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Investigation of e-sports attitudes among prospective physical education and sports teachers

Engin Vural[1]*, Sinem Toçoğlu[2], Tuncay Kiratli[3], Yavuz Yildirim[4], Büşra Saritemur[5]

[1] Ministry of National Education, Bitlis, Turkey.

[2] Sakarya University of Applied Sciences, Faculty of Sport Sciences, Sakarya, Turkey.

[3] Balıkesir University, Faculty of Sport Sciences, Balıkesir, Turkey.

[4] Sakarya University of Applied Sciences, Graduate School of Education, Department of Recreation, Sakarya, Turkey.

[5] Sakarya University of Applied Sciences, Graduate School of Education, Department of Physical Education and Sports, Sakarya, Turkey.

* Correspondence: Engin Vural; enginvural06@gmail.com

ABSTRACT

This study aimed to examine the e-sports attitudes of prospective physical education and sports teachers. A total of 304 participants, including 154 (50.7%) females and 150 (49.3%) males, with a mean age of $\bar{X}$ = 21.17±2.10, studying in the Department of Physical Education and Sports Teaching at three different state universities, were included in the study. A Personal Information Form developed by the researchers and the "E-Sports Attitude Scale" were used to assess e-sports attitudes. According to the study results, a statistically significant difference was found in mean e-sports attitude scores according to the gender variable ($p<0.05$). It was determined that there were no statistically significant differences in mean e-sports attitude scores according to class level ($p>0.05$). However, statistically significant differences were observed in mean e-sports attitude scores based on the duration of gameplay ($p<0.05$). In conclusion, it was found that males exhibited more positive attitudes toward e-sports, grade level did not significantly affect e-sports attitudes, and participants' attitudes toward e-sports became more positive as gameplay duration increased. Future studies may consider exploring other demographic factors influencing e-sports attitudes, which are expected to contribute further to the literature.

KEYWORDS

E-sports; Attitude; Physical Education; Sports; Teachers

1. INTRODUCTION

There have been many technological developments that have matured over time and become reflected in the field of sports. One of the most prominent of these developments is electronic sports or e-sports. With the decreasing costs of technological devices, arcade games became accessible on television screens and in internet cafes. As technology advanced, games evolved, and a multitude of new games began to emerge. In this way, the concept of e-sports took shape and developed significantly (Argan et al., 2006). Through local network connections, large-scale tournaments began to be organized, bringing elite players together on international platforms. This advancement enabled e-sports to become a globally competitive environment. The first prize-winning tournament was held in England in 1997 under the name "Red Annihilation," where players received awards for their success. Following this tournament, a business entrepreneur named Angel Munoz founded an electronic sports company in 1997, pioneering the globalization and popularization of e-sports (Ersoy & Yaşar, 2003). As a result, this branch of sport, known as e-sports, an industrial revolution in its own right, secured its place on a global scale and has continued to grow to the present day (Ayhan, 2002).

Rapid technological advances worldwide have led to the emergence of new sectors and concepts. E-sports is one of the important new phenomena that has gained prominence in recent years. Although there is no universally accepted definition, Wagner (2006) defined e-sports as sporting activities aimed at improving individuals' mental and physical abilities through the use of information and communication technologies. Similarly, Hamari & Sjöblom (2017) described e-sports as a form of traditional sport whose fundamental elements are supported by electronic systems. E-sports is a category of sport that encompasses both physical and mental attributes. It differs from traditional sports in that it can be performed either individually or as a team, requires unique equipment and materials, is accessible to players of all ages and genders globally, is unaffected by climate conditions, and allows an athlete to participate in multiple games at the professional level. Additionally, e-sports require a combination of skills such as reaction time, similar to archery; reflexive movements, akin to baseball; and analytical thinking, much like chess (Argan et al., 2006, Gürer et al., 2024).

