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THE RELATIONSHIP BETWEEN SECONDARY EDUCATION STUDENTS' DIGITAL ADDICTION LEVELS AND THEIR INQUIRY SKILLS

Abstract: The aim of this study is to determine the relationship between high school students' digital addiction levels and their inquiry skills. The sample of the study consists of 319 9th, 10th, 11th, and 12th grade high school students chosen by random sampling. Of these students studying in Sivas province schools of Turkey, two are Anatolian High School, and one is an Anatolian Imam Hatip (Religious) High School. 190 of the students are girls (59.6%), and 129 are boys (40.4%). Data were collected through the "Digital Addiction Scale (DAS)" developed by Dilci (2019) and the "Inquiry Skills Scale (ISS)" developed by Aldan Karademir and Saracaloglu (2013). In analyzing the data, the arithmetic mean and standard deviation values of the scores obtained from the scales were found, and Pearson's correlation analysis and simple linear regression analysis tests were used. The study detected negative significant relationships, albeit low, between the DAS sub-dimensions of deprivation, impulsivity, underperformance, low self-perception, and social isolation and all the sub-dimensions of ISS (i.e. acquiring knowledge, controlling knowledge, and self-confidence). There was also a low negative significant relationship between the overall DAS and ISS scores of the high school students. Finally, digital addiction levels were determined to explain 5% of the variance in the high school students' inquiry skills.

Keywords: Digital Addiction, Inquiry Skills, Inquiry-Based Learning, Technology Addiction.

INTRODUCTION

The usage rate and area of the internet has increased as a result of the rapid advancement, development, and spread of technology. Today, advances in the field of communication have introduced new communication tools and many new concepts such as new media, internet, social media, social networks, and internet games into the media dictionary. These new concepts have paved the way for differentiation in sociological, psychological, cultural, global, industrial, and economic fields as well. Communication tools often change individuals in psychological terms. The changes in society and individuals lead to addiction and even more serious states without even realizing (Guney, 2017: 208).

Turkey ranks 16th in the list of countries spending the longest time on the internet, and daily average time spent on the computer is over five hours while daily average duration of staying online on mobile devices is three hours. In this period, approximately three hours are spent on

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social media. There are 48 million social media users in Turkey, and almost 88% of them access to these channels by their mobile devices (We Are Social, 2017). It would not be wrong to say that the use of technology is now among the indispensable elements of life in Turkey, where the average rate of watching TV is 4.5 hours a day (The Ministry of Family and Social Policies of Turkey, 2013; quoted in Ertemel and Aydin, 2018).

Digital tools and applications are very important in our daily life. These technologies, which make our lives easier when used appropriately, can cause negative effects, especially on children and young people, when not used appropriately. Too much time aimlessly spent on digital tools not only prevents children and young people from socializing but also causes physical and mental disorders. Among these disorders, one of the most important one is addiction, which is described as an overwhelming desire to repeat a certain action. With technological tools and applications being an indispensable part of our lives, the issue of digital addiction has become one of the most important problems of our day. Digital addiction, which is basically defined as addiction to digital tools and applications, includes the negative effects of technological tools and applications on our daily life, internet addiction, mobile phone addiction, social media addiction, and digital game addiction (Arslan, Kirik, Karaman, Cetinkaya, 2015: 35).

Digital Addiction

Today, internet, social media, smartphones, and digital games are used extensively. Though the literature review shows that discussions on addiction involve internet addiction (Arisoy, 2009; Bat and Kayacan, 2016; Griffiths, 2000; Young, 2010), social media addiction (Ciftci, 2018; Balci and Baloglu, 2018), smartphone addiction (Kuyucu, 2017; Mert and Ozdemir, 2018), digital game addiction (YalcinIrmak and Erdogan, 2015; Goldag, 2018), technology addiction (Ertemel and Aydin, 2018; EryilmazandCukuluoz, 2018), a more general and comprehensive concept, digital addiction, is used to refer to them as the causes, symptoms, and results of all of them are the same (Utma, 2019). Digital addiction occurs when users are in excessive interaction with the digital devices of the age, direct their attention to these devices and technologies first and foremost and at an alarming level, and this situation negatively affects their well-being (Vaghela, 2016).

