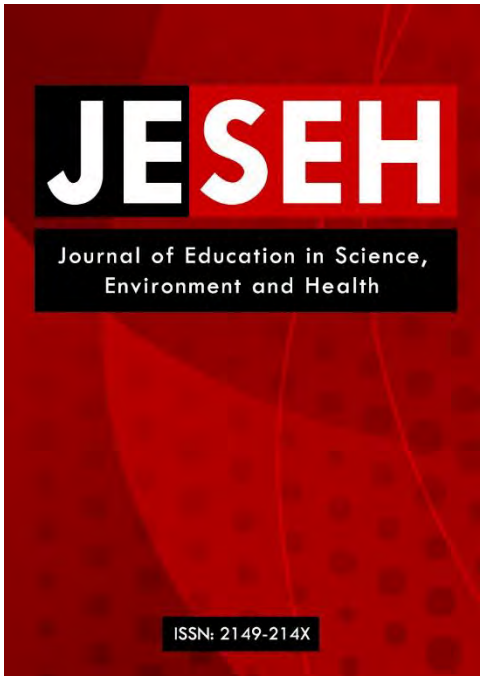

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Abstract

The purpose of this research is to examine the relationship between primary school students' school happiness and digital game addictions. The study group of this research, which was designed in the relational survey model, consists of 204 fourth-grade primary school students studying in the Pendik district of Istanbul. In the research, the "School Happiness Scale for Primary School Children" developed by Ozdemir et al. (2021) and "The Digital Game Addiction Scale" which was developed by Lemmens, Valkenburg & Peter (2009) and adapted into Turkish by Yalçın-Irmak & Erdoğan (2015), and later whose validity and reliability analyzes were made for primary school children by Oral and Arabacıoglu (2019) were used. According to the research findings, it was found that the students' school happiness was at a moderate level and their digital game addiction was at a high level. Students' school happiness levels and digital game addiction levels do not show significant differences according to their genders. Similarly, the digital game addiction levels of students do not differ statistically according to the gender of their teachers, but the school happiness levels of students with female teachers are statistically significantly higher than those with male teachers. On the other hand, while the digital game addiction levels of the students do not differ significantly according to the school success of the students, the school happiness levels of the students with medium school success are significantly higher than the students with low or very high school success. According to another finding obtained from the research, there is a negative, low, and significant relationship between students' school happiness levels and digital game addiction levels. As a result of the regression analysis, it was seen that school happiness was a significant predictor of digital game addiction. School happiness explains 3% of digital game addiction.

Introduction

The contemporary understanding of education, which is based on the holistic development of the child, aims to provide children with good educational services so that they can acquire the knowledge and skills they may need, enjoy life and develop coping skills (Ozdemir et al., 2021). The positive psychology approach, which emphasizes character strengths and positive aspects of the person, emphasizes that children's experiencing more positive emotions such as happiness will be a protective and developmental factor in their lives (Duckworth et al., 2005). Happiness, which consists of the cognitive and emotional evaluation of life, can be defined as the sum of pleasant moments in life (Lucas & Diener, 2009; Veenhoven, 2008). According to well-being theory, happiness is one of the components of well-being (Seligman, 2011). School happiness is defined as experiencing positive emotions at school (Lyubomirsky et al., 2005).

When we look at the definitions of happiness for childhood, it is seen that children define happiness through positive emotions such as spending time with family and friends, participating in fun activities, being academically successful, helping others, and the absence of violence (Giacomoni et al., 2014; Nairn et al., 2011; Thoilliez, 2011). When we look at the definitions of happiness of school-age children, it is seen that they define happiness as meeting their psychological needs and expectations, establishing good relationships with their teachers and other friends, having a good school environment, creating a suitable environment where they can realize themselves and establishing effective social relationships (Engels et al., 2004; Konu et al., 2002). Students' subjective well-being at school is defined in terms of the feelings they experience at school and how they evaluate these feelings. As students feel good and have a good time at school, they become happier, and accordingly, school satisfaction increases (Engels et al., 2004). Happiness in the school environment enables students to increase their academic achievement, communicate better with their peers, and cope with stressful situations more easily (Bird & Markle, 2012; Sezer & Can, 2019; Yucel & Vogt-Yuan, 2016). All these suggest that school happiness is an important variable for student well-being (Engels et al., 2004). In this respect,

determining the variables related to school happiness can make important contributions for teachers and practitioners (Ozdemir et al., 2021).