E-sports, which has influenced the entire world and spread globally, also affects individuals in Turkey. In Turkey, the Turkish Digital Games Federation (TUDOF) was established by the Ministry of Youth and Sports in 2011. In 2013, this organization was incorporated into the Emerging Sports Federation to continue its activities (Mustafaoğlu, 2018). With the continuous advancements

in science and technology around the world, all societies are in need of developing and adopting new technologies. As technologies evolve, innovative products are introduced, which in turn simplify daily life. These innovations generate new needs, making it essential to follow emerging technologies and remain open to change (Üstün & Akman, 2015). In this context, perspectives and attitudes toward electronic sports, which constitute a new domain of technological innovation, are of great importance. This research aims to examine the e-sports attitudes of prospective Physical Education and Sports Teachers at the Faculties of Sport Sciences in three different state universities in Turkey.

2. METHODS

2.1. Study Design and Participants

A quantitative model was used in the study. This model aims to objectively measure the social behaviors of individuals through experiments, observations, and tests. The data obtained are expressed numerically (Erişti et al., 2013). In the research, the survey design was employed, which aims to make judgments about an entire population or a representative group (Creswell, 2017). The study included 304 students from the Physical Education and Sports Teaching Departments at the faculties of sports sciences in three different state universities. Among the 304 participants, 154 (50.7%) were female and 150 (49.3%) were male, with an average age of 21.17±2.10 years.

2.2. Instruments and Procedures

In this study, data were collected using a questionnaire form. Data were obtained through face-to-face interviews with the participants using the Personal Information Form prepared by the researcher and the "E-Sports Attitude Scale" developed by Savaş and Turan (2023). The Personal Information Form, created by the researchers, included variables such as gender, age, academic year, and daily time spent playing online games.

The "E-Sports Attitude Scale", developed by Savaş & Turan (2023), consists of 18 items and three subscales and uses a 5-point Likert-type scale. The items are rated on a scale from "1 = Strongly disagree" to "5 = Strongly agree." Three items in the scale are reverse-scored. The subscales are divided into cognitive (Items 1–6), affective (Items 7–12), and behavioral (Items 13–18) components. The minimum score that can be obtained from the scale is 18, and the maximum is 93 (Savaş & Turan, 2023). As a result of the current research, Cronbach Alpha internal consistency coefficient was calculated as .866.

2.3. Statistical Analyses

All data obtained in this study were analyzed using the SPSS 26 software package. A normality test was conducted for the variables, and it was determined that the data were normally distributed. An independent sample t-test was used for pairwise group comparisons, and one-way analysis of variance (One-Way ANOVA) was employed for comparisons among more than two groups. A significance level of $p < 0.05$ was used for all statistical evaluations.

3. RESULTS

Table 1 shows the descriptive characteristics of the participants in the study. It summarizes the sample according to gender, grade level, and game play time.

Table 1. Descriptive results of the participants

Gender	**n**	**%**
Female	154	50.7
Male	150	49.3
Grade Level	**n**	**%**
1st Grade	87	28.6
2nd Grade	38	12.5
3rd Grade	91	29.9
4th Grade	88	28.9
Game Play Time	**n**	**%**
< 1 hour	133	43.8
1-3 hours	97	31.9
3-5 hours	39	12.8
> 5 hours	35	11.5
Total	**304**	**100.0**

According to Table 1, the participants were almost equally distributed by gender, with 50.7% female and 49.3% male. Most participants were 3rd grade students (29.9%), followed by 4th grade (28.9%) and 1st grade students (28.6%), while 2nd grade students represented the smallest group (12.5%). Regarding online game play time, the majority of participants played for less than 1 hour (43.8%), followed by 1–3 hours (31.9%), 3–5 hours (12.8%), and more than 5 hours (11.5%). Table 2 shows the comparison of participants' e-sports attitudes according to gender.