Addiction is the state of feeling an irrepressible desire to repeat a certain action although it harms one's psychological and physiological health or social life. First of all, behavioral disorders resulting from consuming tobacco, cigarettes, alcohol, heroin, cocaine, and various volatile substances emerged as a result of substance addiction (Kocak et al., 2015; quoted in Arslan, Kirik, Karaman, Cetinkaya, 2015: 35). Addiction is described as a situation in which the person loses control over an action or an object s/he uses and fails to continue his/her life without it. In other words, willpower is not in effect in use and behavior, and the person keeps the addicted use or behavior whether s/he wants or not. Such use and behavior occupies a significant part of life, and, excepting the work and relations the person has to engage in, s/he spends most of his/her time and physical energy on the substance or action s/he is addicted to (Kodaman and Dinc, 2016; quoted in Goldag, 2018).

Internet addiction can also be referred to as "excessive internet use", "inappropriate internet use", or "pathological internet use". Among the main indicators of internet addiction are intense use of the internet, desire to be constantly on the internet, inability to avoid the desire to be on the internet, not enjoying the time not spent on the internet, being nervous and

aggressive when deprived of the internet, disengagement from the social environment and family, and the aggression this creates (Arisoy, 2009; quoted in Arslan, Kirik, Karaman, Cetinkaya, 2015: 35).

In the psychiatric literature, game addiction has been described as an impulse control disorder with symptoms such as "inability to control the playing time", "loss of interest in other activities", "continuing to play despite its negative consequences", and "feeling psychological deprivation when unable to play". Although digital game addiction is not yet accepted as a form of mental illness, it can be said that it is important to scrutinize the problem considering the increase in applications to psychiatry clinics due to accompanying problems, families' search for support and solutions, the evidence in which researchers reveal its similarities with other addiction types, and its prevalence rates detected. Research has shown that the family environment of adolescents and young adults is determinant in their socializing and acquiring positive/conscious behaviors. Previous studies report that disorders such as internet addiction and digital game addiction develop more in environments with family conflicts (Feng et al., 2003;Ogel, 2012), whereas good/strong parent-child relationships reduce the problem (Chiu et al., 2004; Jeong and Kim, 2011). Adolescents can also use the internet and digital games as a means of rebellion against their parents and society straining them. Therefore, the basic principle in the formation of conscious and controlled internet and digital game usage behaviors in young people is to develop trust, democracy, support, strong communication, and positive parent-child relationship in the family (quoted in YalcinIrmak and Erdogan, 2015).

To make a comprehensive, common definition of digital addiction that includes addictions such as internet addiction, social media addiction, and smartphone addiction, it could be described as overusing internet-based digital tools and platforms, inability to resist the desire to use, postponing or neglecting daily tasks due to excessive use, having difficulty in communicating with other people because of excessive use, using the digital environment as a means of avoiding negative emotions and difficulties of life, stress and aggression in cases where there is no or reduced use, and lying to those around about the duration and dosage of use (Savci and Aysan, 2017). In addition to all this, Guney (2017) indicates the following among the symptoms of digital addiction: feeling of guilt due to the excessive time spent in digital environments, pressure of conscience because of not fulfilling the tasks that need to be done, the continuous check of social media accounts, desire to be on the internet all the time, and introversion due to problems of communication with the environment.

A digital addict makes searches on the internet and uses his/her mobile phone innocently in the beginning, but then s/he starts to feel discontent with the time s/he spends on them. This can be considered as the first stage in addiction. The second stage is the constant feeling of being deprived of the internet and digital devices. In the last stage of addiction, the person realizes that s/he is addicted and s/he is harmed by it, cannot control the situation despite his/her efforts to overcome it, increases the duration of use even more, and gradually gets away from social environments (Polat, 2017).

