HOW ARE PRIMARY SCHOOL STUDENTS' OPINIONS ABOUT EDUCATIONAL DIGITAL HEALTH GAMES?

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Abstract

In today's digital age, there are digital developments in every field. In education, which is one of the areas where digital developments are experienced, digital education tools are becoming widespread day by day. At this point, it is important to expand and develop educational digital games, which are the most popular and common digital tools used in education. The aim of the study to examine the perceptions and experiences of primary school students about educational digital games. The duration of the study is 15 weeks and a different game experience is created for the students every week. Students played and evaluated 15 different educational digital games for health education and shared their opinions. The model of the study is qualitative. Phenomenology, one of the qualitative research designs, was used. The sample of the study consists of primary school 4th grade students. In the study, student diaries and observation were used as data collection tools. Data from diaries and observations were obtained and evaluated in weeks. Content analysis was implemented in the analysis of the data obtained from the study. As a result of the study, it has been reached that primary school students have positive perceptions of educational digital games and they like educational digital games.

Keywords: Educational digital game, health, opinion, primary students

Introduction

It is stated that classical teaching methods are not effective enough on today's generation. Today, technology-based learning methods appear as an alternative to existing learning methods. New technological learning models and rapid information transfer from digital environments have become new ways of acquiring and processing information for the new generation. In this case, educators are faced with the situation of finding and applying new educational tools and methods in the face of this new trend (Al-Mashhadani & Al-Rawe, 2018). Digital technology is the use and application of information technology resources for the needs and problems of society. Today, in this direction, the internet, smart phones, computers and tablets etc. Digital technology devices, including With the development of technology, the use of computer or multimedia technologies in students' learning has become widespread. Studies show that technology-supported learning is effective on participants (Pivec, 2007; Abdulla, 2012; Chow et al., 2012). In this direction, it is tried to benefit from digital technology in health education, which is one of the most important issues concerning the society (Temple-smith et al., 2016). The rapid progress of technology and the fact that it is now accessible to all people has made digital games widespread (Prensky, 2012). Given that most students have mastered digital games, teachers can benefit from digital games to involve students in the learning process. In this direction, there is an increase in the use of digital games in the classroom (Neto et al., 2020). Digital games have become an industry in the world. Due to the high interest of the society, especially children and young people in these games, this sector is growing day by day. The generation of this age is referred to as the "player generation" (Beck and Wade, 2004).

Theoretical framework

Educational digital games

Digital games are digital technology products that are defined as "interactive content that provides personal or community entertainment". Digital games are fun digital experiences with imaginary goals. Digital games are defined as "systems that depend on certain rules, in which players get variable results or scores with effort" (Clark et al., 2016). Digital games are visual-based systems that are defined by rules, that can encourage interactive and virtual conflicts and entertainment (Salen & Zimmerman, 2012). Digital games can appeal to players of all ages and genders. Digital games are very popular, especially among young people. Almost all primary and secondary school children play digital games on computer, mobile or console (Ledoux et al., 2016; Thompson et al., 2018). In a study conducted by Sardone and Devlin-Scherer (2009), prospective teachers' perspectives on the use of digital games as an educational tool were investigated. 25 undergraduate 2nd year students participated in the study. In the study, pre-service teachers stated that the use of digital games in the course is a useful and exciting teaching method for teachers and will be well received by students. In addition, it was pointed out that digital games have the potential to attract students' attention, develop a positive attitude and focus towards learning, and encourage cooperation and competition. On the other hand, pre-service teachers also mentioned that the use of games can create a training problem in the current curriculum. In a study by Noraddin and Kian (2015), university teachers' perceptions of the potential benefits or deficiencies of digital games in learning and teaching in higher education institutions were investigated. An online questionnaire was applied to 273 teachers who participated in the study. As a result of the study, it was shown that the majority of university teachers have a positive perception of the use of digital games in higher education and their experience is the reason for this.

