Examination of Primary-School Teachers' Views on Digital Game-Based Teaching

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Abstract

In this study, it is aimed to examine the opinions of class teachers about digital game-based teaching. The model of the research, which adopts the qualitative research approach, is the case study. Within the scope of the purpose of the study, opinions were obtained on a voluntary basis from the class teachers selected by the criterion sampling method, one of the purposeful sampling methods. The participants of the research are 30 class teachers working under the Ministry of National Education in the 2020-2021 academic year. A semi-structured interview form was used as a data collection tool. The collected data were analyzed by content analysis method. In line with the findings obtained, conclusions and recommendations have been given.

Keywords: Digital Game, Game Based Learning, Digital Game Based Learning, ClassroomTeacher

1. Introduction

Human beings have been continuing to produce and learn knowledge since the first ages. While the process of producing knowledge was based only on observation and oral expression at first, knowledge has become permanent with the advent of writing into human life. The intensive use of electronic media in the century which we live in has enabled the information to be stored both visually and auditorily (Özdemir, 2006). These developments paved the way for a transformation in games and toys. Electronic games and toys have slowly started to take their place in the game industry. The first examples of modern games were developed by the USA in 1958 and 1962. These games inspired the arcade games that would later be released in 1971 and 1972. After the USA in terms of modern games, Japan also joined the game market in 1978 and started to develop console games. Competition between the two countries continued until the 1990s. Since the 90s, Europe has started to integrate into the game market (Ankara Development Agency, 2016). Since the 90s, the game industry has started to grow rapidly. Every day, new and different types of games are released as regards player preferences (Yalçın Irmak & Erdoğan, 2016). With the penetration of the internet into almost every home and also getting cheaper of technology, the digital game industry has started to grow rapidly. From recent period till today, internet browsers, tablets and smartphones have been added to PC, console games. In the recent period, players can play single-player games or games played with the number of people limited as to the geographical regions, while today, in digital games, players interact with the whole world. Factors in the

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rapid growth of the digital game industry is that increase in the use of smart phones and tablets, the ease of accessing digital games from these tools, and accordingly the widening of the age range of digital game users, the increase in demand, and the cheaper hardware costs can be counted (Güvenli İnternet Merkezi, 2019).

As in the world, digital games are widely used in our country as well. In our country, the population reached 80 million and the number of digital game players reached 30 million in 2016 (Güvenli Web, 2017). The attitudes of individuals who turn to digital games for entertainment, distraction, and leisure affect their attitude against these games such factors as the desire to get away from real life, the desire to realize their wishes that they could not fulfill in real life with digital games, the fact that digital games are now on the agenda of many people, the desire to challenge, the curiosity for the next level, the awards won at the end of the level (Tekkurşun Demir & Mutlu Bozkurt, 2019).

Digital games, which have an important role in the acquisition of technological knowledge and skills by today's children born in the age of technology, contribute positively to both their developmental areas and their academic development. Although many criticisms have been brought to digital games during the transition from traditional games and methods to digital environments, technology and digital games offered to us by the period have become the primary source of learning for children. Thanks to digital games, hand-eye coordination, following the given commands, decision making, problem solving, analysis, reasoning and motor skills have increased (Toran et al., 2016). Some researchers think digital games as opposed to traditional games and argue that children who turn to digital games cannot benefit from the contributions of traditional games. Some researchers suggest that digital games will support the development of the child, as in other types of games. Video and computer games, smart phones, websites, electronic toys and games on tablets are within the scope of digital games where technology is used for gaming (Işıkoğlu Erdoğan, 2019).

It is inevitable that the form of the game will change over time. However, this situation should be turned in favor of contributing to the development of the child at the highest level (Ayan, 2020). While the development and make use of traditional teaching tools such as textbooks and blackboards have taken centuries, new teaching materials entered our lives in less than a decade and have started to be used (Short, 2002). Digital technologies also paved the way for transformation in education processes, it has become an environment that provides various opportunities to people not only as a tool, but also in the field of education and training. Content, method and material are very important for educators in the educational environment. What, how and with what to teach has begun to transform with the change in educational technologies (Kula & Avcı, 2019). The fact that the new generation, called the Z generation, is in a very good condition in terms of digital skills, pushes teachers to search for new ones in order to create an educational environment as regards to the interests and needs of this generation (Alsancak Sırakaya & Seferoğlu, 2019). It has become a necessity for every teacher that appeals to this generation to be exerted dominance of digital environments and technology.