One of the most obvious reasons of digital addiction is the individual's desire to establish social relationships and socialize (Seferoglu and Yildiz, 2013). The desire to socialize also includes factors such as being included in a certain social group, meeting the need to like and be liked, and having social relationships that one fails to have in real life in the virtual world. The fact that feelings and thoughts that cannot be expressed in real life can be articulated in the virtual environment more comfortably thanks to the freedom the latter provides meets the socialization needs of people, thereby satisfying them and making them feel pleasure. The

sense of satisfaction and the pleasure taken further increase digital addiction and further distance individuals from the real world (Guney, 2017).

Inquiry Skill

Inquiry skill involves an individual's trying to analyze the things that arouse his/her curiosity by inquiring them inside or outside of themselves. When individuals get in a scientific interaction with the world, they find themselves in an effort to observe, ask questions, formulate hypotheses, predict, search, interpret, and communicate. This is true for children, too. What arouses a child's curiosity pushes him/her to search and discover. For children, the process of asking questions, investigating events, collecting evidence, and solving problems begins when they realize that they can find something for themselves. In this process, the task of the teacher is to help children learn the skills that are necessary to plan and conduct inquiry effectively, with an awareness of the parts that make up the whole (Ash, 2000; quoted in AbaliOzturk, Bilgen, Bilgen, 2017).

According to many educators, inquiry-based learning is a learning and teaching method that is based on student questions, ideas, and analyses. It is important to define inquiry-based learning from both the student and the teacher perspectives.
-   From the student perspective, inquiry-based learning focuses on delving into an open question or problem. They should apply evidence-based reasoning and creative problem-solving to arrive at a conclusion they need to defend or present.
-   From the teacher perspective, inquiry-based teaching focuses on moving students beyond general curiosity to areas of critical thinking and understanding. Teachers should encourage students to ask questions and support them throughout the research process by making them understand when to begin and how to structure a research activity (Guido, 2017).

"Inquiry" is defined as "a seeking for truth, information, or knowledge -- seeking information by questioning." Individuals go through the process of inquiring from their birth to their death. This is true though they may not ponder on the process. Babies begin to make sense of the world by inquiring. From birth, babies observe the faces approaching them, grasp objects, put things in their mouths, and turn to sounds. The inquiry process begins with collecting information and data by applying human senses such as sight, hearing, touch, taste, and smell (https://www.thirteen.org/edonline/concept2class/inquiry/index.html).
Guido (2017) mentions 4 types of learning in inquiry-based learning.

Four Inquiry-Based Learning Types
There are different types of inquiry-based learning that fit different grades:
• Confirmation Inquiry - You give students a question, the answer to this question, and the method to reach that answer. Their purpose is to learn how a particular method works and to develop research and critical thinking skills.
• Structured Inquiry - You provide students with an open question and a research method. Students should use the method to draw an evidence-based conclusion.
• Guided Inquiry - You give students an open question. Students often design research methods in groups to arrive at a conclusion.
• Open Inquiry - You give students time and support. Students put forward the original questions they have delved into in their own way and finally present their results for discussion and extension.

While inquiry skill, which is one of the common basic skills in almost all of the new curricula developed by the Ministry of National Education of Turkey (MEB), is often referred to as "research-inquiry" skill in the curricula, it can be defined as a process involving noticing and comprehending the problem by asking in-depth questions, planning research on what to do and how to do it in order to solve the problem, predicting results, taking possible problems into consideration, testing the result, and developing ideas (Aldan Karademir and Saracaloglu, 2013).

The MEB Social Studies Curriculum (2009) presents the stages of research skill, critical thinking skill, and problem-solving skill that should be acquired by students as below. Although "inquiry skill" is mostly put under "research skill" as mentioned above, we can say that it is intertwined with "critical thinking skill" and "problem-solving skill" and includes these skills. Students use skills and skills-related acquisitions to process the information about the objects, events, and materials they encounter.