Digital game-based learning

The type of learning that brings game-based learning to the digital platform is called digital game-based learning. Digital game-based learning is a learning approach that transforms digital games into educational tools (Prensky, 2003; Van Eck, 2006). Digital game-based learning is not a new concept, it is a type of learning that brings game-based learning to a digital platform. Modernization in technology highlights digital game-based learning and makes it a popular learning tool in interdisciplinary learning (Byun & Joung, 2018; Chen, 2020). Digital game-based learning, similar to game-based learning, makes the learning environment fun and easy (Proulx et al., 2017). In digital game-based learning, learning content and computer games are brought together. Thus, students are at the center of learning and an immersive experience while playing, and they improve their knowledge and skills (Hwang et al., 2015; Hamari et al., 2016; Hsieh et al., 2016). Digital game-based learning provides an active learning environment with its complex structure and rapid feedback (Vandercruysse et al., 2013). In a study by Lay and Osman (2017), the effect of the Malaysian Chemistry Digital Games (MyKimDG) module on students' success and motivation in chemistry and 21st century skills was investigated. In the study, pretest and posttest were applied to 138 secondary school

students consisting of experimental and control groups. As a result of the study, it was found that the experimental group performed better in the chemistry achievement test and had higher self-efficacy and high productivity scores. In addition, it has been reached that students' being digital game designers can gain in-depth knowledge, develop 21st century skills and increase students' learning skills.

Literature Review

Looking at the studies in the literature, Chen (2019) developed a digital game about problem solving based on peer learning and intergroup competition in his study. In his study, 110 middle school students were randomly assigned to different game designs (individual or group; competition or no competition). The results show that students in peer and competition groups perform better than other groups in terms of conceptual knowledge and interest in the game. Park et al. (2019), a game with an award for learning English vocabulary was designed for 64 university students. The study shows that award-winning educational games provide a statistically significant increase in students' learning, motivation and participation levels. Beca et al. (2020), 28 high school students who participated in a study designed a digital game. Students participated in game design sessions using a toolkit for game design. As a result of the study, 10 functional digital game prototypes were created. Students mentioned the ease of use of the toolkit, its interesting approach to game design, and its possible contribution to more active learning. Dewantara et al. (2020) used a single-group pre-test and post-test design. Using the "Circuit Scramble.apk" game, the researchers looked at the post-game test scores of university physics students who took digital electronics courses. According to the post-test scores obtained, it was concluded that the game-based applications were effective. Based on these studies in the literature, the research problem of the study was determined as follows: "What are the perceptions and experiences of the participants about the digital health games developed in the study?"

Method

Study Model

The study is a qualitative research. Qualitative studies are a systematic approach to understanding the qualities or fundamental nature of any phenomenon, event or situation in a given context (Brantlinger et al., 2005). In this study, phenomenology, one of the qualitative research designs, was used. This type of approach allows us to examine deeply and in detail the events, situations or perceptions that we are aware of in daily life. In phenomenological studies, data sources are individuals or groups. Data are collected from the participants and descriptions and explanations are made. In this direction, themes are determined. For example; participants' perceptions of any situation, the meanings they attribute, or how they experience an event are closely examined. By analyzing the data obtained in phenomenological studies, definitions are made within the framework of themes and direct quotations are made (Cropley, 2002).

Study Group

The study group consists of 12 primary school 4th grade students. The criterion sampling model was used in the selection of the students participating in the study. In the criterion sampling method, predetermined criteria are taken as basis in the selection of the sample (Sandelowski, 2000). In this study, primary school teachers were met to determine the study group and their opinions were taken. It was decided that the age group should be 4th grade students in terms of digital game playing and development competence. In this direction, the 4th grade teachers were met again and their opinions were taken. Among the 4th grade students, students with an interest in digital games and a tendency to technological devices, observed by their classroom teachers in previous distance education lessons, were selected and included in the study on a voluntary basis.