Teachers are critical in the development of societies. There is an important relationship between the teachers who shape the future of the society and the next generations (Gündüz & Odabaşı, 2004). It is necessary for teachers to shape the education and training process according to the characteristics of the new generation, to keep up with the times, to stay up to date, and to use various methods, techniques and materials. Especially in order to ensure permanent and effective learning of primary school children, interesting and memorable stimuli are needed. Since primary school students do not have the ability to think abstractly, they may have difficulty in understanding some concepts. That's why, it will be beneficial to use concrete materials in teaching activities (Kılıç et al., 2013). Although teaching materials are used for various purposes, they sometimes facilitate the work of teachers, and sometimes they assume the role of teacher and transfer the achievement directly to the student (İnan, 2006). The more the material used appeals to the senses, the more permanent the learning will be. When Edgar Dale's cone of learning experience is examined, there are experiences that the learner has acquired directly in the lowest and most effective learning part of the cone (Durmuş, 2015).

With the adoption of a student-centered approach in education, students' interests, wishes and curiosity have become one of the vital criteria to be considered in the teaching process (Kukul, 2013). Technology has an important role in the lives of Generation Z, who were born into a world equipped with technological tools. Traditional teaching environments do not attract the attention of these students, causing them to get bored quickly (Aydın, 2020). Learning environments supported by activities and materials will increase student motivation. Game-supported learning is one of the fun and effective methods for primary school students. Games have always been preferred in the classroom environment, and their popularity has been preserved thanks to their applicability in every lesson. However, digital

games are now preferred instead of traditional games. One of the biggest innovations brought by technology to today's educational environments is digital games (Kusuçuran, 2020). For children who are already interested in computer games, the use of digital games in the educational environment both entertains children and facilitates learning (Kukul, 2013). It would be an unpleasant approach to push digital games brought to education by technology in educational environments where students who have excellence in digital skills (Ocak, 2013).

A lot of informal learning takes place out of the school setting. Digital game environments are one of these environments. The informal effects that occur in these environments are not only the situations such as addiction and social life but also changing children's perspectives on school and education. Some children may think that school is unnecessary and that the time spent at school impedes the game. For this reason, educational digital games are becoming more common day by day so that children can play digital games in educational environments. Thanks to educational digital games, which are a new way of learning, children will be more willing to learn and effective learning will occur (Torun et al., 2013). Thanks to the smart boards offered to the use of teachers in educational environments in recent years, activities suitable for the needs of the students can be reached, abstract subjects are concreted and interactive applications are presented (Babacan & Şaşmaz Ören, 2017). Smart boards are very useful tools for the use of educational digital games in teaching activities. Thanks to smart boards, many sensory organs of the students are engaged in, and children can learn by doing and experiencing many subjects.

One of the biggest steps taken in the name of technology in the field of education is the "Movement to Increase Opportunities and Improve Technology (FATIH)" project, which was put into practice by the Ministry of National Education in 2011.With this project, smart boards and internet support were provided to the classrooms, and tablets were provided to students and teachers. In addition, the "Education Informatics Network (EBA)", which is an environment where students and teachers can share content, has been created (Babacan & Şaşmaz Ören, 2017). In particular, the COVID-19 pandemic, which started in 2020 and changed the lifestyle of the whole world, also changed the functioning of the education process, such tools as phones, tablets and computers have become indispensable in the distance education process. The frequency of teachers and students using digital media has increased. Teachers have started to give homework using interactive education programs. Thanks to the EBA platform offered by the Ministry of National Education for the use of teachers and students, live lessons can be taught from different places (Bayburtlu, 2020). Although this is a good solution especially in the distance education process, some teachers were caught unprepared for such a rapid transition to technology-oriented education. Teachers need to be able to use technological tools and equipment effectively, both in the classroom and in distance education. The use of these tools and materials in the teaching environment will ensure permanent learning. Smart boards in the classroom environment offer the opportunity to use both the teacher and the student, and provide effective learning by appealing to many sensory organs during teaching (Boz & Özerbaş, 2020).

