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Research Article

Examination of the Relationship between Reading and Writing Attitudes and Computer Game Addiction of Primary School Students

Aykut Günlü [1]

Pamukkale University

Tuncay Oral [2]

Pamukkale University

Abstract

The basic aim of this study is to examine the relationship between reading and writing attitudes of primary school students and computer game addiction. It is also aimed to research whether or not these variables differentiate significantly in terms of gender and grade. The study group of consisted of 229 primary school students (108 females, 121 males) who were educated in Eskisehir/Turkey. In research, Reading Attitude Scale, Writing Attitude Scale and Computer Game Addiction for Children Scale were used to gather data. For statistical analysis, Pearson correlation coefficient, a one-way ANOVA and an independent samples t-test were used. According to the result of the research, it was concluded that there is a significant negative relationship between recreational-academic reading and computer game addiction. It was observed that there is no significant relationship between writing attitude and computer game addiction. Furthermore, while there is a significant difference between primary school students' recreational reading, academic reading, writing attitude and computer game addiction scores according to gender variable, no significant difference was found regarding grade variable.

Key Words

Reading attitude • Writing attitude • Computer game addiction • Primary school students

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[1] Child Development Department, Tavas Vocational High School, Pamukkale University, Denizli, Turkey. Email: agunlu@pau.edu.tr

[2] **Correspondence to:** Tuncay Oral (PhD), Child Development Department, Kale Vocational High School, Pamukkale University, Denizli, 20570 Turkey. Email: toral@pau.edu.tr

Reading and writing are among common mental activities that can be done individually, and these two abilities are effective in the learning levels of individuals. The acquisition and daily applicability of these two abilities are very important especially in primary school and other levels of education. These two acquisitions are prerequisites for the student to complete the academic tasks he will encounter in the future (Gündüz & Çalışkan, 2013). According to the Turkish Language Society (2011), quietly analyzing, understanding, and vocalizing a written text is defined as "reading" while expressing words and thoughts with signs and letters is defined as "writing" (Turkish Language Society, 2011). Attitude is using the mental processes that have redirecting effect on the behaviour of the individual. Attitude is the embodiment of behaviours in the direction of feelings which are created by feeling positive and/or negative to a certain phenomenon (Baştuğ & Keskin, 2013). Demirel (2005), defined attitude as a strong tendency which is effective on the behaviour of an individual. It is emphasized that reading and writing attitude has relation with individual's cognitive (thoughts that prompt to intellectual-reading), affective (positive-negative feelings, getting excited while reading) and behavioral (act that emerges with the combination of feelings and thoughts) dimensions and with the motivational processes of the individual (Çeçen & Deniz, 2015; Özbay & Uyar, 2009).

Reading and writing have important contributions for individuals to reach the sense of self, to be in compliance with the society they are in and to gain understanding and critical thinking abilities by enhancing their knowledge (Aktaş & Gündüz, 2004; Başaran & Ateş, 2009). Therefore, reading and writing attitude is significantly effective for individual self-development (Martinez, Arıcak, & Jewell, 2008; McKenna, Conradi, Lawrence, Jan, & Meyer, 2012). Especially when it is considered that the primary school has critical importance in the periods of development, the importance of reading emerges. As children acquire the ability to read and write, they also automatically acquire the ability to enhance intellectual capacity. Therefore, it is paid attention for children to develop a positive attitude towards reading and writing especially in the first weeks of school. A positive attitude also helps reading comprehension and to easily convey what individuals understand (Akyol, 2005; Güneş, 2007; Güngör & Açıkgöz, 2006; Kurt, 2008; Smith, Smith, Gilmore, & Jameson, 2012; Wilson & Casey, 2007). Furthermore, it is stated that children who had developed a positive attitude towards reading, continue their reading habits throughout their lives (Özkara & İzci, 2013).

According to Kağıtçıbaşı (2012), attitude is a process that emerges as a result of living and experiences. This livings and experiences consist of various factors such as common and social structure the individual live in, the digital world (technological tools), beliefs and educations. Thus, reading and writing attitudes are directly or indirectly affected with these livings and experiences (Çakıcı, 2005; Sallabaş, 2008; Kotaman, 2008). With the developments in technology, it is possible to play many games through laptops, independently from time and place and the duration individuals spent on computers are affected by this. This situation brings along many problems. The most common problem is that children being a game addict (Young, 2009). Computer game addiction is playing a game excessively and problematically with a computer or an electronic device with a feature of the computer, in such a manner that it harms both the individual and his/her surrounding (Lemmens, Valkenburg, & Peter, 2009; Young, 2009). There are studies in the literature which reveal computer games are beneficial (Horzum, Ayas, & Balta, 2008; Şahin & Tuğrul, 2012). Especially computer games that are played with limited duration and under control in the early ages may be beneficial in terms of the development of the child. For this reason, parents buy these technological devices for their children. However, playing excessive computer games and starting to hinder the responsibilities students must carry out, may turn them into devices