School happiness is thought to be important for students to be academically successful, to have high subjective well-being, and to follow their developmental processes successfully. Studies have shown that students who are happy at school have higher attendance rates and get higher grades (Schonert-Reichl & Lawlor, 2010). In addition, a child's happiness at school has a positive effect on mental health (Weissberg et al., 2015). When children move away from positive emotions such as happiness and experience negative emotions including pressure, they may turn to digital games, which are thought to be relaxing, to escape from them (Young, 2009). On the other hand, it is known that playing games can make people addicted as a result of being seen as a means of passing time (Kim et al., 2008).

Technological developments affect individuals of all ages to a great extent and one of the most basic effects it brings to children's lives is the concept of digital games (Erboy & Akar- Vural, 2010). Digital games, which are played using various technologies, created using many different software, and designed by considering technological content, are classified as console games, computer games, and online games (Gokcearslan & Durakoglu, 2014). The fact that visuality is more prominent in digital games and players can easily access the games whenever they want has caused digital games to be preferred more than traditional games (Ceylaner & Yanpar- Yelken, 2017). In addition, studies show that digital game addiction is a threat to adolescents and children (Ministry of Health, 2018).

Looking at the studies, it is known that digital games have many harms in general, but they negatively affect the cognitive, affective, and social development of children, especially those in the development process (Hazar & Hazar, 2017). When we look at the harms of these games, it is possible to isolate children, disconnect them from real life, normalize the sense of violence learned from game content by generalizing it to other areas of life, postpone basic needs such as nutrition, sleep, and toilet as a result of hours of sitting and playing games, experience physical discomfort due to long-term and unhealthy sitting styles, and perhaps most importantly, become addicted to games (Arslan et al., 2014; Griffiths & Meredith, 2009; Hazar & Hazar, 2017; Smith, 2004; Torun et al., 2015). Among all these negative consequences, addiction is perhaps the one that needs to be emphasized the most, and the possibility of digital game addiction in children may increase because the negative consequences of addiction are not fully known, especially in technological conditions that continue to develop, and the formation of environments that may increase children's susceptibility to digital game addiction (Hazar & Hazar, 2017).

Digital game addiction is defined as an individual's obsessive playing of digital games, i.e. computer games, despite causing social and emotional problems and the inability to control this situation (Pallese et al., 2015). Studies have shown that living in a negative family environment encourages stress and negative emotions and that people with negative affect prefer to distance themselves from their real emotions by escaping from the pressures they face in real life (Baturay & Toker, 2015; Sela et al., 2020). This can be shown as one of the reasons for using digital games to cope with the undesirable effects of the external environment (Shi et al., 2019). On the other hand, while examining digital game addictions in the literature, it is thought that examining how variables such as happiness, one of the concepts of positive psychology, are related to game addiction may be beneficial within the scope of preventive services. In a study, how game addiction is affected by protective variables such as subjective well-being was examined and the results showed that there was a negative relationship between online game addiction and subjective well-being, and a positive relationship between happiness and life health and subjective well-being (Chang, 2023). Another study shows that people with low subjective well-being may be more likely to engage in certain leisure activities such as online games to increase their happiness and life health (Nowland et al., 2017). In addition, the seriousness of seeing digital games as a coping tool for mental health (Cho et al., 2020) leads us to examine the variables that will protect individuals especially students from digital game addictions. Another study examined the effect of subjective well-being on online game addiction and found a negative relationship between subjective well-being and digital game addiction (Chang, 2023). In another study, it was observed that high levels of digital game addiction were associated with low psychological happiness (Goh et al., 2019). In another study examining the relationship between secondary school students' happiness levels and digital game addiction levels, it was observed that there was a negative relationship between students' happiness levels and digital game addiction (Cengiz et al., 2020).

The World Health Organization (2018) has shown that digital game addiction negatively affects academic and personal performance. On the other hand, positive emotions that students experience at school, being happy in their lives at school increases school happiness and can contribute to meeting the psychological needs of the

students and distract them from undesirable behaviors (Engels et al., 2004). In this context, examining the protectiveness of increased school happiness in decreasing students' digital game addiction may contribute to the field. Despite all these, we have not come across a study that examines the relationship between school happiness and digital game addiction in primary school children. Based on these considerations, this study aimed to examine the relationship between school happiness and digital game addiction in fourth-grade primary school students. In line with this general purpose, answers to the following questions were sought in the study.