There are many benefits of digital games used in the educational environment. Thanks to digital games, motor skills and information technology skills are developed, and their cognitive and affective developments are supported. Digital games enable the learner to learn by providing challenging experiences and giving the opportunity to make mistakes, and the motivation of the learner increases in this challenging environment. The child who succeeds in the task in digital games develops a sense of confidence (January, 2013). Students taking an active role in the experience and learning activity ensures success and creates learning awareness (Çetin, 2013). Besides, digital games have an important effect on gaining skills such as problem solving, fast and correct decision making, and strategic thinking (Hazar et al., 2017). Educational digital games can be used almost everywhere where technological opportunities are available, contributing to mental development and reinforcing what has been learned (Sabırlı, 2018).

Teacher and student roles are different in digital game supported learning environments. While the student is playing the game, the teacher is the person controlling this activity. The student is at the core of the learning process and the teacher guides the student. In this respect, digital game-supported teaching is parallel to the constructivist education approach (Çiftçi, 2013).

Digital games provide convenience in transferring abstract and boring subjects, in subjects that require expertise and are difficult to understand, in cases where it is difficult to reach the target audience, and in complex subjects that require analysis and synthesis skills (Özbek, 2020).

The purpose of this research is to examine the views of classroom teachers on digital game-based teaching. For this purpose, answers to the following questions were sought:

- What are the opinions of primary school teachers about the use of materials in teaching activities?

- In which lessons do primary school teachers use teaching materials? Why is that?

- In which lessons do primary school teachers use digital games? Why is that?

- What are the opinions of primary school teachers about their level of self-efficacy regarding the use of technology in teaching activities?

- What are the opinions of the classroom teachers about the use of the smart board in teaching activities?

- What are the views of primary school teachers about the use of digital games in teaching activities?

- What are the views of primary school teachers about the use of digital games in teaching activities?

- What are the opinions of primary school teachers about the sites where they use digital games in their teaching activities?

- What are the views of classroom teachers on the realization of educational goals through digital games in teaching activities?

- What are classroom teachers about the effects of digital game-based teaching?

- What are the points that primary school teachers pay attention to when using digital games in their teaching activities?

- What are the opinions of the classroom teachers about the digital game content presented in EBA?

- What are the opinions of the primary school teachers regarding the digital game studies in EBA?

2. Method

The case study model, one of the qualitative research approaches, was utilized in this study. A case study can be defined as the analysis of the observations and opinions of the participants through detailed interviews and document collection, and the detailed examination of these data (Glesne, 2020). There are certain stages during the case study; creating the research sub-problems, determining the analysis unit, determining the situation to be studied, choosing the individual or individuals, unit or units that are the subject of the research, collecting data and associating it with sub-problems, analyzing and interpreting the data (Paker, 2021). In the research, all the steps of the case study were planned and the research was formed.

Participants of the Study

Participants in the study were determined by using the criterion sampling technique, one of the purposive sampling methods. In the criterion sampling technique, it is aimed to select a sample directly related to the research problem by determining some criteria such as event, object, and feature suitable for the purpose of the research (Özbaşı, 2019). The criterion used in the criterion sampling method is the class teachers who are working under the Ministry of National Education in the 2020-2021 academic year and have sufficient technological equipment in their classrooms. The characteristics of the teachers who voluntarily participated in the study are given in Table 1.

Table 1. Exhibitor Information

Feature	Teachers	f
Gender		
Female	T1,T2,T3,T6,T7,T8,T9,T10,T11,T12,T13,T14,T16,T17,T18,	24
Male	T19,T20,T22,T23,T24,T25,T27,T28,T30	6
	T3,T5,T6,T8,T9,T15	
Educ. Background		
Bachelor's Degree	T1,T2,T3,T4,T5,T7,T8,T9,T10,T11,T12,T13,T14,T15,T16,	28
	T17,T18,T19,T20,T21,T22,T23,T24,T25,T26,T28,T29,T30	
Master's Degree	T6,T27	2
Professional Seniority	T3,T7,T8,T9,T10,T12,T13,T14,T15,T16,T17,T18,T19,T21,	
1-5	T22,T23,T24,T25,T27,T30	20
6-10	T1,T2,T11,T20,T28	5
10-15	Ö4,Ö5,Ö6,Ö26,Ö29	5
Class of educating		
1 st grade		9