Table 2. Comparison of e-sports attitude by gender

	Gender	n	X	Sd.	t	p
Cognitive	Female	154	17.34	4.79	-3.149	0.002*
	Male	150	19.30	5.99		
Affective	Female	154	17.81	5.67	-2.793	0.006*
	Male	150	19.77	6.57		
Behavioral	Female	154	14.23	5.03	-6.400	0.000*
	Male	150	18.33	6.09		
E-Sports Total	Female	154	49.37	11.95	-5.013	0.000*
	Male	150	57.41	15.70		

As a result of the independent groups t-test in Table 2, it was determined that there were significant differences in the mean scores of cognitive, affective, behavioral subscales and e-sports total scores according to gender, in favor of male participants ($p<0.05$). Accordingly, it can be said that the mean scores of male participants are significantly higher than the mean scores of female participants. Table 3 shows the comparison of participants' e-sports attitudes according to grade level.

Table 3. Comparison of e-sports attitude according to grade level

	Grade Level	n	X	SD	F	p
Cognitive	1st Grade	87	17.60	5.66	1.173	0.320
	2nd Grade	38	17.63	5.08		
	3rd Grade	91	18.91	5.22		
	4th Grade	88	18.67	5.76		
Affective	1st Grade	87	19.31	6.78	0.327	0.806
	2nd Grade	38	18.50	6.06		
	3rd Grade	91	18.70	5.67		
	4th Grade	88	18.44	6.25		
Behavioral	1st Grade	87	16.54	6.37	0.513	0.674
	2nd Grade	38	16.55	5.31		
	3rd Grade	91	16.49	5.63		
	4th Grade	88	15.59	6.10		
E-Sports Total	1st Grade	87	53.45	16.10	0.169	0.918
	2nd Grade	38	52.68	11.78		
	3rd Grade	91	54.11	13.39		
	4th Grade	88	52.70	15.09		

The results indicate that there were no statistically significant differences in cognitive, affective, behavioral, or total e-sports attitude scores among 1st, 2nd, 3rd, and 4th grade students ($p > .05$). This suggests that grade level did not significantly affect e-sports attitudes. Table 4 shows the comparison of participants' e-sports attitudes according to daily online game playing time.

Table 4. Comparison of e-sports attitude according to daily online game playing time

	Game Play Time	n	X	SD	F	p	Difference
Cognitive	< 1 hour [a]	133	16.91	5.02	7.179	0.000	c,d>a
	1-3 hours [b]	97	18.59	4.96			
	3-5 hours [c]	39	20.15	6.20			
	> 5 hours [d]	35	20.77	6.39			
Affective	< 1 hour [a]	133	17.27	5.88	8.022	0.000	c> a,b
	1-3 hours [b]	97	18.88	5.73			
	3-5 hours [c]	39	22.28	6.25			
	> 5 hours [d]	35	20.31	6.80			
Behavioral	< 1 hour [a]	133	14.11	5.22	14.556	0.000	b,c,d>a
	1-3 hours [b]	97	16.85	5.44			
	3-5 hours [c]	39	19.59	5.74			
	> 5 hours [d]	35	19.06	6.94			
E-Sports Total	< 1 hour [a]	133	48.29	12.87	14.523	0.000	b,c,d>a
	1-3 hours [b]	97	54.31	12.18			
	3-5 hours [c]	39	62.03	14.72			
	> 5 hours [d]	35	60.14	18.04			

As a result of the one-way analysis of variance (ANOVA) presented in Table 4, significant differences were observed in the mean scores of the cognitive, affective, and behavioral subscales, as well as in the total e-sports scores, according to daily online game playing time ($p < 0.05$).

4. DISCUSSION

With the development of digital technologies in recent years, the e-sports industry has become a rapidly growing field, reaching an economic volume of billions of dollars on a global scale. E-sport has evolved beyond merely being an entertainment activity and has become a multifaceted sector supported by various economic resources such as sponsorships, advertising revenues, broadcasting rights, event earnings, and salary payments to professional players. Among the structures supporting the development of this industry are gaming equipment manufacturing companies, digital broadcasting platforms, tournament and organization companies, and media outlets. This ecosystem encompasses not only the gaming experience but also the entrepreneurship and economic activities shaped around it (Giakoni et al., 2022; Perrino Peña & Martínez-Rodríguez,

2025; Özgürel et al., 2025). In this study, the aim was to examine individuals' attitudes toward e-sports across various dimensions.