Data Collection Tools

In the study, student diaries and researcher observation rubric were used as data collection tools and document analysis was carried out. Student diaries and observation rubrics were developed by the researchers and expert opinion was sought. Student diaries were filled by the students every week during the implementation process. Thus, the students' experience of playing and designing games in this process and their perceptions about this process were examined. With the game diaries developed by the researchers, it was aimed to examine the perceptions and thoughts of the students about the educational digital game playing and development process. Due to the small age group, there are a few guiding questions in the student diaries to be a guide. Observation provides an outside perspective to research; They are data collection tools that give an idea about the research process and participants. Research is more than just observation; refers to

collecting data using all senses (Haury, 2002). With the observation rubric developed by the researchers, it is aimed to examine the reactions of the students to educational digital games and the behaviors they exhibit while playing. For this reason, there are categories of desire to play in form, performance in the game, interest in the game, ability to play games, keeping diaries regularly. The researchers filled the observation form by observing the students each week of practice. To ensure the validity and reliability of the study; More than one data collection tool, including observation and document review, was used. The study period was 15 weeks and the interaction with the students was long. The content of the study is described in detail. Criterion sampling, which is one of the purposeful sampling types, was used in the selection of the study group. Expert opinion was sought in the development of data collection tools and data analysis in the study. In the findings, the statements of the participants were given in an objective way.

Data analysis

Content analysis was implemented in the analysis of student diaries. Content analysis is used in the analysis of qualitative data. In the content analysis, the expressions of the participants are converted into codes separately for each question. Repetitive codes are identified, common expressions are categorized and interpreted (Silverman, 2000). An observation rubric developed by the researchers was used in the study. The rubric used was used to examine the behaviors, wishes and reactions of the students in the games. In the observation rubric, there are criteria such as "willingness to play", "interest in the game", "performance in the game", "ability to play games" and "keeping diaries regularly". Each student was evaluated according to the specified criteria and scored as 3 (bright), 2 (average) and 1 (passive). The scoring criteria are as follows:

Observation rubric criteria scoring and explanations are as follows:

Table 1. Observation rubric ratings and explanations

Criteria	Point 3 : bright	Point 2 :average	Point 1 : passive
Willingness to play	Demanding and willingness to play	Indecisiveness to play and little willingness to play	Being reluctant to play games before starting to play
Interest in the game	Being interested in the content of the game and playing with pleasure	Pay little attention to the content of the game and play just to play	Not interested in the content of the game and not liking the game
Performance in the game	Active performance in the game and getting good points or reaching the stage in the game, being able to complete the game	Performing at a medium level in the game and getting a medium score in the game or reaching a certain level	Poor performance in the game and poor score or inability to progress in the game
Ability to play games	Playing the game properly and correctly	Difficulty understanding the rules of the game and playing correctly	Inability to understand and apply the rules of the game
Keeping diaries regularly	Filling the game diary game day	Filling the game diary in the days after playing	Filling the game diary with reminders for the next days

Results

In the study, the findings obtained from the student diaries were given in weeks.

First week: Hit the Mole

The findings obtained from the first week diaries of the students are as follows:

To the question of "Did you like today's game? Why?" half of the students answered "I like it very much" and "It is a fun game", 25.00% of the students answered "I like it" and "To be an educational game". To another question of "What are the aspects of today's game that you don't like?" 58.33% of the students answered "None" to the question. To the question of "What are your favorite aspects of today's game?", 58.33% of the students answered "It is very entertaining" and half of the students "It is educational and instructive". On the other hand, the question of "Is there anything in the game that you would like to change?" half of the students answered "None". ""What is the contribution of today's game to you? Please explain." the answer to the question was "Teaching healthy behaviors" the most to the question.

"We learned healthy behaviors that we should do in daily life in the game. For example, learning first aid or walking is healthy" (S1, boy).