2 nd grade	T6,T11,T19,T22,T24,T26,T27,T28,T29	9
3 rd grade	T1,T3,T5,T10,T17,T18,T20,T25,T30	6
4 th grade	T2,T8,T15,T16,T21,T23	4
Unified grade	T4,T7,T9,T14	2
	T12,T13	
City of working		
Şanlıurfa	T1,T3,T4,T5,T6,T8,T13,T20,T22,T24,T25,T27	12
Ağrı	T9,T12,T14,T16,T17,T18,T19	7
Kayseri	T15,T26,T30	3
Adıyaman	T28,T29	2
Malatya	T11,T23	2
Kahramanmaraş	T7	1
Şırnak	T10	1
Ankara	T2	1
Gaziantep	T21	1

According to Table 1, a total of 30 teachers, 24 female and 6 male, were engaged in the study. Majority of the teachers had undergraduate education (f=28), 2 teachers had graduate education. However, when the professional seniority of the teachers is examined, it can be said that the majority of them (f=20) work for less than 5 years, while all of them serve for less than 15 years. Considering the grade levels taught by the teachers, 9 are 1st grade, 9 are 2nd grade, 6 are 3rd grade, 4 are 4th grade, and 2 are combined classroom teachers. In addition, 12 of the teachers participating in the research were in Şanlıurfa, 7 in Ağrı, 3 in Kayseri, 2 in Adıyaman, 2 in Malatya, 1 in Kahramanmaraş, 1 in Şırnak. in Ankara, 1 in Ankara and 1 in Gaziantep.

Data Collection Method

In the research, in which case study model was adopted, semi-structured interview form was used to get in-depth information about the situation. While creating the semi-structured interview form, first of all, the relevant literature was scanned. In accordance with the purpose of the research, the question pool was formed by the researcher and the interview form was finalized by taking the opinions of three experts on digital games.

Data Collection

Data collection was done voluntarily by the researcher via using the Zoom program with the teachers after the necessary permissions were obtained with a semi-structured interview form. The opinions of 30 class teachers were taken with the semi-structured interview form. Interviews were conducted by the researcher. The interviews lasted approximately 10-15 minutes. The obtained data were recorded and then the recorded data were converted into text.

Analysis of Data

The data collected in line with the opinions of the teachers were analyzed by content analysis. It is aimed to categorize the data collected in content analysis, to organize and interpret these data in a way that the reader can understand (A. Yıldırım & Şimşek, 2018). Themes related to the sub-problems of the research were formed by content analysis. The themes created were presented to the opinions of field experts and presented in their final form. In order to strengthen the reliability, the cases of consensus and disagreement were determined and the reliability results of the rubric were obtained by applying the Miles and Huberman formula. This formula is expressed as: Reliability = Consensus / (Agreement + Disagreement) X 100 (Miles and Huberman, 1994, p.64).

According to the Miles and Huberman reliability formula, two different experts in the field analyze the data by coding in line with the predetermined themes. As a result of these coding, the themes with which consensus and disagreement were reached among the experts are determined, and the consistency ratio between the opinions of the two experts can be determined with the reliability formula (Yanpar Yelken, 2009). The Miles and Huberman coefficient was found to be 0.87.

3. **Findings and Interpretation**

Findings Regarding the Opinions of Classroom Teachers on the Use of Materials in Teaching Activities

Teachers were asked about the contribution of using materials in teaching activities to the teaching process. The statements of the class teachers about the use of materials are given in Table 2. The data were classified into 8 themes. These themes are: Providing Permanent Learning, Concretization, Drawing Attention, Learning by Experiencing, Saving Time, Teaching by Entertaining, Increasing Motivation and Ensuring Active Participation in the Class.

