The Effect of Digital Gaming Addiction on Speaking Self-Efficacy

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Abstract

This study was conducted to determine the relationship between secondary school students' Digital Gaming Addictions and their speaking self-efficacy. In this study, which was structured in the relational survey model, the relationship between students' digital game addictions and speaking self-efficacy was examined according to the class and gender variables. Within the scope of the research, the *Digital Game Addiction Scale for Children* consisting of 24 items and the *Speaking Self-Efficacy Scale for Secondary School Students* consisting of 24 items were applied to 805 students studying in the 5th and 6th grades in the autumn term of the 2023-2024 academic year and who voluntarily participated in the study. According to the results of the research, it was determined that secondary school students' digital game addictions were low, and their speaking self-efficacy was at a medium level. In addition, the relationship between students' digital game addictions and their speaking self-efficacy was statistically significant, negative and low level. Accordingly, as students' digital game addiction increases, their speaking self-efficacy decreases.

Keywords: Digital game addiction, Speaking self-efficacy, Secondary school, Secondary school students

Introduction

The concept of digitalization began to appear in the literature in the last quarter of the 20th century (Wachal, 1971). The digital revolution, which started in the 1950s, played a crucial role in shaping technology through the use of devices and the internet. Digitalization has since been integrated into various areas such as education, healthcare, work, and entertainment, facilitated by technological innovations and electronic devices that permeate all areas of life (Brennen & Kreiss, 2016). In the digital age, digital games have become a common form of entertainment and interaction among young people. However, excessive and uncontrolled use of digital games has led to a serious problem such as Digital Gaming Addiction. This addiction can have detrimental effects on children, particularly in social, academic, and emotional aspects of their lives. One area of concern is its impact on communication skills, especially face-to-face communication, and speaking self-efficacy. Speaking self-efficacy refers to an individuals' confidence in their speaking and communication abilities. It enables people to be more successful in social interactions and express their thoughts and feelings more clearly. However, Digital Gaming Addiction can negatively influence these social interactions and communication skills. Long-term gaming habits may reduce face-to-face communication and lead to social isolation. Understanding the effects of Digital Gaming Addiction on speaking self-efficacy is crucial in addressing the addiction and fostering the development of healthy communication skills in individuals.

Gaming and Gaming Addiction

Every game is, first and foremost, a voluntary act (Huizinga, 2015). In his work *Homo Ludens*, Huizinga defines play as involving autonomy, freedom, limitation, rules, imaginary or secondary reality, tension, and pleasure. According to Huizinga, play is not only an activity for children but also a cultural activity in which adults participate. Play holds an important role in many aspects of social and cultural life -such as art, law, war, and sports- and serves to establish communal bonds. In this respect, play has a cultural and social dimension (Huizinga, 1955).

Since the earliest known times, play has been a fundamental tool for socialization and for helping individuals integrate harmoniously into society. As Anachury et al. (2023) note, “Humans need play to learn their traditions and to participate effectively in different social roles.” In the 21st century, socialization through games increasingly occurs in digital environments. With the spread of digital technology, communication tools have diversified and become more accessible. People now spend more time in digital spaces and have the opportunity to reach wider and more diverse audiences via digital platforms. Additionally, the digital environment can reduce the anxiety that some individuals experience in face-to-face communication, allowing them to socialize more comfortably -one of the reasons socialization has shifted to digital realms. Games and gamified activities can also enhance the efficiency of learning and teaching (McGonigal, 2011; Kapp, 2012). The generation known as digital natives, born and educated after the digital revolution, grew up with constant access to computers and the internet (Prensky, 2001; Pertsev et al., 2023). Digital tools have become powerful means of communication, and digital natives have mastered this environment, with their need for play increasingly fulfilled through digital platforms. A game is defined as a system where players engage in an artificial conflict governed by rules with measurable outcomes (Salen & Zimmerman, 2003). Digital games allow players to interact and communicate towards a shared goal. When played in moderation, digital games are generally not harmful (Yönet Demirhan et al., 2023). Moreover, online games offer players the chance to connect with others from different cultures, broadening their social interactions.