<u>Research</u>
- Asking questions
- Observing
- Predicting
- Collecting data
- Saving data
- Organizing data
- Reporting data
- Presenting research results

<u>Critical Thinking</u>
- Distinguishing between what one knows and what one does not
- Determining the accuracy of what one knows
- Questioning the causes of phenomena
- Establishing relationships between events and phenomena
- Determining the accuracy and integrity of the information presented
- Identifying illogicalities and incorrect reasoning in the information presented
- Recognizing the difference between facts and opinions (phenomena and ideas)
- Identifying rational criteria for assessing the value or appropriateness of an action or behavior
- Expressing the logic behind ideas and opinions
- Making judgments and reaching logical conclusions

<u>Problem-Solving</u>
- Noticing the problem
- Determining who the problem belongs to
- Creating appropriate questions to clarify the problem
- Defining and explaining the problem
- Recognizing problem-specific information sources
- Determining solution options for the problem
- Considering the possible consequences of each solution
- Choosing the most suitable way

- Determining whether help is needed in solving the problem
- Applying the appropriate solution

Correlational researches on inquiry skills include Aldan Karademir, Cayli, and Deveci's (2019) study titled "An Investigation of Pre-Service Teachers' Inquiry Skills and Curiosity Levels", AbaliOzturk, Bilgen, and Bilgen's (2017) study titled "Relationship between Inquiry and Self-Directed Learning Skills: An Investigation on the Elementary Education Prospective Teachers", and Arseven, Dervisoglu and Arseven's (2015) study titled "The Relation between Questioning Skills and Critical Thinking Tendencies of History Teacher Candidates." Correlational researches on digital addiction are also limited: Cakici's (2018) master's thesis titled "Examination of the Relationship between Digital Game Addiction and Forms of Expressing Anger in Adolescents", Yavuz's (2018) study titled "Investigation of the Levels of Perceived Social Support and Internet and Game Addiction in Gifted Students", and Savci and Aysan's (2017) study titled "Technological Addictions and Social Connectedness: Predictor Effect of Internet Addiction, Social Media Addiction, Digital Game Addiction and Smartphone Addiction on Social Connectedness". To the best of our knowledge, there is no study investigating the relationship between inquiry skill and digital addiction. Examining these two variables, which are in mutual interactions with each other, is considered important for revealing the relationship of digital addiction with inquiry learning.

The aim of this study is to examine the relationship between high school students' digital addiction levels and their inquiry skills. Sub-problems of the study are as follows:
1. What are the mean scores obtained by the high school students from the overall and the sub-dimensions of the Digital Addiction Scale?
2. What are the mean scores obtained by the high school students from the overall and the sub-dimensions of the Inquiry Skill Scale?
3. Is there a significant relationship between the high school students' digital addiction levels and their inquiry skills?
4. Do the high school students' digital addiction levels significantly predict their inquiry skills?

METHOD

Resrach Model

This study, which was conducted to determine the linear and predictive relationship between the high school students' digital addiction levels and their inquiry skills, employed the correlational survey model. Correlational survey models are models that aim to determine the covariance between two or more than two variables and the direction and degree of such variation (Karasar, 1999). It has two different types: exploratory and predictive. In studies conducted for predictive purposes, it is possible to see how much of the variance in dependent variables is explained by the variables in question (Karakaya, 2012: 68).

Universe and Sample

The population of the study is composed of students attending secondary education institutions affiliated to Turkey's Sivas Provincial Directorate of National Education in the fall semester of the 2019-2020 academic year. The sample, on the other hand, consists of 319 9th, 10th, 11th, and 12th grade high school students randomly chosen from across the Sivas

province. Of these students, two are from Anatolian High School, and one is from Anatolian Imam Hatip (Religious) High School (two sections from each). 190 of the students are girls (59.6%), and 129 are boys (40.4%).

Data Collection Tools

The study used the "Inquiry Skill Scale (ISS)" developed by Aldan Karademir and Saracaloglu (2013) to measure the high school students' inquiry skill levels and the "Digital Addiction Scale (DAS)" developed by Dilci (2019) to determine their digital addiction levels.