Table 2. Statements of Teachers Regarding the Use of Materials

Themes	f
Providing Permanent Learning	18
Concretization	18
Drawing Attention	17
Leraning By Experinecing	8
Saving Time	7
Teaching By Entertaining	5
Increasing Motivation	5
Ensuring Active Participation	2

Table 2 shows the statements of teachers about the contribution of material use in teaching activities. Regarding the Permanent Learning theme, teachers (f=18) expressed their views on the use of materials as follows:

T11: *"...when we talk about it, children do not remember anything permanent, but when I ask a question, if there is something I do; a material, an activity, the child can remember more easily and forget what he has learned more easily..."*

T16: *"...I remind the material when there is confusion when they forget about the subject..."*

T19: *"...as he sees the object concretely, he can transfer it to the long-term memory in his mind..."*

Regarding the theme of Concretization in Table 2, teachers (f=18) expressed their views on the use of materials as follows:

T1: *"... concretizing some abstract concepts also helps us a lot."*

T22: *"...in general, we can prepare different materials, even if it is very simple, it was a stick, a bean, or whatever. I'm throwing about fractions, let's draw a circle, let's make our pizza, let's make our pizza first, let's decorate it like this, then let's divide it in half and quarters like this, when I tell the children directly about the quarter, they will not understand. They will say, 'Half what, quarter what?' But I observed that they understood more easily when they explained it in this way and embodied it."*

Regarding the theme of Drawing Attention in Table 2, T4 expressed her views on the use of materials as follows:

T4: "It arouses children's interest and curiosity and increases their interest in the lesson."

Regarding the theme of Learning by Doing and Experiencing in Table 2, T5 expressed his views on the use of materials as follows:

T5: *"Now you know that the more the material appeals to the senses, the more useful it becomes if you appeal to the sense organ. Therefore, with the material, the child learns by living by doing and by getting into it like this."*

Regarding the Time Saving theme in Table 2, T18 expressed her views on the use of materials as follows:

T18: *"When we use the material, children understand more quickly because it appeals to both eyes and ears, and we really save time."*

Regarding the theme of Teaching by Entertaining in Table 2, T20 expressed his views on the use of materials as follows:

T20: *"...it makes it more fun, generally a game."*

Regarding the theme of Increasing Motivation in Table 2, T2 expressed his views on the use of materials as follows:

T2: *"...that is, when it attracts attention, the desire and enthusiasm for the lesson increase."*

Regarding the theme of Ensuring Active Participation in the Lesson in Table 2, T13 expressed his views on the use of materials as follows:

T13: *"It increases children's participation in the lesson more..."*

Findings Concerning the Courses in which Classroom Teachers Use Instructional Materials

The teachers were asked in which courses they used the teaching materials. The lessons in which the classroom teachers use the teaching materials are given in Table 3. The data were classified into 6 themes. These are Mathematics, Turkish, First Reading and Writing, Science, Social Studies, All Courses themes.

Table 3. Classes in which Classroom Teachers Use Instructional Materials

Themes	f
Mathematic	23
Turkish	10
Science	8
All Courses	5
Primary Reading and Writing	4
Social Studies	2

Table 3 shows the lessons in which the classroom teachers use the teaching materials. The majority of the teachers (f=23) stated that they used the teaching materials in the mathematics lesson. In addition, the teachers stated that they also used teaching materials in Turkish (f=10), Science (f=8), First Reading and Writing (f=4) and Social Studies (f=2) courses. Some of the teachers (f=5) stated that they used teaching materials in all lessons.

Regarding the theme of Mathematics in Table 3, T10 expressed his views on the use of materials as follows:

T10: "Usually in lessons that are abstract. That is, I use it in mathematics lessons because it is difficult to teach abstract concepts."

Regarding the Turkish theme in Table 3, T24 expressed his views on the use of material as follows:

T24: "As you know in Şanlıurfa, there is a language problem, so I usually use it effectively in Turkish teaching lessons."

Regarding the science theme in Table 3, T21 expressed his views on the use of materials as follows:

T21: "The subjects in the science lesson are especially abstract. In fact, subjects that are more convenient to be embodied are in science lesson."

Regarding the All Lessons theme in Table 3, T5 expressed his views on the use of materials as follows:

T5: "I try to use it in all lessons as much as possible. It can be a music lesson where the achievement is available, or it can be a life science lesson. I try to use it in all lessons because I think it is effective to learn by doing."

Regarding the first reading and writing theme in Table 3, T30 expressed his views on the use of materials as follows:

T30: "I especially use it in the first reading and writing lessons while teaching the first grade a lot."

Findings Regarding the Use of Digital Games by Classroom Teachers in Teaching Activities

Teachers were asked about their use of digital games in teaching activities. The use of digital games by classroom teachers in teaching activities is given in Table 4. The data were classified into 3 themes.