which negatively affect children, prevent their development and reduce their academic achievement (Aksaçlıoğlu & Yılmaz, 2007). Furthermore, this situation may have negative effects on the children's development of social skills (Chiu, Lee, & Huang, 2004). In the conducted researches it was concluded that individuals who play computer games give up at least one activity in their lives (Griffiths, Davies, & Chappel, 2004; Horzum et al., 2008). According to the data of the research conducted by Turkish Statistical Institute in 2018, children and adolescents (over 65%) are the age groups that play computer games the most.

As a result, both the results of the research and the other explanatory information in the literature suggest that positive attitude of school-age children towards reading and writing is important for their academic achievement and playing games with technological devices also affects the academic achievement of children. Accordingly, the basic aim of this study is to examine the relationship between reading and writing attitudes of primary school students and computer game addiction. It is also aimed to research whether or not these variables differentiate significantly in terms of gender and grade.

Method

Study Group

The study group of the research consists of a total of 229 (108 females 47.2% and 121 males 52.8%) voluntary student studying in the primary schools of Tepebaşı province in Eskişehir in 2017. 27.1% (n=62) of these students are in second grade, 35.8% (n=82) of them are in third grade and 37.1% (n=85) are in fourth grade. Data were collected by the researchers approximately in one lesson period.

Data Collection Tools

Reading Attitude Scale. Reading attitude scale was developed by McKenna and Kear (1990), translated to Turkish by Kocaarslan (2016) and it consists of 20 items and two factors (recreational reading and academic reading). The scale has 4 Likert-type options. The scores that can be achieved from the scale vary between 20-80. Increasing scores from the scale indicate that the students have a positive attitude towards reading. The construct validity of the scale was tested with confirmatory factor analysis (CFA). According to this, the goodness of fit indexes is found as RMSEA=.05 RMR=.05 CFI=.89 AGFI=.90. These fit index values indicate that construct validity of the scale is provided. Cronbach alpha internal consistency coefficient of the scale is found to be .88 (Kocaarslan, 2016). In the analysis conducted with the data collected within the scope of this study, the Cronbach's alpha internal consistency was determined to be .79.

Writing Attitude Scale. Writing attitude scale was developed by Graham, Berninger, and Fan (2007) and was translated to Turkish by Yıldız and Kaman (2016). The scale consists of 5 items and unidimensional. The scale has four Likert-type options, and the scores that can be achieved from the scale vary between 5-20 points. Increasing scores from the scale indicate that the students have a positive attitude towards writing. According to the exploratory factor analysis, conducted within the scope of the scale's validity studies, five-item scale explains 53% of the total variance. According to confirmatory factor analysis, the goodness of fit indexes is at acceptable levels (RMSEA=.067; RMR=.030; GFI=.97; CFI=.98). Factor loads of items in the reading attitude scale have values between 0.58 and 0.81. Cronbach alpha value of the scale was found to be .77 (Yıldız & Kaman, 2016). In the analysis conducted with the data collected within the scope of this study, the Cronbach's alpha internal consistency was determined to be .70.

Computer Game Addiction for Children Scale (CGACS). Computer game addiction for children scale was developed by Horzum et al. (2008). It is a scale with 21 items and has 5 Likert-type options. There are four sub-dimensions in the scale (cannot giving up playing computer games, dreaming about computer games, hindering duties because of playing computer games, preferring playing computer games to other activities). According to the data obtained from validity and reliability studies of the scale, it is stated that the scale can be used as both with four-factor and single factor. In this study, the scale was used as a single factor. The lowest score in the scale is 21, and the highest score is 105. High scores indicate the increasing risk of addiction. According to the exploratory factor analysis, the scale explains 45% of the total variance. Cronbach alpha internal consistency coefficient of the scale is .85 (Horzum et al., 2008). In the analysis conducted with the data collected within the scope of this study, the Cronbach's alpha internal consistency was determined to be .81.

Analysis of the Data

Before the data collection, the participants were informed about the purpose of the research, and how to answer data collection tools, and the procedures were implemented by the researcher in the classroom environment. Appropriateness of the data for parametric statistics usage was controlled. For this, the skewness and kurtosis coefficients were calculated, and they were found within the normality criteria (shown in table 3). Since data demonstrate a normal distribution, it was detected that the data is suitable for parametric statistics usage. T-test analysis and variance analysis are used in order to test whether or not the difference between the scales is significant, and Pearson correlation analysis is used in order to examine the relationship between variables.