DAS consists of 40 items. Its sub-dimensions are deprivation (10 items), impulsivity (15 items), underperformance (5 items), low self-perception (5 items), and social isolation (5 items). It is a 5-point Likert-type scale. In the scale graded from the highest to the lowest (from 5 to 1), 5 refers to the "Strongly Agree" degree and 1 to the "Strongly Disagree" degree. As the item scores increase from 1 to 5, the level of addiction increases in direct proportion. In evaluating the arithmetic means of the answers given by the participants to the research questions, the following criteria were taken as basis: 1.00-1.79= "Strongly Disagree-Very Weak Addiction", 1.80-2.59= "Disagree-Weak Addiction", 2.60-3.39= "Neutral-Moderate Addiction", 3.40-4.19= "Agree-High Addiction", 4.20-5.00= "Strongly Agree-Very High Addiction". While the Cronbach's alpha reliability coefficient of the scale had been determined to be .955 in the scale development studies, the reliability coefficient was found to be .925 in the present study.

ISS, developed by Aldan Karademir and Saracoglu (2013) for high school students, consists of 14 items under 3 sub-dimensions: "Acquiring Knowledge", "Controlling Knowledge", and "Self-Confidence". In factor analysis, principal component analysis was performed first to determine the factors. A structure with 14 factors came out at the end of this analysis. In the stable structure formed as a result of the exploratory factor analysis, fourteen items in the scale were grouped under three factors. Of the 14 items in the scale, 6 were under the "Acquiring Knowledge" factor, 5 under the "Controlling Knowledge" factor, and 3 under the "Self-Confidence" factor. The Cronbach's alpha values were calculated for each factor in the scale as well as for the overall scale. Cronbach's alpha reliability coefficients were found to be .76 for "Acquiring Knowledge", .66 for "Controlling Knowledge", .82 for "Self-Confidence", and .82 for the overall scale. The scale items were graded from the highest to the lowest (from 5 to 1). The items in the form were graded as follows: Always= 5, Usually= 4, Sometimes= 3, Rarely= 2, Never= 1.

Data Analysis

All of the data collected through the above-mentioned data collection tools were analyzed via SPSS 14. The Kolmogorov-Simirnov test was applied and skewness and kurtosis values were checked to determine whether the data had normal distribution. As a result, the scores obtained by the high school students from DAS (Skewness= .136; Kurtosis = -.497) and ISS (Skewness= .050; Kurtosis= -.375) were found to have normal distribution. The mean scores obtained by the high school students from the said two scales and the relevant standard deviations were determined with regards to the first two sub-problems of the study: "What are the mean scores obtained by the high school students from the overall and the sub-dimensions of the DAS?"; "What are the mean scores obtained by the high school students from the overall and the sub-dimensions of the ISS?" The data concerning the third sub-

problem of the study ("Is there a significant relationship between the high school students' digital addiction levels and their inquiry skills?") were acquired through Pearson's correlation analysis as the variables were obtained with an interval scale and the scores obtained from both scales had normal distribution. Lastly, the data related to the fourth sub-problem of the study ("Do the high school students' digital addiction levels significantly predict their inquiry skills?") were obtained through simple linear regression analysis.

FINDINGS

This section includes statistical findings regarding the sub-problems of the study. Descriptive statistics regarding the **first sub-problem** of the study ("What are the mean scores obtained by the high school students from the overall and the sub-dimensions of the DAS?") are presented in Table 1.