Table 4. Class Teachers' Use of Digital Games in Teaching Activities

Themes	f
Using	26
Rarely using	3
Not using	1

When the use of digital games in the teaching activities of the classroom teachers in Table 4 is examined, it is seen that the majority of the teachers (f=26) use digital games. T9 expressed his views on this subject as follows:

T9: "I use digital games, I can even give an example: I can say that I taught the multiplication table in math class with games. In other words, it has been so beneficial... Even my student, who learned the latest, took care of most of it in a week when we started playing the game."

According to Table 4, 3 of the classroom teachers stated that they rarely use digital games in teaching activities, while 1 stated that they do not. T8 expressed his views on this subject as follows:

T8: "So it is not something that I use very often, frankly, I make very little use of it. In fact, I think I am inadequate in this regard."

Findings Regarding the Levels of Self-Efficacy of 33rd Grade Teachers on the Use of Technology in Teaching Activities

Teachers were asked to what extent they consider themselves competent in the use of technology in teaching activities. The level of self-efficacy of classroom teachers in teaching activities is given in Table 5. The data were classified into 4 themes.

Table 5. Levels of Primary Teachers' Self-Efficacy in Using Technology in Teaching Activities

Themes	f
Good	17
Very good	5
Average	5
Inadequate	3

When Table 5 is examined, it is seen that teachers' level of self-efficacy regarding the use of technology in teaching activities is seen. The majority of the teachers (f=16) stated that they use technology at a "good" level. T5 expressed his views on this subject as follows:

T5: "Today, technology is advancing very rapidly, so I try to update myself as much as possible, and I think it is sufficient for now, and in other words, when something new comes, I try to update myself in terms of using a material that will help children in the subject we need to process."

5 of the teachers stated that they use technology at the level of "Very good", 5 of them "Average", and 3 of them "Inadequate". T26, T23 and T17 expressed their views on this subject as follows:

T26: "So if I give a score out of 100, it is over 90. We use technique very seriously. Be it smart boards, projections in the past... Since we first started our mission, we were always born into technology."

T23: "So I can say it is medium. It's not too bad, it's very good. There is no upper limit, frankly... I think the pandemic taught us that. So I have never held back on using technology... Even before the pandemic, but as I said, there is no upper limit right now, so I can't say I'm very good."

T17: "It cannot be said that I am very competent. I mean, I'm also in my 2nd year, I don't have that much knowledge. I try to learn by trial and error myself."

Findings on the Situation of Classroom Teachers Using Smart Boards in Teaching Activities

Teachers were asked how effectively they used the smart board in teaching activities. The use of the smart board by the classroom teachers is given in Table 6. The data were classified into 6 themes.

Table 6. Smart Board Intended Use of The Classroom Teacher

Themes	f
In all courses	18
In explaining the subject	7
In evaluation stage	5
When physical facilities are available	3
Rarely	3
Beginning of the lesson	2

When the use of the smart board in the teaching activities of the classroom teachers in Table 6 is examined, it is seen that the majority of the teachers (f=18) use the smart board in every lesson. T11 expressed his views on this subject as follows:

T11: "Yes, it is always on, from the moment we enter the classroom, and sometimes the electricity is cut off and we think as if everything is gone."

While 2 of the teachers stated that they used the smart board during the introduction to the lesson, 7 of them stated that they used it during the lecture phase and 5 of them during the evaluation phase. T26 and T30 expressed their views on this subject as follows:

T26: "...We watch lectures from Okulistik or Morpa Campus. All of my students take turns doing the activities there, or we use these Kahoot Quiz or Wordwall studies that I prepared the day before, both for repetition and reinforcing the topics we have just learned."

T30: "First of all, I want an interesting introduction while introducing the subject. First of all, I make such an introduction; it will attract their attention... Later, of course, we do not always use smart boards, but then I can play games for reinforcement purposes at the end."

3 of the teachers stated that they rarely use the smart board, and 3 of them stated that they use it when physical facilities are available. T24 expressed his views on this subject as follows:

T24: "...we are experiencing technical problems that the network does not receive, the internet comes and goes, yes, when we look at it, there is technical possibility, but the electricity goes and goes, I cannot use it actively and regularly. There was a smart board at my school. We are trying to use certain programs, be it EBA, Okulistik, Morpa Campus, but as I said, we are experiencing difficulties due to technical problems."