"It is always important to take care of our cleanliness, for example, to keep our hands clean, we do not get sick, if we cannot wash, we may also have a disinfectant with us. It teaches healthy behaviors like this"(S10, boy).

"We should have breakfast and leave the house, we can take something from the house with us or we can get healthy food from the canteen. If we pay attention to our nutrition, we will act healthy" (S11, boy).

Second week : Maze Chase

The findings obtained from the second week diaries of the students are as follows:

To the question of "Did you like today's game? Why?", 91.66% of the students answered the question "I liked it very much". To the question of "What are the aspects of today's game that you don't like?" the majority of the students answered "None" with 66.66%. To another question of "What are your favorite aspects of today's game?" 25% of the students gave the answers to the question "Giving knowledge about health" and "Having fun". Otherwise, "Is there anything in the game that you would like to change?" the majority of the students (66.66%) answered "None" to the question. "What is the contribution of today's game to you? Please explain." 91.66% of the students answered the question as "teaching healthy daily living behaviors".

"We should eat the meals prepared by our mother at home or we should eat fruits and vegetables from the market" (S2, boy).

"We should not buy sugary foods sold in the canteen. For example, I ate too much, my teeth would rot or I would get sick" (S3, girl).

"If our hands are dirty, we should wash them, if we can't, we shouldn't get our hands dirty" (S4, boy).

"We should brush our teeth every day morning and evening, we should clean our teeth after meals" (S5, girl).

"We should wash our hands by rubbing them with plenty of soap when we come out of the sink" (S9, boy).

Third week: Matching Couples

The findings obtained from the third week diaries of the students are as follows: To the question of "Did you like today's game? Why?" while the most common answer from the students to the question was "I liked it a lot" with 66.66%, the second highest answer with 41.66%, was "Fun to match". To the question of "What are the aspects of today's game that you don't like?" 58.33% of the students answered the question "None". For the question "What are your favorite aspects of today's game?", 33.33% of the students answered "Matching is very fun". On the other hand, "Is there anything in the game that you would like to change?" 66.66% of the students answered "None" to the question. "What is the contribution of today's game to you? Please explain." 33.33% of the students answered the question as "Teaching what to do in an emergency", "Teaching healthy eating" and "Teaching healthy daily living behaviors".

"If we see an accident on the road, we should call the ambulance, call 112 and let us know" (S6, boy).

"For our health, we should not consume too much sugar and oily things" (S9, boy).

"If we feel that there is something in our ear, we should not try to remove it, we should go to a hospital around us" (S10, boy).

Fourth week: Who wants to be a millionaire?

The findings obtained from the fourth week diaries of the students are as follows:

To the question of "Did you like today's game? Why?" 91.66% of the students answered the question "I liked it very much". One of the students (S2) said, "I liked it. Because I felt like I was playing who really

wants to be a millionaire in the game." gave the answer. Similarly, another student (S5) said, "I really felt like I was a millionaire." he replied. These answers were coded as "Giving the feeling of real competition". 66.66% of the students answered, "What are the aspects of today's game that you don't like?" most of the students answered the question with "None". Similarly, "What are your favorite aspects of today's game?", the most common answer from the students was "Competition environment". "Is there anything in the game that you would like to change?" replied "None" 75.00% of the students answered to the question. One of the students (S6) also answered this question, "It was a game like the real thing, I wish it happened in reality, I wish it did". This answer is coded as "The realization of the game". "What is the contribution of today's game to you? Please explain." while half of the students answered the question "Teaching the number of food groups", 33.33% of them answered "Teaching examples of food groups" and "Teaching content of first aid kit". One of the students (S2) also said, "Milk and eggs can be given as examples for protein, bread and cereals for carbohydrates, apples and oranges for vitamins, water for minerals, and olive oil and sunflower oil for oil." replied as. This answer was coded as "Teach examples of food groups".

"There are scissors in the first aid kit, we can cut the bandage with it" (S3, girl).

"I thought there would be syrup in the first aid kit, I learned that there was none" (S4, boy).