The results of the independent groups t-test conducted according to the gender variable revealed that gender played a determining role in attitudes toward e-sports. In this context, significant gender-based differences were found in total attitude scores, as well as in the cognitive, affective, and behavioral subscales ($p < 0.05$). According to the findings, male participants had higher mean scores across all subscales and in the overall e-sports attitude compared to female participants. This finding indicates that male individuals have more positive attitudes toward e-sports and demonstrate greater interest in this field. This may be attributed to the fact that digital game culture has been male-oriented for many years, reflecting broader gender roles within this context. Therefore, the observed difference should be considered within a broader framework shaped not only by individual preferences but also by social norms, media representations, and cultural dynamics. A review of the literature supports these findings. Rogstad (2022) stated that the e-sports industry is male-dominated, which leads to female e-sports players remaining in the background. In this context, it can be suggested that males may exhibit more positive attitudes toward e-sports than females. Similarly, Taylor & Stout (2020) emphasized that the e-sports industry is largely male-dominated and characterized by gender inequality. In light of these observations, considering that males are more prominently represented in e-sports while females remain underrepresented, it can be concluded that males tend to display more favorable attitudes and approaches toward e-sports. Supporting this, Yavuz Söyler & Altungül (2023) examined the average scores and standard deviations of participants' results on the Attitude Scale Toward E-Learning in Sports, based on gender. The results revealed that males scored higher than females, with a statistically significant difference between the genders ($p < 0.05$). This finding highlights that males' attitudes toward E-Learning in Sport differ from those of females, reinforcing the current study's conclusions. Conversely, in the study conducted by Tapşin & Özdemir (2024), analyses based on gender revealed no statistically significant difference in general or subscale scores related to e-sports attitudes. However, it was observed that male participants still had higher mean scores than female participants, suggesting that males may be more interested in e-sports despite the absence of statistically significant differences. This study does not support the current study's findings. Similarly, Turan et al. (2024) found no significant difference between groups when comparing e-sports attitudes by gender. Participants demonstrated similar levels of e-sports attitude, which may be explained by the growing popularity of e-sports among both males and females and the narrowing gender gap in interest. In another study

by Bozkurt (2021) on sports sciences students, the average scores for attitudes toward E-Learning in Sports, academic procrastination, and emotional intelligence were examined in relation to gender. The analysis revealed no significant gender-based differences in attitudes toward E-Learning in Sport or academic procrastination ($p > 0.05$). This suggests that gender does not play a determining role in these variables, further contrasting with the results of the current study.

The results of the one-way analysis of variance (ANOVA) according to the participants' grade levels revealed that there was no significant difference in the mean scores of the cognitive, affective, behavioral subscales, or overall e-sports attitudes ($p > 0.05$). This finding indicates that participants' attitudes toward e-sports remain consistent regardless of their year in the program. The analysis suggests that students' cognitive, affective, and behavioral attitudes toward e-sports do not vary by grade level, implying that academic seniority is not a determining factor in shaping attitudes toward e-sports. Accordingly, students at different stages of their education demonstrate a balanced distribution of e-sports attitudes across all subscales. When existing literature is examined, findings from the study conducted by Yavuz Söyler & Altungül (2023) align with the present results. Their study investigated the mean and standard deviation values of scores obtained from the Attitude Scale Toward E-Learning in Sports, based on participants' grade levels. The results indicated that there was no statistically significant difference between grade level and attitude scores ($p > 0.05$). This shows that students' grade level did not significantly influence their attitudes toward E-Learning in Sports, reinforcing the notion that grade level is not an influential factor in terms of students' educational technology-related attitudes. In summary, students appear to have similar perceptions and approaches toward e-sports regardless of their academic year. Due to the limited number of studies addressing this specific variable, extensive comparisons cannot be made. However, this research is expected to contribute valuable insights to future studies that consider the impact of grade level on e-sports attitudes.