The uncontrolled increase in time spent with digital tools has become one of the problems facing humanity since the digital revolution (Young, 2004; Horzum et al., 2008; Villani et al., 2018). Digital Gaming Addiction, characterized by excessive time spent on digital games and a loss of control over gaming habits, can also impact the development and use of language skills. Addicts often neglect other activities and feel a persistent compulsion to play games. Artificiality is a defining feature of games (Alexiou et al., 2012), and excessive gaming can have negative

effects on both social and academic life. One particular area of concern is the impact of gaming addiction on speech, a key component of communication and language skills that typically relies on face-to-face interactions. Addiction, which can distance individuals from real-world interactions and weaken their communication abilities, may reduce a person's speaking self-efficacy and create challenges in social situations. Socializing through games in digital environments has the potential to turn Digital Gaming Addiction into a global public health problem, particularly among adolescents.

Digital games have become a common form of entertainment and leisure for both young people and adults, but they can also lead to addiction and negatively impact social skills (Gentile, 2011). Communication, typically achieved through speaking, is often diminished as digital games are frequently played alone. This reduced social interaction may hinder the development of communication skills, particularly speaking abilities (Miezah et al., 2020). Digital game playing can be considered an addiction when individuals, whose communication skills have deteriorated, begin to experience communication problems (Haagsma et al., 2012). There is also evidence suggesting a relevance between Digital Gaming Addiction and loneliness (Chen & Leung, 2016), as well as low intra-family communication (Tuncay et al., 2023). Additionally, Digital Gaming Addiction is said to differ by gender, with men more commonly experiencing negative effects on daily routines, an increase in risky behaviors, and greater emotional fluctuations compared to women (Brkljačić et al., 2019; Cengiz et al., 2020; Avcı et al., 2023).

Speaking Self-Efficacy

Speaking skills play an important role in success by enabling effective communication in all areas of life. Effective speaking is important for career and personal relationship development, solving problems encountered in daily life, utilizing persuasion and negotiation skills, and enhancing personal growth by boosting self-confidence. Through speech, individuals can express themselves fully and accurately during the communication process (Crisianita & Mandasari, 2022).

Language skills are first acquired through family and the immediate environment before being systematically developed through formal education. During the educational process, the goal is for individuals to acquire speaking skills that enable them to express their feelings and thoughts accurately and effectively, in accordance with the rules of the language.

The Relationship Between Speaking Skills and Self-Efficacy

Skill is defined as the ability to perform tasks that require a conscious learning process and repetitive practice after learning (Breivik, 2016). Speaking skill involves the integration of various elements, such as using language correctly and effectively, supporting verbal messages with body language, utilizing the speaking environment efficiently, making eye contact, controlling excitement, overcoming speech anxiety, feeling confident, and maintaining focus. For this performance to be effective, individuals must have high self-efficacy perceptions.

Self-efficacy perception is defined as "an individual's belief in their capacity to organize and successfully perform the activities necessary to achieve a certain performance" (Bandura, 1986). With high self-efficacy perceptions, individuals can set ambitious goals for tasks and plan more effective strategies (Zimmerman et al., 1992). Additionally, self-efficacy beliefs allow individuals to act decisively and develop adaptive behaviors when faced with challenges. As Schunk (1991) notes, individuals are more likely to succeed when they believe they have the ability and control needed to complete a task or activity. Thus, self-efficacy perception reflects an individual's belief in their competence rather than their actual level of competence. In this context, the positive or negative attitudes individuals hold about their speaking skills greatly influence their success in speaking. When individuals have positive attitudes, they tend to develop their speaking skills more easily and without anxiety. However, if their self-efficacy is low due to various factors, their speaking abilities may be negatively affected, and they may struggle to express themselves. Therefore, when teaching speaking skills, it is essential to foster positive attitudes and bolster self-efficacy by reducing anxiety levels. In fact, when

individuals' self-efficacy is high, their belief in their ability to tackle tasks increases, which in turn reduces pressure. This enables them to speak with greater confidence and perform effectively when discussing a subject.