Fifth week : Let's play baseball

The findings obtained from the fifth week diaries of the students are as follows:

To the question of "Did you like today's game? Why?" half of the students answered "I like it". To the question of "What are the aspects of today's game that you don't like?" 75.00% of the students answered the question "None". "What are your favorite aspects of today's game ?" 41.66% of the students answered as "It is related to sports" to the question. One of the students (S6) also answered this question, "Thanks to this game, I played baseball for the first time in my life." gave the answer. This answer is coded as "Give a chance to play baseball". To another question of "Is there anything in the game that you would like to change?" the majority of the students answered the question with "None". To the question of "What is the contribution of today's game to you? Please explain." "Teaching the number of food groups" was the answer given the most.

Sixth week: Hardworking bees

The findings obtained from the sixth week diaries of the students are as follows:

To the question of "Did you like today's game? Why?" 75.00% of the students answered the question "I liked it". To the question of "What are the aspects of today's game that you don't like?" half of the students answered the question "None". To another question of "What are your favorite aspects of today's game?" 25.00% of the students answered as "The name of our school class" and "The system of rolling the dice". "Is there anything in the game that you would like to change?" 66.66% of the students answered the question as "None". On the other hand, ""What is the contribution of today's game to you? Please explain." various answers were given to the question of as "Teaching food groups", "Teaching time to wash our hands", "Had fun", "Teaching health of our teeth", "Teaching unhealthy menu example" and " Teaching content of first aid kit". One of the studets (S1) answered the question "I learned that the food groups are carbohydrates, protein, fat, water and minerals." gave the answer. This answer was coded as "Food groups". Another student (S4) said, "Sandwich, cola and onion rings are not a healthy menu." as replied. This answer is coded as "Unhealthy menu example".

Seventh week: Vegetable soup

The findings obtained from the seventh week diaries of the students are as follows:

To the question of "Did you like today's game? Why?" 91.66% of the students answered the question "I like it" and 58.33% of the students stated it as "Fun". To the question of "What are the aspects of today's game that you don't like?", 58.33% of the students answered the question "None". "What are your favorite aspects of today's game?" most of the students answered "Fun" to the question. "Is there anything in the game that you would like to change?" 75.00% of the students answered "None" to the question. "What is the contribution of today's game to you? Please explain." the most answers to the question "Teaching first aid kit content" and "Teaching first aid definition" were received from the students. One of the students answered this question (S3), "I learned that meat, milk and eggs are proteins." gave the answer. This answer is coded as "Examples of the proteins group".

"There is no medicine in the first aid kit, I learned this today" (S7, boy).

"Cold water should not be drunk when sweaty" (S9, girl).

"First aid is emergency interventions until the ambulance arrives" (S11, boy).

Eighth week : Healthy adventure-country exploration

The findings obtained from the eighth week diaries of the students are as follows:

To the question of "Did you like today's game? Why?" 58.33% of the students answered the question

"I like it very much". To the question of "What are the aspects of today's game that you don't like?" half of the students answered "None" to the question. To another question of "What are your favorite aspects of today's game?" different answers were received from the students to the question of "Travel to different countries", "An exciting game", "Very fun" and "Questions about health". "Is there anything in the game that you would like to change?" the maximum number of answers to this question was "None". On the other hand, "What is the contribution of today's game to you? Please explain." the most common answers to the question were "Teaching the ways of corona transmission" and "Teaching how to do sports". One of the students (S7) "Give knowledge to us about oil types . For example; nut oil, sunflower oil and olive oil can be given as examples." gave the answer. This answer is coded as "Examples of oil group".

"If we touch someone who has corona, we will also get sick, so we should stay away" (S8, boy).