Table 1. *Descriptive Statistics of the High School Students' Digital Addiction Levels*

Sub-Dimensions	N	$\overline{X}$	Sd.
Deprivation	319	2.36	.78
Impulsiveness	319	2.57	.71
Underperformance	319	2.50	.91
Low Self-Perception	319	2.56	.79
Social Isolation	319	2.83	.81
Total	319	2.54	.67

As showed in Table 1, the mean scores obtained by the high school students from the DAS sub-dimensions of deprivation (x_{mean}= 2.36), impulsivity (x_{mean}= 2.57), underperformance (x_{mean}= 2.50), and low self-perception (x_{mean}= 2.56) are in the 1.80-2.59 range. This score range refers to weak addiction. Therefore, it can be said that the students have weak addiction in these sub-dimensions. The students' mean score in the sub-dimension of social isolation (x_{mean}= 2.83) is in the 2.60-3.39 range. Since this score range indicates moderate addiction, it can be said that the students have moderate addiction in the social isolation sub-dimension. As the mean score obtained by the high school students from the overall DAS (x_{mean}= 2.54) is also within the 1.80-2.59 score range, it can be said that the students generally have weak addiction.

Descriptive statistics regarding the **second sub-problem** of the study ("What are the mean scores obtained by the high school students from the overall and the sub-dimensions of the ISS?") are presented in Table 2.

Table 2. *Descriptive Statistics of the High School Students' Inquiry Skill Levels*

Sub-Dimensions	N	$\overline{X}$	Sd.
Acquiring Knowledge	319	3.21	.74
Controlling Knowledge	319	3.42	.78
Self-Confidence	319	3.67	.86
Total	319	3.38	.68

As showed in Table 2, the mean scores obtained by the high school students from theISS sub-dimension of acquiring knowledge (x_{mean}= 3.21) and from the overall scale (x_{mean}= 3.38) were in the 2.60-3.39 score range. This score range refers to moderate inquiry skill. The mean scores obtained from the controlling knowledge (x_{mean}= 3.42) and self-confidence (x_{mean}= 3.67) sub-dimensions are in the 3.40-4.19 score range. This indicates a high level of inquiry skill.

Therefore, it can be said that the high school students' inquiry skills are high in the sub-dimensions of the scale, but they are moderate in the overall scale.

The Pearson's correlation analysis statistics regarding the **third sub-problem** of the study ("Is there a significant relationship between the high school students' digital addiction levels and their inquiry skills?") are presented in Table 3.1 and Table 3.2.

Table 3.1. Pearson's Correlation Analysis Results of the Scores the High School Students Obtained from the Sub-Dimensions of DAS and ISS

DAS	Sub-Dimensions					
ISS	Sub-Dimensions	Deprivation	Impulsiveness	Underperformance	Low Self-Perception	Social Isolation
	Acquiring Knowledge	-.167**	-.189**	-.124*	-.163**	-.164**
	Controlling Knowledge	-.128*	-.181**	-.134*	-.191**	-.166**
	Self-Confidence	-.127*	-.161**	-.113*	-.173**	-.183**

N=319 p<0.05*p<0.01**

According to Table 3.1, there are significant relationships between the high school students' scores in the DAS sub-dimensions of deprivation, impulsivity, underperformance, and low self-perception and the scores they obtained from all sub-dimensions of ISS. Negative, low-level significant relationships were found between the scores obtained from the DAS social isolation sub-dimension and the scores obtained from the ISS sub-dimensions of acquiring knowledge, controlling knowledge, and self-confidence (r= -.164; r= -.166; r =-.183, p <0.01). Negative, low-level significant relationships were detected between the scores obtained from the DAS low self-perception sub-dimension and the scores obtained from the ISS sub-dimensions of acquiring knowledge, controlling knowledge, and self-confidence (r= -.163; r= -.191; r= -.173, p <0.01). Negative, low-level significant relationships were detected between the scores obtained from the DAS underperformance sub-dimension and the scores obtained from the ISS sub-dimensions of acquiring knowledge, controlling knowledge, and self-confidence (r= -.124; r= -.134; r= -.113, p< 0.05). Negative, low-level significant relationships were detected between the scores obtained from the DAS impulsivity sub-dimension and the scores obtained from the ISS sub-dimensions of acquiring knowledge, controlling knowledge, and self-confidence (r= -.189; r= -.181.; r= -.161, p <0.01). Negative, low-level significant relationships were detected between the scores obtained from the DAS deprivation sub-dimension and the scores obtained from the ISS sub-dimensions of acquiring knowledge, controlling knowledge, and self-confidence (r= -.167; r= -.128; r= -.127, p<0.05 and p<0.01).