Findings Regarding the Views of Classroom Teachers on the Use of Digital Games in Teaching Activities

Teachers were asked for their views on the use of digital games in teaching activities. The views of classroom teachers on the use of digital games in teaching activities are given in Table 7. The data were classified into 3 themes and 13 sub-themes.

Table 7. Opinions of Classroom Teachers on the Use of Digital Games in Teaching Activities

Themes	Sub-themes	f
Should be used	Keep up with the times	8
	Attract attention	8
	Learning with fun	6
	Ensuring active participation in the class	4
	Permanent learning	4
	Reinforcing the learned knowledge	4
	Using technology for educational benefits	4
	Quick Learning	1
Should be limited	Not every lesson when necessary	4
	Not to be purpose but a method	2
	Dependency	1
	Physical disorders	1
Shouldn't be used	Not suitable for course content	1

When Table 7 is examined, teachers think that digital games; adapting to the times (f=8), attracting attention (f=8), learning with fun (f=6), active participation in the lesson (f=4), permanent learning (f=4), reinforcing what has been learned (f=4) thinks that technology should be used in favor of education (f=4) and fast learning (f=1). T1 and T16 expressed their views on this subject as follows:

T1: "I think it should definitely be used because we are in the digital age right now. We are in the age of technology. Tech gadgets are everywhere. Students are already too engaged with this technology outside of school. We should use it in our lessons in order to keep up with this age. At the very least, by playing games related to the lessons, students learn these digital games for the benefit of the students and learn the subjects that you sometimes have to explain for a long time, and have the opportunity to reinforce them more quickly. I think it's important to play from this point of view as well."

T16: "I think it should be used, of course, if possible, I now try to use digital games for reinforcement purposes after explaining and reinforcing the subject from my smart board, of course, as far as I can find... I think it should be used because how can I tell children how to play more. I think digital games should be used to attract their attention, because they adapt to the game environment more and adopt what they learn there more quickly..."

According to Table 7, teachers stated that digital games should be used as a tool, not a goal (f=4) and when necessary (f=2), that addiction (f=1) and physical ailments (f=1) may occur, and that digital games should be used in accordance with the course content. They stated that there was no (f=1). T4, T12 and T19 expressed their views on this subject as follows:

T4: "I can say that a goal should never be a goal. It has advantages as well as disadvantages. For example, playing a digital game during a lesson or spending a lesson with a digital game is an extremely negative situation. In other words, for example, while memorizing the multiplication table, it can be homophones or antonyms... That is, it can be in Turkish, Mathematics classes or science. Small, simple, such a two-minute, three-minute game can be passed on by playing. There should never be a purpose, if there is a purpose, there is a problem."

T12: "I don't think that the contents of digital games are something that appeals to many lessons."

T19: *"I don't think it should be used continuously or for every lesson. When it is constant, a student becomes addicted to it, or when we want to teach something by mistake, we can lead him to a game addiction, or he may have an eye disease problem, he may have a sitting disorder... It has many adverse aspects, actually, I recommend using it at certain levels and at certain course intervals."*

Findings Concerning the Lessons in which Classroom Teachers Use Digital Games in Teaching Activities

Teachers were asked about the lessons they used digital games in their teaching activities. The lessons in which classroom teachers use digital games are given in Table 8. The data were classified into 7 themes.

Table 8. Lessons in which Class Teachers Use Digital Games in Teaching Activities

Themes	f
Mathematic	23
Turkish	15
Primary Reading and Writing	5
Physical Education	4
Science	4
Science of Life	1
Social Studies	1

When the classes in which class teachers use digital games in their teaching activities are examined in Table 8, it is seen that the majority of teachers use digital games in Mathematics (f=23) and Turkish (f=15) lessons. 5 of the teachers stated that they use digital games in Primary Reading and Writing, 4 in Physical Education, 4 in Science, 1 in Life Sciences, 1 in Social Studies. P14 and T26 expressed their views on this subject as follows:

T14: *"Every lesson obviously has its own games. For example, we use it in Turkish, there are games in mathematics, and then there are games in the body. Sometimes, when we can't go out in physical education classes, we play games on the smart board for physical education, which entertains the children."*

T26: *"...I use it in life studies, in Turkish, in mathematics, because I am currently in the 1st grade. When I was in the 4th grade, science, social studies and English were enjoyed by children. They already call these children the alpha generation because they are in the digital age. They like it, instead of learning just by listening to the book and the teacher, they learn by touching and having fun without realizing it."*

Findings Regarding the Sites where Class Teachers Use Digital Games in Teaching Activities

The teachers were asked about the sites where they use digital games in their teaching activities. The sites where class teachers use digital games in their teaching activities are given in Table 9. The data were classified into 6 themes.