Ninth week: Our first mission: health

The findings obtained from the ninth week diaries of the students are as follows:

To the question of "Did you like today's game? Why?" 66.66% of the students answered the question "I liked it very much". "What are the aspects of today's game that you don't like?" 58.33% of the students answered the question as "None". To the question of "What are your favorite aspects of today's game?" the most answers to the question were "We do the tasks", "It is exciting" and "It is easy". To another question of "Is there anything in the game that you would like to change?" 75.00% of the students answered the question "None". Also, "What is the contribution of today's game to you? Please explain." the most answers were given to the question of "Teaching food groups", "Teaching to go to the dentist regularly" and "Teaching first aid to the bleeding place". One of the students (S7) replied, "I think it gives knowledge about proteins. For example; milk and dairy products are in the fish proteins group." gave the answer. This answer is coded as "Examples of protein groups". One of the students (S1) answered this question, "Taking the nutrients necessary for a healthy life in a certain amount and regularly is called a balanced diet." gave the answer. This answer was coded as "Balanced nutrition definition".

Tenth week : Healthy life

The findings obtained from the students' tenth week diaries are as follows:

To the question of "Did you like today's game? Why?" all of the students answered the question "I like it". To the question of "What are the aspects of today's game that you don't like?" 75.00% of the students answered "None" to the question. "What are your favorite aspects of today's game?" the most answers were given to the question of "Having a healthy day" and "Giving knowledge about health". Also, "Is there anything in the game that you would like to change?" 75.00% of the students answered the question as "None". To another question of "What is the contribution of today's game to you? Please explain." various answers were received "Giving healthy daily life suggestions", "Teaching healthy menu content" and "Teaching examples of food groups". One of the students (S1) answered this question, "We should wake up in the morning and wash our hands first thing." gave the answer. This answer is coded as "Hand-face washing time". Another student (S3) said, "He gave knowledge. I learned that olive oil, sunflower oil and almond oil are from the oil group." replied as. This answer is coded as "Examples of oil group". Another student (S9) said, "Strawberry is a vitamin, olive is oil, milk is a protein. Bread is carbs." as answered. This answer was coded as "Examples of food groups". One of the students (S10) replied, "When our knee bleeds, we press it first. We clean the bleeding place. Then we close it with a band-aid. I learned that." gave the answer. This answer is coded as "First aid in bleeding".

Eleventh week : Let's fly to health

The findings obtained from the students' eleventh week diaries are as follows:

To the question of "Did you like today's game? Why?" while 58.33% of the students answered the question "I liked it very much"; 25.00% of the students answered "It should be fun". One of the students (S9) also answered this question, "I had a lot of fun while developing it." gave the answer. To another question of "What are the aspects of today's game that you don't like?" most of the students replied "None" to the question. "What are your favorite aspects of today's game?" the most answers were given to the question of "Cloud options in the competition" and "Excited" to the question. Also, "Is there anything in the game that you would like to change?" 58.33% of the students answered "None" to the question. "What is the contribution of today's game to you? Please explain." "Teaching first aid supplies" and "Teaching healthy menu content" were given the most answers to the question. One of the students (S1) replied, "Fizzy drinks and cold tea are harmful drinks, I learned that." gave the answer. This answer is coded as "Teaching harmful drink examples".

Twelfth week : Let's test our health

The findings obtained from the twelfth week diaries of the students are as follows:

To the question of "Did you like today's game? Why?" half of the students answered "I like it very much". "What are the aspects of today's game that you don't like?" Most of the students answered "None" to the question and "What are your favorite aspects of today's game?" answered "The questions are easy". The other most common answers from the students were "The game was exciting" and "None". To the question of "Is there anything in the game that you would like to change?" the most common answers were "Spelling mistakes can be corrected", "Medical expressions should not be used" and "None". "What is the contribution of today's game to you? Please explain." "Teaching first aid kit contents", "Teaching time to wash our hands" and "I had fun" were the most answers to the question. One of the students (S1) answered, "Breakfast is a meal, I learned that there is no food group." gave the answer. This answer was coded as "Meal and food group separation".