Table 3.2. Pearson's Correlation Analysis Results of the Overall Scores the High School Students Obtained from the DAS and theISS

	N	X_{mean}	SS	r	p
DAS	319	2.54	.67	-.223	.000**
ISS	319	3.38	.68		

p<0.01 **

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According to Table 3.2, there is a negative, low-level significant relationship between the overall scores the high school students obtained from the DAS and the ISS (r= -.223; p<0.01). Simple linear regression analysis statistics related to the **fourth sub-problem** of the study, "Do the high school students' digital addiction levels significantly predict their inquiry skills?" are presented in Table 4.

Table 4. *Simple Linear Regression Analysis Results Related to the Degrees to Which the High School Students' Digital Addiction Levels Predict Their Inquiry Skills*

Model	R	R^2	F	B	Sd	Beta	t	p
Constant (a)				3.965	.147		26.99	.000
Digital Addiction Level	.223	.050	16.47	-.226	.056	-.223	-4.06	.000**

According to Table 4, digital addiction levels significantly explain the high school students' inquiry skills (R=.223; R^2=.050; F=16.47; p<0.01). Digital addiction levels explain 5% of the variance in the high school students' inquiry skills.

CONCLUSION AND DISCUSSION

Investigating the relationship between the high school students' digital addiction levels and their inquiry skills, the present study found a negative significant relationship, albeit low, between these variables. The results related to the sub-problems of the study are explained below one by one and discussed based on the literature.

1. For the first sub-problem of the study, the mean scores obtained by the high school students from the overall and the sub-dimensions of the DAS were examined. The students' opinions about the overall scale items concentrated at the "disagree" level. This reveals that the students have weak digital addiction. Their opinions related to the items under the sub-dimensions of deprivation, impulsivity, underperformance, and low self-perception again concentrated at the "disagree" level. This shows that the students have weak addiction in these sub-dimensions of the scale. Their opinions regarding the items under the social isolation sub-dimension of DAS concentrated at the "neutral" level, which indicates moderate addiction in this sub-dimension. The literature contains various studies on digital addiction. Eryilmaz and Cukurluoz (2018) examined high school students' digital addiction levels and concluded that the students had weak addiction in the game sub-dimension of the Digital Addiction Scale used in the study, strong addiction in the social media sub-dimension, and moderate addiction in the social life effect sub-dimension. They also found out that the boys had higher addiction levels than the girls. Arslan et al. (2015), conducting a study on high school and university students, showed that the boys had significantly higher addiction levels in the game addiction sub-dimension and the girls had significantly higher addiction levels in the social media sub-dimension. In terms of the variable of type of education, the high school students were determined to have a significantly higher level of addiction than the university level students in the game addiction sub-dimension. It was revealed that as the students' maternal education levels increased, their game addiction and social media addiction also increased significantly, while the variables of paternal education level and family monthly income did not cause a significant difference in any sub-dimension.

2. For the second sub-problem of the study, the mean scores obtained by the high school students from the overall and the sub-dimensions of the IIS were examined. The students' opinions about the acquiring knowledge sub-dimension and about the overall scale concentrated at the "sometimes" level. This reveals that the students have moderate inquiry

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skills. However, their opinions regarding the items under the controlling knowledge and self-confidence sub-dimensions of the scale concentrated at the "usually" level, which demonstrates that the students have high inquiry skills in these sub-dimensions. Contrary to the findings of the present study, Abali Ozturk, Bilgen and Bilgen (2017) detected pre-service teachers' inquiry skills (X= 3.71) to be "high".In that study, in general, high results were obtained in all sub-dimensions of the scale, and a value above the average was observed in the acquiring knowledge sub-dimension (X = 4.08). Similar results were found in studies conducted with pre-service teachers studying in different departments as well (Arseven et al., 2015). Bedir and Duman (2018)determined pre-service teachers' inquiry skills to be high in the acquiring knowledge and controlling knowledge sub-dimensions as well as in the overall scale, but moderate in the self-confidence sub-dimension. The pre-service teachers' inquiry skills did not differ in the sub-dimensions of acquiring knowledge and controlling knowledge by gender, but significantly differed in favor of the male pre-service teachers in the self-confidence sub-dimension.