Method

Research Model

This study, designed to determine the relationship between middle school students' Digital Gaming Addiction and their speaking self-efficacy, was structured using a relational survey model. In this context, the relationship between students' Digital Gaming Addiction and speaking self-efficacy was analyzed based on class and gender variables.

Research Group

The research group for this study consists of 5th and 6th-grade middle school students. The group was selected using a simple random sampling method. A total of 805 students, who voluntarily participated during the fall semester of the 2023-2024 academic year, formed the research group. Of these participants, 396 were male, 409 were female; 413 were in 5th grade, 389 were in 6th grade, and three students did not indicate their grade level.

Data Collection Tools

For the purposes of this study, two scales were used to assess students' Digital Gaming Addiction and speaking self-efficacy. The first was the "Digital Gaming Addiction Scale for Children," developed by Zekihan Hazar & Muhsin Hazar, and the second was the "Speaking Self-Efficacy Scale for Secondary School Students," developed by Sevil Hasırcı Aksoy, Mehmet Ali Arıcı, & Murat Kan. Both scales consist of 24 items each.

Data Collection and Analysis

The data for this study were collected by administering the "Digital Gaming Addiction Scale for Children" and the "Speaking Self-Efficacy Scale for Secondary

School Students" to 5th and 6th-grade students during the fall semester of the 2023-2024 academic year. The data obtained from these tools were then transferred to the IBM SPSS Statistics 21 program to analyze the students' Digital Gaming Addiction and speaking self-efficacy. To assess whether the data were normally distributed, the skewness and kurtosis values of the items were calculated, ranging between -1.5 and +1.5, indicating normal distribution. The homogeneity of the data was tested using Levene's statistic, and the results confirmed that the item variances met the homogeneity condition. Therefore, parametric tests were used for data analysis. The following statistical methods were employed: independent group t-tests, Pearson product-moment correlation analysis, and simple linear regression analysis. Additionally, descriptive statistics, including standard deviation, arithmetic mean, frequency, and percentage, were utilized. The significance level for statistical analysis was set at $p \leq .05$.

Findings

Students' Digital Gaming Addictions and Speaking Self-Efficacy

Table 1. Descriptive Statistics of Students' Digital Gaming Addictions and Speaking Self-Efficacy

	n	$\bar{x}$	ss	Min	Max	Skewness	Kurtosis
Digital Gaming Addiction	805	2.26	.79	1	5	.73	.56
Speaking Self-Efficacy	805	2.54	.78	1	5	-.43	.18

Mean interpretation: 1.00-1.49: Very low; 1.50-2.49: Low; 2.50-3.49: Moderate; 3.50-4.49: High; 4.50-5.00: Very high.

According to *Table 1*, it is observed that the average score for students' Digital Gaming Addiction is low ($\bar{x} = 2.26$). This suggests that the students are not highly addicted to digital games. Similarly, the mean score for students' speaking

self-efficacy is also low ($\bar{x}$ = 2.54), indicating that the students generally lack strong speaking self-efficacy.

Investigation of Students' Digital Gaming Addictions and Speaking Self-Efficacy According to Gender and Grade Level Variables

Table 2. Independent Groups T-Test Results of Students' Digital Gaming Addictions and Speaking Self-Efficacy Scores According to Gender Variable

	Gender	*n*	$\bar{x}$	*ss*	*t*	*p*
Digital Gaming	Male	396	2.43	.81	6.44	.00*
Addiction	Female	409	2.08	.73		
Speaking Self-	Male	396	3.59	.81	1.88	.06
Efficacy	Female	409	3.48	.75		

df=803, *p<.01

According to *Table 2*, students' Digital Gaming Addiction scores show a significant difference based on gender (p < .05), with male students having higher addiction scores. However, when examining students' speaking self-efficacy scores, no significant difference is observed based on gender (p > .05).