"We have to keep our hands clean. For example, we must wash our hands before and after meals and using the sink. I remembered this" (S12, boy).

Thirteenth week: Healthy options

The findings obtained from the thirteenth week diaries of the students are as follows:

To the question of "Did you like today's game? Why?", 58.33% of the students answered the question "It's a fun game". To the question of "What are the aspects of today's game that you don't like?" most of the students answered "None" to the question. To the question of "What are your favorite aspects of today's game?" most of the students answered the question "The decor in the game". To another question of "Is there anything in the game that you would like to change?" the most common answer to the question was "No". One of the students (S1) replied, "At the end of the game, you should give feedback as if you won a prize. Confetti may come." replied as. This answer is coded as "Endgame feedback". "What is the contribution of today's game to you? Please explain." various answers were received from the students to the question of "Teaching frequency of brushing our teeth", "I had fun", "Teaching number of food groups", "Teaching what we should do in case of an accident", "Teaching content of first aid kit" and " Teaching methods to protect against coronavirus".

"Foods are divided into five groups as carbohydrates, proteins, fats, vitamins and minerals" (S3, girl).

"There is a batikon in the first aid kit, if we fall, we will drive it" (S8, boy).

Fourteenth week: Healthy passion fruit

The findings obtained from the fourteenth week diaries of the students are as follows:

To the question of "Did you like today's game? Why?" 66.66% of the students answered the question "I like it". To the question of "What do you dislike about today's game?" most of the students answered "None" to the question. "What are your favorite aspects of today's game?" The answer to the question "It is like a competition in the form of question and answer" was received the most from the students. To another question of "Is there anything in the game that you would like to change?" half of the students answered "None" to the question. "What is the contribution of today's game to you? Please explain." 25.00% of the students answered the question "Reminding knowledge", "Teaching the contents of the first aid kit", "Teaching number of food groups" and "Teaching that to do in an emergency".

"We should wash our face when we get up in the morning" (S3, girl).

"There are tweezers in the first aid kit" (S9, boy).

Fifteenth week:

The findings obtained from the fifteenth week diaries of the students are as follows:

To the question of "Did you like today's game? Why?" 91.66% of the students answered the question "I like it". "What do you dislike about today's game?" 75.00% of the students answered "None". To another question of "What are your favorite aspects of today's game?" the most common answer to the question was "It's fun". To the question of "Is there anything in the game that you would like to change?" most of the students answered "None" to the question. "What is the contribution of today's game to you? Please explain." 41.66% of the students answered the question "It provides us to have fun", 25.00% of the students answered as "Teaching memorable information" and "Teaching time to wash our hands".

"We should wash our hands before and after meals" (S7, boy).

Results from observations

All of the 12 students participating in the study enjoyed and evaluated all the educational digital games in the virtual classroom and all of them took an active role in the implementation process. However, when the attitudes and behaviors of the students during the application process were examined, weekly differences emerged.

In the general 15-week performance of the students; it has been reached that they got full points in all

areas such as "willingness to play", "ability to play games", "keeping diaries regularly", "interest in the game", "performance in the game".

All of the students got a maximum of 3 points in the field of "playing skills" for all weeks. The reason for the scoring is that it was observed that the students played all games in accordance with the rules and correctly. The other area with the highest full score was "performance in the game". All of the students got 3 points in this area in the 2nd, 4th, 6th and 7th weeks. When the reason for scoring was examined, it was found that the students achieved good scores in the game they played in these weeks and all of them successfully completed the given game.

All of the students got 3 points in the field of "keeping diaries regularly" in the 1st, 2nd and 3rd weeks. When the reason for scoring was examined, the students filled and sent their diaries about the educational digital game on the day they played.

All of the students got 3 points in the field of "willingness to play" in the 1st, 2nd and 4th weeks. When the reason for scoring was examined, the students stood in line to play the game and always wanted to play first. It has also been observed that they are very willing to play the game.