3. For the third sub-problem of the study, the relationship between the high school students' digital addiction levels and their inquiry skills was examined. The Pearson's correlation analysis conducted to this end revealed a negative, low-level significant relationship between the overall scores the high school students obtained from the DAS and the ISS (r= -.223). Accordingly, as the high school students' digital addiction levels increased, their inquiry skills decreased at a certain level, albeit low; likewise, as their digital addiction levels decreased, their inquiry skills improved. This result was statistically significant. When the relationships between the sub-dimensions of DAS and the sub-dimensions of ISS were examined, negative, significant relationships, albeit low, were detected between the DAS sub-dimensions of deprivation, impulsivity, underperformance, low self-perception, and social isolation and all the sub-dimensions of ISS (acquiring knowledge, controlling knowledge, and self-confidence). To the best of our knowledge, the literature contains no study examining the relationship between digital addiction and inquiry skills. However, there are studies on the relationships between inquiry skills and curiosity, autonomous learning, and critical thinking skills. A positive, moderately significant relationship is reported between pre-service primary school teachers' inquiry skills and their autonomous learning skills (Abali Ozturk et al., 2017). Similarly, a positive, moderately significant relationship is reported between pre-service teachers' inquiry skills and their curiosity levels (Aldan Karademir et al., 2019). Aiming to determine the relationship between pre-service history teachers' inquiry skills and their critical thinking tendency levels, Arseven et al. (2015) found a positive, moderately significant relationship between their inquiry skills and curiosity levels. In her PhD dissertation titled "Effect of Collaborative Inquiry-Based Learning Environment on Creative Thinking, Inquiry Learning Skills, Attitudes towards Science and Technology Lesson," Kaplan Parsa (2016) found the experimental group's mean posttest scores obtained from the creative thinking test to be statistically significantly higher than those of the control group. Although the experimental group's posttest scores of perceived inquiry learning skills and attitude towards Science lesson were higher than those of the control group, such differences were not statistically significant.

Similarly, the relevant digital addiction literature includes studies dealing with explaining digital addiction, raising young people's and parents' awareness of this issue, drawing the framework for appropriate technology use, teaching the developmental harms of technology addiction, risk factors leading to technology addiction (Dinc, 2015), digital game addiction among adolescents and young adults (YalcinIrmak and Erdogan, 2015), digital addiction

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among high school and university students (Arslan et al., 2015), technology addiction in the digital economy and solution suggestions (Ertemel and Aydin, 2018), and so on. There are very few correlational studies on digital addiction (Savci and Aysan, 2017; Arseven, 2020).

4. For the fourth sub-problem of the study, whether the high school students' digital addiction levels significantly predicted their inquiry skills was investigated. The simple linear regression analysis showed that the high school students' digital addiction levels significantly explained their inquiry skills, albeit at a low level (R=.223 R2=.050; F=16.47; p< 0.01). The digital addiction levels explained 5% of the variance in their inquiry skills. As the students' digital addiction levels increased, their inquiry skills significantly decreased. Arseven (2020) found out that digital addiction levels explained 6% of the variance in the high school students' self-regulated learning skills. As the students' digital addiction levels increased, their self-regulated learning skills significantly decreased. This means that digital addiction not only creates psychological, social, or physiological problems for individuals, but also causes problems in the field of learning by causing a decrease in self-regulated learning skills. To conclude, based on the research findings, it can be said that digital addiction should be considered as a factor that negatively affects learning, though not very strongly.

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