Table 3. Independent Groups T-Test Results of Students' Digital Gaming Addictions and Speaking Self-Efficacy Scores According to Grade Level Variable

	Grade Level	*n*	$\bar{x}$	*ss*	*t*	*p*
Digital Gaming	5th Grade	413	2.18	.78	-2.71	.01*
Addiction	6th Grade	389	2.34	.80		
Speaking Self-	5th Grade	413	3.56	.77	.66	.51
Efficacy	6th Grade	389	3.52	.80		

df=800, *p<.05

According to *Table 3*, students' Digital Gaming Addiction scores show a significant difference based on grade level (p <.05), with 6th graders having higher

scores. However, when examining students' speaking self-efficacy scores, no significant difference is found based on grade level (p>.05).

The Relationship Between Students' Digital Gaming Addiction and Speaking Self-Efficacy

Table 4. Pearson Product-Moment Correlation Analysis Results for the Relationship Between Students' Digital Gaming Addictions and Speaking Self-Efficacy

	Digital Gaming Addiction	Speaking Self-Efficacy
Digital Gaming Addiction	1	-.26*
Speaking Self-Efficacy		1

n=805, *p<.01

According to the data in *Table 4*, there is a significant negative, low-level relationship between students' Digital Gaming Addiction scores and their speaking self-efficacy scores (r = -0.26). This indicates that as digital gaming addiction increases, speaking self-efficacy tends to decrease.

Findings on the Predictive Level of Students' Digital Gaming Addictions on Speaking Self-Efficacy

Table 5. Results of Simple Linear Regression Analysis Between Students' Digital Gaming Addiction and Speaking Self-Efficacy

Speaking Self-Efficacy	*B*	*SHB*	*β*	*t*	*R*	R^2	*F*	*p*
Constant	4.12	.08		51.34				
Digital Gaming Addiction	-.24	.03	-.26	-7.69	.26	.07	59.16	.00

n=805**p*<.001

According to *Table 5*, digital gaming addiction is a statistically significant predictor of speaking self-efficacy. Digital gaming addiction accounts for 7% of the variance in speaking self-efficacy ($F_{(1, 804)}$=59.16, p<.001, R=.26, R^2=.07), meaning that 93% of the variance in speaking self-efficacy is attributable to other factors. The data show that a 1-unit increase in digital gaming addiction leads to a -0.24 unit decrease in speaking self-efficacy. Based on the results of the simple linear regression analysis, the regression equation predicting speaking self-efficacy is as follows:

Speaking Self-Efficacy = (-0.24 x Digital Gaming Addiction) + 4.12

Conclusion and Discussion

The results of this study indicate that students' digital gaming addiction is low ($\overline{x}$ = 2.26), while their speaking self-efficacy is at a medium level ($\overline{x}$ = 2.54).

When examining the relationship between students' digital gaming addiction and speaking self-efficacy, it is evident that there are gender differences in digital gaming addiction, with boys showing higher levels of addiction compared to girls. This finding aligns with Lee et al. (2013), who reported that boys are 2-3 times more likely to be at risk for game addiction and engage in gaming more than girls. Similarly, research by Chiu et al. (2004) supports the existence of a relationship between gender and game addiction. Studies conducted by Johansson & Götestam (2004), Horzum (2011), Huanhuan & Su (2013), Demir (2024), and Şimşek & Karakuş Yılmaz (2020) consistently found that boys play games more than girls. This gender disparity may be influenced by the predominance of male characters in digital games, which are often designed to appeal to male players (Balıkçı, 2018). Additionally, Atak (2020) notes that boys generally exhibit greater interest in technological tools and enjoy spending time with games, reflecting differences in affective characteristics. In contrast, girls tend to prioritize playing with friends and prefer games that allow for social interaction (Atak, 2020).