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Findings

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In this section of the research, it was tested that whether or not recreational reading according to gender and grade level variables, academic reading, writing attitude and computer game addiction scores differentiate significantly. Then, correlation values between recreational reading, academic reading, writing attitude and computer game addiction were mentioned.

Table 1

T-Test Results Regarding Primary School Students Gender Variable

	Gender	N	$\overline{X}$	Sd	t	*p*
Recreational Reading	Female	108	35.95	4.11	4.81	.000
	Male	121	32.90	5.32		
Academic Reading	Female	108	35.82	3.66	3.31	.001
	Male	121	33.98	4.61		
Writing Attitude	Female	108	18.01	1.85	2.73	.007
	Male	121	17.27	2.19		
Computer Game Addiction	Female	108	43.30	15.37	-4.46	.000
	Male	121	52.52	15.83		

When the t-test results in Table 1 is examined, a significant difference in the scores of recreational reading (t=4.81; *p*<.01), academic reading (t=3.31; *p*<.01), writing attitude (t=2.73; *p*<.01) and computer game addiction (t= -4.46; p<.01) was observed. It was determined that female students' average scores of recreational reading ($\overline{x}$=35.95), academic reading ($\overline{x}$=35.82) and writing attitudes ($\overline{x}$=18.01) are significantly higher than male students' recreational reading ($\overline{x}$=32.90), academic reading ($\overline{x}$=33.98) and writing attitudes ($\overline{x}$=17.27).

Furthermore, average scores for computer game addiction (x̄=52.52) of male students were found to be significantly higher than the average scores for computer game addiction (x̄=43.30) of female students.

Table 2

One-Way Analysis of Variance Results Regarding Grade Variable of Primary School Students

	Source of the Variance	S.d.	Sum of Squares	Average of Squares	F	*p*
Recreational Reading	Intergroup	2	56.51	28,25	1.121	.328
	Intragroup	226	5694.92	25,20		
	General	228	5751.43			
Academic Reading	Intergroup	2	17.39	8,70	.471	.625
	Intragroup	226	4171.56	18,46		
	General	228	4188.95			
Writing Attitude	Intergroup	2	13.57	6.78	1.595	.205
	Intragroup	226	960.39	4.25		
	General	228	973.95			
Computer Game Addiction	Intergroup	2	441.54	220.77	.835	.435
	Intragroup	226	59780.82	264.52		
	General	228	60222.36			

When the one-way analysis of variance results in Table 2 are examined, no significant differentiation of primary school students in recreational reading (F=1.121, *p*>.05), academic reading (F=.471, *p*>.05), writing attitude (F=1.595, p>.05) and computer game addiction (F=.835, *p*>.05) scores.

Table 3

Correlation Values between Variables and Descriptive Statistics

Variables	1	2	3	4
1. Recreational Reading	-			
2. Academic Reading	.57**	-		
3. Writing Attitude	.42**	.42**	-	
4. Computer Game Addiction	-.28**	-.19**	-.10	-
Arithmetic Average	34.34	34.85	17.62	48.17
Standard Deviation	5.02	4.29	2.07	16.25
Coefficient of Skewness	-1.15	-.97	-1.05	.56
Coefficient of Kurtosis	.63	.45	1.09	-.22

**p<.01   *p<.05

When the analysis results in Table 3 are taken into account, it is observed that recreational reading has a significant positive relationship with academic reading (r=.57, *p*<.01) and writing attitude (r=.42, *p*<.01), and a negative significant relationship between computer game addiction (r=.28, *p*<.01). It is observed that academic reading has a positive significant relationship with writing attitude (r=.42, *p*<.01) and negative significant relationship with computer game addiction (r= -.19, *p*<.01). No significant relationship between writing attitude and computer game addiction(r= -.10, *p*>.05) was determined.

Discussion

This study aimed to examine the relationship between computer game addiction and reading and writing attitudes of primary school students. According to the result of the research, it was concluded that there is a negative significant relationship between recreational reading and academic reading and computer game addiction. It was observed that there is no significant relationship between writing attitude and computer game

addiction. Furthermore, while there is a significant difference between primary school students' recreational reading, academic reading, writing attitude and computer game addiction scores according to gender variable, no significant difference was determined according to grade variable. When the literature is examined, there are studies which found out that reading and writing attitudes are higher in female students compared to male students (Akkaya & Özdemir, 2013; Başaran & Ateş, 2009; Black, 2006; Graham et al., 2007; İşeri, 2010; Sallabaş, 2008; Schooten & Glopper, 2002). Also, there are studies which found out that computer game addiction is higher in male students, compared to female students (Çavuş, Ayhan, & Tuncer, 2016; Jeong & Kim, 2011; Mentzoni et al., 2011; Zorbaz, Ulaş, & Kızıldağ, 2015). Thus, it can be stated that the results of this study are in accordance with the literature.

