problem-solving capabilities (Kiili, 2007), and encumbers them with learning contents to complete their knowledge and global view (Mayer & Wittrock, 2006).

Finally, respondents supported the claim that playing eSports video games improve the pleasurable stimulation that leads to emotional well-being which agrees with the findings of Boyan & Sherry (2011). There is a relationship between playing video games and an increases in positive emotion, like Ryan, Rigby, & Przybylski (2006) also concluded in their research. According to Baltezarević et al. (2018, 72) "the game allows moving away from the problems of the real world and directs the players towards different priorities and behavioral changes in relation to everyday life". Playing eSports video games provides a playground, supported by the media, in which players have the opportunity to fulfill their needs, where they can enjoy the pleasure of winning, the joy of success, and the satisfaction that comes from collaboration or competition with others (Liu & Lin, 2009).

CONCLUSION

Term eSports video games is mostly linked to the younger population. The current research involved mainly adult respondents (aged from 26 to 45 years) of both sexes. The results showed that eSports video games-based approaches provide adaptable, motivating and engaging techniques that can be used to empower individuals and communities in ways that lead to not only conveying declarative sport knowledge, but also developing systems of thinking and competition skills, social interaction, skill building for problem solving through online collaboration and creative thinking and pleasurable stimulation which results in emotional well-being. Further investigations are needed that will include not only affirmative aspects, but negative phenomena related to eSports, too.

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eSPORT KAO NOVA IGRAONICA

Tradicionalni sport pojavom digitalnih medija dobija kompjuterske platforme kao novu vrstu prostora za igru. eSports, kao savremeni oblik igre postao je nezaobilazan deo kulture digitalne igre. Cilj ovog istraživanja je da se utvrdi da li postoji povezanost između igranja eSports video igara i znanja u oblasti sporta, takmičarske veštine, društvene interakcije, izgradnje veština zarad rešavanja problema i podsticanja prijatne stimulacije koja dovodi do emocionalnog blagostanja. Istraživanje je obuhvatilo 256 ispitanika koji su popunjavali upitnik koji je obezbedio odgovore na pitanja koja su omogućila da sagledamo stavove ispitanika koji su testirani u odnosu na hipoteze postavljene u ovom radu. Istraživanje je pokazalo da ispitanici smatraju da ova vrsta igre, i amatersko takmičenje ima pozitivan uticaj na igrače i da im pomaže da unaprede svoja znanja o sportu i kognitivne sposobnosti za takmičenje i socijalizaciju, kao i da se dobro osećaju u ulozi igrača.

Ključne reči*: eSports, veštine, interakcija, rešavanje problema, blagostanje, korelacija.*