Significant differences were found in the mean scores of participants' cognitive, affective, and behavioral subscales, as well as in the total e-sports scores, according to the duration of gameplay ($p < 0.05$). In the cognitive subscale, it was observed that participants who played games for 3–5 hours and more than 5 hours had higher scores than those who played for less than 1 hour. In the affective subscale, participants who played for 3–5 hours scored higher than those who played for less than 1 hour and 1–3 hours ($p < 0.05$). In the behavioral subscale, participants who played for more than 5 hours, 3–5 hours, and 1–3 hours had higher scores compared to those who played for less than 1 hour ($p < 0.05$). Additionally, in the total e-sports scores, participants who played for more than 5 hours,

3–5 hours, and 1–3 hours had significantly higher scores than those who played for less than 1 hour ($p < 0.05$). These findings suggest that participants' attitudes toward e-sports, across cognitive, affective, and behavioral subscales, become more positive as the duration of gameplay increases. In a study by Sarı & Harta (2019), the average daily playing time of participants was examined. According to their results, 40% of participants play games for 2–3 hours a day, while 36.7% play for 1–2 hours. On the other hand, 9.2% of participants play for more than 4 hours, 8% for 0–1 hour, and 5.8% for 3–4 hours. These findings show that the majority of participants play games for 1–3 hours daily, with very few playing for more than 4 hours. Additionally, the relatively low proportion of participants who play for 0–1 hour suggests that their gaming habits are moderate, while both excessive and very limited game-playing habits are less common. This indicates that participants' gaming habits generally fall within a moderate range. In a study conducted by Can & Tekkurşun (2020), significant differences were found between participants' daily digital gameplay time, their digital game addiction levels, and their awareness of addiction. The findings show that athletes who play games for more than 61 minutes a day have higher addiction scores than those who play for 30 minutes. On the other hand, the addiction awareness scores of athletes who play for 30 minutes a day are significantly higher than those who play for 31–60 minutes or more than 61 minutes. This finding suggests that as the time spent playing digital games increases, the level of addiction also increases, while players' awareness of their addiction decreases. Similarly, e-sports players who play for more than 30 minutes daily show higher addiction scores, while those who play for 30 minutes or less exhibit a higher awareness of their addiction. These results imply that longer digital gaming sessions may lead to addiction, while awareness of this addiction tends to decrease with increasing playtime. In his study, Yılmaz (2020) pointed out that while streaming games does not necessarily lead to addiction for every individual, it may increase the risk of developing an addiction. This can be attributed to the tendency of individuals to play for longer periods and choose more challenging games to maintain the sense of enjoyment they experienced earlier. Such behavior may lead to tolerance development, where individuals require longer playing times to achieve the same pleasure. This process, combined with other psychological factors, can create a dynamic that facilitates the development of gaming addiction. In other words, the flow experience and extended game durations may pave the way for addiction over time. These findings support the current study.

5. CONCLUSIONS

In conclusion, this study demonstrates that attitudes toward e-sports are influenced by variables such as gender, grade level, and playing time. Notably, gender plays a significant role in shaping e-sports attitudes, with males exhibiting more positive attitudes. Additionally, attitudes tend to improve as the time spent playing games increases. These findings suggest that the social and psychological dynamics within the e-sports industry and digital gaming culture warrant further investigation.

To expand e-sports to a wider audience, efforts should be made to increase the representation of females in the industry. Gender-sensitive programs and initiatives should be developed to promote inclusivity and encourage greater female participation in e-sports. Given the correlation between playing time and positive attitudes, it is important to address the potential risks of gaming addiction. Awareness campaigns should be organized to inform players about the importance of balancing gaming time and its potential impact on mental health. Including e-sports in educational curricula can foster greater interest in the sector among young people. This would not only promote the growth of e-sports but also contribute to its development in a healthier and more balanced manner. Future studies should delve deeper into the social and psychological factors that influence attitudes toward e-sports, particularly focusing on the role of gender, cultural perceptions, and the evolving nature of digital gaming.

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CONFLICTS OF INTEREST

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