Additionally, as noted by Onay & Kıylıoğlu (2021), the fact that men often attain identities such as status and recognition more prominently in games may contribute to higher gaming frequency among male players. However, when analyzing speaking self-efficacy based on gender, no significant differences were found among participants. Similar studies on speaking self-efficacy have also reported no significant gender differences (Sallabaş, 2012; Alan, 2021; Kemiksiz, 2022; Koosha et al., 2011). Therefore, while males exhibit higher levels of digital gaming addiction, this does not appear to negatively impact their speaking self-efficacy.

The study indicates that age significantly affects the relationship between digital gaming addiction and speaking self-efficacy, with addiction levels increasing as age rises. This finding aligns with the work of Hazar et al. (2020), Öncel & Tekin (2015), and Aydoğdu (2018), who examined digital gaming addiction levels in children across various variables and found significant differences correlated with increasing age. Other studies have also shown that children tend to become more addicted to games as they grow older (Şimşek & Karakuş Yılmaz, 2020; Şahin & Tuğrul, 2012; Erboy & Akar Vural, 2010). However, Yılmaz (2010) found that grade level did not significantly influence the gaming addiction tendencies of 6th and 7th-grade students. Similarly, Taş et al. (2014) and Keser & Esgi (2012) concluded that there was no significant difference between grade level and gaming addiction.

When analyzing students' speaking self-efficacy in relation to age levels, it becomes evident that there are no significant differences among them. Dilekmen et al. (2008) and Yılmaz & Çimen (2008) found that speaking self-efficacy did not demonstrate significant variation as age increased. Conversely, Demir (2017) determined that speaking self-efficacy actually decreased with advancing age. Similarly, Kemiksiz (2022) found that self-confidence in speaking was more favorable among lower-grade students.

When examining the relationship between digital gaming addiction and speaking self-efficacy, it was found that as children's digital gaming addiction increases, their speaking self-efficacy decreases. Consequently, as children become addicted to digital games, they experience a decline in speaking self-efficacy, leading to disconnects in socialization and communication. Indeed, digital games negatively impact individuals' ability to establish and maintain social relationships, potentially causing these relationships to deteriorate (Young, 2004). Horzum et al. (2008) concluded that those who spend excessive time playing computer games tend to neglect their social relationships. Similarly, Rahman and Unzum (2023) found that game addicts have limited participation in socio-cultural activities. Karatekin et al. (2012) observed that students' communication skills diminished as their duration of computer use increased. Furthermore, Kinati et al. (2023) reported that excessive addiction to digital games adversely affected face-to-face communication skills.

When examining the relationship between digital gaming addiction and speaking self-efficacy, a significant predictive relationship emerges. Specifically, a one-unit increase in digital gaming addiction corresponds to a decrease in speaking self-efficacy. Consequently, digital games negatively impact students' speaking self-efficacy. The study reveals that as children focus more on digital games and their addiction levels rise, their speaking self-efficacy declines. Weinstein (2010) found that computer and video game addiction adversely affects daily life, diminishes communicative competencies, and induces anxiety. Similarly, Purnama et al. (2018) concluded that digital gaming addiction leads to poor communication skills and reduces the desire for social interaction through speech. As socialization decreases and time spent on computer games increases, individuals may experience heightened anxiety and reluctance to speak. This indicates a negative relationship between digital gaming addiction and the speaking process, which this study specifically addresses through the lens of speaking skills. Notably, there is a lack of in-depth research on the connection between digital gaming addiction and speaking skills; thus, this study evaluates the effects of digital gaming addiction on

speaking skills across various dimensions to fill this gap in the literature. Ultimately, it was determined that digital gaming addiction has a detrimental effect on speaking skills and negatively influences speaking self-efficacy.

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