When the literature is examined, in the longitudinally designed studies which were conducted by Sainsbury and Schagen (2004) in order to determine reading and writing attitudes of primary school students, it was determined that positive attitudes of students decrease as they promote in grades. Further, in the study that was conducted by Smith et al. (2012), it was observed that a positive attitude towards reading decreases as the grade levels increase. Similarly, in the study conducted by Mckenna, Kear, and Elisworth (1995), as the grade levels increase from first grade to sixth grade, attitude towards reading decreases. In the study conducted by Şahin and Tuğrul (2012), it was reported that computer game addiction does not differ significantly according to grade level. On the other hand, in the study conducted by Erboy and Vural (2010), it was observed that students in fifth grade demonstrate higher computer game addiction than students in fourth grade. In the study conducted by Horzum (2011), it was observed that students in fourth grade have a higher computer game addiction compared to students in third and fifth grade. As can be understood from these results, some of the results in this study show similarities with other studies in the literature according to the grade variable and some of them does not.

According to the results between reading and writing attitude, it was revealed that reading and writing processes should not be considered independently since there are significant positive relationships between recreational reading, academic reading and writing attitude. When it is considered that reading and writing processes of children begin in primary school and last through the end of the primary school, it seems natural that children develop interrelated attitudes towards reading and writing (Yıldız & Kaman, 2016). One of the factors which affect the attitude towards reading is the behaviours of parents or other adults around the child towards reading. Because adults are role models for children and children, who observe the attitude of adults towards reading may develop similar attitudes (Black, 2006). Similarly, the changes that parents make around the house for their children may affect the attitudes of children toward reading (Başaran & Ateş, 2009). For example, regulating the environmental conditions in the children's room in order to fight against computer game addiction may increase the positive attitude of children towards reading.

With the developments in technology, it is possible to play many games through laptops, independently from time and place and the duration individuals spent on computers are affected by this. The most common problem is that children being a game addict (Young, 2009). Computer game addiction is playing a game excessively and problematically with a computer or an electronic device with a feature of the computer, in such a manner that it harms both the individual and his/her surrounding (Lemmens et al., 2009; Young, 2009). Although computer games are beneficial in terms of the development of the child when they are played with a limited duration and under control (Horzum et al., 2008; Şahin & Tuğrul, 2012) playing excessive computer games and starting to

hinder the responsibilities students must carry out creates a negative situation (Aksaçlıoğlu & Yılmaz, 2007). When the literature is examined, since computer game addiction increases the duration students spend across the screen, their reading performance can be affected negatively (Elmas, Kete, Hızlısoy, & Kumral, 2015). It is also stated that there is a relationship between the increase in the time spent across the screen and a decrease in the reading time (Sharif & Sargent, 2006). In a study conducted by Weis and Cerankosky (2010), some of the children in the age group of 6-9 were given a computer gaming system, and some were not. When the students who were given a computer gaming system compared to other students, it was concluded that their reading attitudes are lower. According to Fromme (2003), because of computer games, children consider school and the readings they should make in the school as an obstacle for them to play computer games.

To sum up, studies given above indicate that there is a significant negative relationship between computer game addiction and reading attitudes, and these results support the results of this study. To interpret the results of this study in general, when an action becomes an addiction, it hurts the person. This also applies computer game addiction. Playing computer games at the normal level may not be harmful. However, reading and writing attitudes are decreasing in students with computer game addiction.

As a result, today, a life remote from technology cannot be imagined. For this reason, various training can be arranged in order to make children to gain a positive attitude towards using technology healthily and especially making them play educational computer games, without prohibiting technology. According to the result of the research, computer game addiction scores of male students are significantly higher than female students. For this reason, seminars can be arranged in order to increase the awareness of teachers and families in this subject by school counselling service towards male students. According to another result of the research, as the reading attitude level increases, computer game addiction level decreases. For this reason, projects that can increase the level of reading attitude in primary school children can be arranged about subjects such as easy access to reading materials and reading a book with children. According to another result of the study, when the reading and writing attitude scores are examined, it was observed that male students' scores are lower than female students'. New scientific researches can be conducted regarding finding the reasons for this inferiority.

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