1. What are students' levels of school happiness and digital game addiction?
2. Do students' school happiness and digital game addiction show a significant difference according to gender variables?
3. Do students' school happiness and digital game addiction show a significant difference according to the school achievement variable?
4. Is there a statistically significant relationship between students' school happiness and digital game addiction?
5. Does school happiness predict students' school happiness and digital game addiction?

Method

Research Model

This study, which examines the relationship between students' school happiness and digital game addiction, was designed in the relational survey model, one of the quantitative research models. Survey models are research approaches that aim to describe a past or current situation as it exists (Karasar, 2010).

Study Group

The study group of the research consists of 204 primary school fourth-grade students studying in the Pendik district of Istanbul province in the 2022-2023 academic year. Personal information of the study group is presented in Table 1.

Table 1. Frequency and percentage values of personal information

Variable	Groups	Frequency (f)	Percentage (%)
Gender	Female	90	44
	Male	114	56
	Total	204	100
Gender of the teacher	Female	118	58
	Male	86	42
	Total	204	100
School success (Grade point average)	60 points and lower	45	22
	61-80 points	96	47
	81 points and higher	63	31
	Total	204	100

As seen in Table 1, there were 90 (44%) female and 114 (56%) male students in the sample group, totaling 204 students. Of the teachers of the students participating in the study, 118 (58%) were female and 86 (42%) were male. When the year-end grade point averages of the students were analyzed, 45 (22%) had a grade point average of 60 points or less, 96 (47%) had 61-80 points, and 63 (31%) had 81 points or more.

Data Collection Tools

The data collection tool consists of three parts. The first section includes questions to learn the personal information of the participants. The second and third sections include the "School Happiness Scale for Primary School Children" developed by Ozdemir et al. (2021) and the "Digital Game Addiction Scale" developed by Lemmens, Valkenburg & Peter (2009) and adapted into Turkish by Yalcın-Irmak and Erdogan (2015), and then the validity and reliability analyses were conducted again by Oral and Arabacıoglu (2019) for primary school children.

School Happiness Scale for Primary School Children

The "School Happiness Scale for Primary School Children", which measures the school happiness levels of primary school students, was developed by Ozdemir et al. (2021). The total variance explained by the scale consisting of 4 items of 3-point Likert type and one dimension is 47.38%. In addition, the results of the confirmatory factor analysis revealed that the model showed a good fit ($\chi 2/sd = 1.87$, $p<.001$; CFI = .99, TLI = .98, RMSEA = .05). Croanbach's Alpha (α) reliability coefficient of the scale was found to be .61.

Digital Game Addiction Scale

The "Digital Game Addiction Scale", which measures students' digital game addiction levels, was developed by Lemmens, Valkenburg and Peter (2009). The adaptation study of the scale into Turkish was conducted by Yalcın-Irmak and Erdogan (2015), and then the validity and reliability analyses were conducted again by Oral and Arabacıoglu (2019) for primary school children. The total variance explained by the 4-point Likert-type scale consisting of 6 items and a single dimension is 46.23%. The confirmatory factor analysis results revealed that the model showed a good fit ($\chi 2/df=2.17$ $p<.01$; RMSEA= .06; GFI= .98; AGFI= .95; CFI=.98; NFI= .96; SRMR= .039). Croanbach's Alpha (α) reliability coefficient of the scale was found to be .76.

Data Collection, Processing, and Analysis of Data

The necessary legal permissions were obtained from the students who constituted the study group of the research before starting data collection. Then, the data were collected by delivering the link to the online form containing the data collection tools to the students who voluntarily participated in the study by the researchers. The data from 204 scales filled out by the participants through the sent link were included in the analysis. The collected data were analyzed using the SPSS 25.0 program. Before starting the analysis, it was examined whether the collected data met the unidirectional and multidirectional normality assumptions. George and Mallery (2003) state that if the skewness and kurtosis coefficients are within ±2, the distribution of the data meets the normality assumption. Based on this information, the skewness and kurtosis values of the data were examined and it was concluded that the scores of the School Happiness Scale (-,212 to -,830) and Digital Game Addiction Scale (-,174 to -,024) were within the normal distribution limits.

In the analyses, the significance of the difference between the averages was tested at a .05 level. In the interpretation of the arithmetic averages for the 3-point Likert-type scale, the range of 1.00-1.66 was considered as "never", 1.67-2.33 as "sometimes" and 2.34-3.00 as "always". For the 4-point Likert-type scale, the range of 1.00-1.74 was considered as "never", the range of 1.75-2.49 as "rarely", the range of 2.50-3.24 as "sometimes" and the range of 3.25-4.00 as "often" in the interpretation of arithmetic averages. In the interpretation of the correlation analysis, the range of .00-.30 was accepted as "low", .31-.70 as "medium" and .71-1.00 as a "high" level relationship (Buyukozturk, 2011). Descriptive statistics, t-tests, one-way analysis of variance, correlation analysis, and regression analysis were used to analyze the data.