All of the students got 3 points in the field of "interest in the game" in the 4th, 7th and 10th weeks. The students were closely interested in the scenario and rules of the game they played, as well as playing the game.

Conclusion

As a result of the study, it was found that primary school students' perceptions of educational digital games were positive and that they liked them in general. Similarly, studies have found that participants have positive perceptions of computer games (Wang et al., 2012; Pinder, 2021). In a study conducted by Premthaisong and Srisawasdi (2020), the effect of the educational digital board game used for science subjects on the perceptions of third grade students was investigated. In the study, it was found that the digital game had a positive effect on students' perceptions. Chen et al. (2021), it was found that primary school students have positive perceptions about the use of educational digital games in vocabulary learning. In a study by Cochrane (2021), the digital literacy of university students and their perception of digital tools in academic language learning were examined. In the study, it was found that the awareness of the participants in the use of technology in learning was affected by their perception of difficulty. In another study, India et al. (2021), teachers' perceptions of the use of digital games in education were examined. It has been found that the teachers participating in the study have positive perceptions towards digital games. In addition, teachers stated that they prefer games that are compatible with the curriculum and encourage learning. In the study conducted by Belda-Medina and Calvo-Ferrer (2022), the knowledge and attitudes of teacher candidates about the use of digital games in education were examined in a higher education institution. In the study, a significant difference was observed in the attitudes of teacher candidates towards the use of games in education. In another study by Junngam and Srisawasdi (2022), a digital science-related development was developed and it was found that students' perceptions of learning increased with play. In another study conducted by Odikpo (2022), the attitudes and perceptions of undergraduate students towards the use of games and simulations in educational environments were examined. In the study, it was found that there is a positive relationship between the perceptions and attitudes of the participants and their intention to use digital games. von Kotzebue et al. (2022), the effect of escape games, which is one of the educational digital games, on students' motivation was examined. As a result of the study, it was concluded that the motivation of the students was positively affected by the digital escape games.

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İLKOKUL ÖĞRENCİLERİNİN DİJİTAL SAĞLIK OYUNLARINA İLİŞKİN GÖRÜŞLERİ NASILDIR?

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ÖZET

Günümüz dijital çağında her alanda dijital gelişmeler yaşanmaktadır. Dijital gelişmelerin yaşandığı alanlardan biri olan eğitimde, dijital eğitim araçları gün geçtikçe yaygınlaşmaktadır. Bu noktada eğitimde kullanılan en popüler ve yaygın dijital araçlardan olan eğitsel dijital oyunların yaygınlaştırılması ve geliştirilmesi önem arz etmektedir. Araştırmanın amacı, ilkokul öğrencilerinin eğitsel dijital oyunlara ilişkin algı ve deneyimlerini incelemektir. Çalışma süresi 15 hafta olup öğrencilere her hafta farklı bir oyun deneyimi yaratılmaktadır. Öğrenciler sağlık eğitimine yönelik 15 farklı eğitici dijital oyun oynayarak değerlendirmiş ve görüşlerini paylaşmıştır. Araştırmanın modeli niteldir. Nitel araştırma desenlerinden biri olan fenomenoloji kullanılmıştır. Araştırmanın örneklemini ilkokul 4. sınıf öğrencileri oluşturmaktadır. Araştırmada veri toplama aracı olarak öğrenci günlükleri ve gözlem kullanılmıştır. Günlüklerden ve gözlemlerden elde edilen haftalık veriler incelenmiş ve değerlendirilmiştir. Çalışmadan elde edilen verilerin analizinde içerik analizi uygulanmıştır. Araştırma sonucunda ilkokul öğrencilerinin eğitsel dijital oyunlara yönelik olumlu algılara sahip oldukları ve eğitsel dijital oyunları sevdikleri sonucuna ulaşılmıştır.

Anahtar Kelimeler: Eğitici dijital oyun, sağlık, görüş, ilkokul öğrencileri