Findings

The arithmetic mean, standard deviation and skewness-blankness values of students' school happiness and digital game addiction levels are presented in Table 2.

Table 2. Arithmetic mean, standard deviation, and skewness- kurtosis values of the variables of the study

Variable	$\bar{x}$	Sd	Skewness	Kurtosis
1. School happiness	1,96	,77	-,21	-,83
2. Digital game addiction	3,04	,64	-,17	-,02

When Table 2 was examined, it was found that the student's school happiness level ($\bar{x}$=1,96) was medium and their digital game addiction level ($\bar{x}$=3,04) was high. An independent group t-test was conducted to determine whether the school happiness scale and digital game addiction scale scores of the students constituting the sample group showed a significant difference according to the gender variable. As seen in Table 3, there was no significant difference between the school happiness (t= .16; P>.05) and digital game addiction (t= -85; P>.05) scores of the groups according to the gender variable.

Table 3. Independent groups t test results according to gender variable

Variable	Groups	n	$\bar{x}$	Sd	Se	*t* Test *t*	Df	*p*
School Happiness	Female	90	1,97	,57	,06	,16	202	.873
	Male	114	1,96	,60	,06			
Digital Game Addiction	Female	90	3,01	,42	,04	-.85	202	.398
	Male	114	3,06	,42	,04			

A one-way analysis of variance was performed to determine whether the school happiness scale and digital game addiction scale scores of the sample group showed a significant difference according to the school achievement variable.

Table 4. One-way analysis of variance (ANOVA) results according to school achievement variable

Variable	Groups	n	$\bar{x}$	Sd	Source of Variance	Sum of Squares	df	Mean Squares	F	p	LSD
School Happiness	Low	45	1,79	,67	Between Groups	3.605	2	1.802	5.434	,005	
	Middle	96	2,10	,58	Within Groups	66.663	201	,332			2-1
	High	63	1,88	,50	Total	70.268	203				2-3
	Total	204	1,96	,59							
Digital Game Addiction	Low	45	3,07	,34	Between Groups	.122	2	.061	.342	.711	
	Middle	96	3,01	,43	Within Groups	35.898	201	,179			
	High	63	3,06	,46	Total	36.020	203				
	Total	204	3,04	,42							

As seen in Table 4, no significant difference was found between the digital game addiction (F= .342; p>.05) scores of the groups according to the school achievement variable. However, a significant difference was found between the school happiness scores of the groups according to the school achievement variable (F= 5.434; p<.01). Post hoc analysis was conducted to determine which groups this difference was between. For this, firstly, it was examined whether the variances were homogeneous. As a result of the Levene test, it was seen that the variances were not homogeneous. Therefore, LSD analysis was conducted. The analysis revealed that the significant difference in the school happiness score was in favor of students with moderate school achievement. In other words, students with moderate achievement are happier at school than students with high and low achievement.

Relationships between Variables

The relationships between the dependent and independent variables of the study are presented in Table 5.

Table 5. Relationships between Variables

		Digital game addiction
School Happiness	r	-,157*
	p	,025

*p<.05; N=204

As a result of Pearson correlation analysis, it was found that there was a negative, low, and significant relationship (r= -.157; p<.05) between students' school happiness levels and digital game addiction levels.
Simple linear regression analysis was performed to examine the effect of students' school happiness levels on their digital game addiction levels and the results are presented in Table 6.

Table 6. Simple linear regression analysis results for the prediction of digital game addiction scale

Model	B	Std. E.	β	t	p	R	R^2	F	p
Constant	3.260	.102		31.997	.000				
Digital Game Addiction	-.112	.050	-.157	-2.261	.025	.157	.025	5.113	.000

It was found that students' school happiness levels were effective on their digital game addiction levels. School happiness explains approximately 3% of the variance of digital game addiction [$F_{(1,202)}$= 5.113; p<0.05]. When Table 6 is analyzed, the coefficient of school happiness is B= -.112. This shows that an increase of 1 unit in

students' school happiness causes a decrease of -.112 units in students' digital game addiction. According to the regression analysis results, the regression equation predicting the digital game addiction variable is as follows:

Digital Game Addiction= (-.112xSchool Happiness) + 3,260

Results and Discussion

The study aims to examine the relationship between school happiness and digital game addictions of primary school students. According to the research findings, it was found that students' school happiness was at a medium level and their digital game addiction was at a high level. In a study examining the digital game addictions of primary school students, it was found that the digital game addiction levels of third graders were higher than those of fourth graders (Kose, 2023). In the study conducted by Ozturk et al. (2020), the average scores obtained from digital game addiction of fourth-grade students were found to be at a low-risk level. In another study examining the digital game addiction of secondary school students, it was observed that students were in the low-risk group in terms of game addiction, while the digital game addiction levels of students differed in favor of male students (Bircan & Oner, 2022). It is thought that the differences in the results obtained may be due to the different characteristics of the sample groups.

According to another result obtained from the study, students' school happiness levels and digital game addiction levels do not show significant differences according to their gender. Looking at the literature, studies show that digital game addiction does not differ according to gender variables (Kim et al., 2008; Homer et al. 2012; Musluoglu, 2016). However, these studies are more limited than the others. In a study conducted with Generation Y, it was observed that the digital game addiction levels of boys were higher than girls (Akkaya et al., 2021). In another study, the digital game addiction of males was found to be higher than females (Cengiz et al., 2020). Many studies show that digital game addiction is higher in male students compared to female students (Bonannoa & Kommers, 2005; Kawabe et al., 2016). The reason why digital game addiction is seen more in male students is that the game content is designed to appeal to men and the reward and addiction parts of the brain structure of men are faster (Griffiths, 2008; Ogel, 2012). Therefore, although there are studies supporting the findings obtained from the research, it can be said that it does not support the general literature. When the studies between students' happiness levels and gender are examined, it is seen that the results obtained from this study are similar to the literature and happiness does not change according to gender (Cihangir-Cankaya & Meydan, 2018; Mahon et al., 2005).

According to a result obtained from the study, while the digital game addiction levels of the students did not show a significant difference according to the school achievement of the students, the school happiness levels of the students with moderate school achievement were significantly higher than the students with low and very high school achievement. In another study examining the relationship between school achievement and happiness, the happiness levels of students with low academic achievement were also found to be low (Certel et al., 2015). In Arslan's (2021) study with middle school students, it was found that there was a significant negative relationship between digital game addiction and a sense of responsibility. Gentile et al. (2011) concluded that individuals with digital game addiction exhibit low school performance. Kubey et al. (2001) reported that university students with problematic internet use experienced problems such as loneliness, staying up late and fatigued, decreased academic performance, and postponing their responsibilities. These results show that gaming addiction can negatively affect academic achievement.

According to another finding obtained from the study, there is a negative, low, and significant relationship between students' school happiness levels and digital game addiction levels. As a result of the regression analysis, school happiness was found to be a significant predictor of digital game addiction. School happiness explains 3% of digital game addiction. It was observed that the results obtained from this study showed that the rate of school happiness explaining digital game addiction was low and a different result was obtained from the related literature. On the other hand, when other studies in the literature are examined, it was seen that happiness predicted digital game addiction significantly in a study conducted with secondary school students and it was stated that a decrease in students' happiness levels should be considered as a factor that may increase digital game addiction (Cengiz et al., 2020). In another study examining the relationship between subjective happiness and digital game addiction, a negative relationship was found between digital game addiction and subjective happiness (Odabaşı, 2016). In another study conducted with adolescents, it was observed that digital game addiction had a negative relationship between happiness and the meaning of life (Kaya, 2021). It is thought that the results obtained are similar to the literature, but more studies are needed in this field.

Recommendations

The study is limited to the data obtained from this sample and the answers given by the students. The fact that the sample consists of primary school students may lead to various limitations in terms of their ability to understand and answer the questions correctly. In this respect, it is thought that there is a need to conduct more studies in the same age group, collect data from their teachers and families, and examine them in more detail with comparative and longitudinal studies. To obtain outputs on how school happiness levels of primary school students will affect their digital game addictions, it is recommended to collect qualitative data from students, parents, and teachers through interviews. On the other hand, schools should be made more interesting for children, considering that creating an environment where children will be happy at school from an early age will increase school happiness and increasing school happiness will reduce digital game addiction. In addition, it is thought that more studies examining the relationship between school happiness and digital game addiction are needed.

Scientific Ethics Declaration

The authors declare that the scientific ethical and legal responsibility of this article published in JESEH journal belongs to the authors.

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