Table 9. Sites Where Class Teachers Use Digital Games in Teaching Activities

Themes	f
Okulistik	10
Wordwall	8
Morpa Kampüs	7
EBA	3
Kahoot	1
MentalUP	1

When the sites where class teachers use digital games in their teaching activities are examined in Table 9, it is seen that the majority of teachers use the sites called Okulistik (f=10), Wordwall (f=8) and Morpa Kampüs (f=7). However, 3 of the teachers stated that they use EBA, 1 Kahoot, 1 MentalUP. T13, T18 and T26 expressed their views on this subject as follows:

T13: *"There is a website called Wordwall, I can directly find the games related to the subject and play very effective and beautiful games for children.*

T18: *"...You know Okulistik, then there are other different programs, there are game programs such as Wordwall and we use them."*

T26: *"...whether it be schoolistic, Morpa Campus... I work with Kahoot Quiz, wordwall studies, I teach my students by learning with love."*

Findings Concerning the Views of Classroom Teachers on Realization of Educational Goals Through Digital Games in Teaching Activities

Teachers were asked for their views on the realization of educational goals through digital games in teaching activities. The views of classroom teachers on the realization of educational goals through digital games are given in Table 10. The data were classified into 2 themes.

Table 10, Educational Goals Through Digital Games

Themes	f
Not enough	26
Educational goals can be achieved	4

When the views of teachers on the realization of educational goals through digital games are examined in Table 10, the majority of teachers (f=26) stated that digital games would not be sufficient for the realization of educational goals, while 4 of the teachers stated that educational goals could be achieved through digital games. T1, T10 and T15 expressed their views on this subject as follows:

T1: *"I think it can be realized because play is inevitable for students and it is a vital concept for children. Why shouldn't we use it in education? We can provide learning while having fun. So I think it will be very useful."*

T10: *"...I don't think it will all come true because I think it would be beneficial to give information by transferring it at some point."*

T15: *It cannot be fully realized, but it helps a lot in realizing educational goals. It does not seem possible to achieve educational goals using only digital games. Because that game can be used for reinforcement or to take what you have learned to an advanced level."*

Findings Regarding the Views of Classroom Teachers on the Effects of Digital Game-Based Teaching

Teachers were asked about the effects of digital game-based teaching. Views of class teachers about the effects of digital game-based teaching are given in Table 11 The data were classified into 2 themes and 17 sub-themes.

Table 11. Opinions of Class Teachers on the Effects of Digital Game-Based Teaching

Themes	Sub-themes	f
Positive Effects	Learning with Fun	15
	Attracting Attention	13
	Permanent Learning	12
	Quick Learning	5
	Motivation	5
	Reinforcing the learned knowledge	5
	Active Participation in Class	3
	Concretization	2
	Augmenting Digital Skills	1
	Development of Mental Skills	1
Negative Effects	Dependency	19
	Remaining the Lesson in the Background	12
	Physical Health Issues	8
	Communication Issues	5
	Focus Problem	3
	Mental Disorders	1
	Excessive Waste of Time	1

When Table 11 is examined, teachers learn the positive effects of digital game-based teaching by having fun (f=15), attracting attention (f=13), permanent learning (f=12), fast learning (f=5), motivation (f=5), reinforcement (f=5), active participation in the lesson (f=3), concretization (f=2), increase in digital skills (f=1) and development of mental skills (f=1). T13, T17 and T25 expressed their views on this subject as follows:

T13: *"...It also has effects in reinforcing the topics and increasing the permanence of the children in their minds"*

T17: *"So the child is both having fun and learning. So it has a huge impact on permanent learning."*

> *T25: "...this is one of the necessities of our age. It is necessary for children to have a necessary skill to be able to use the digital environment, children can learn to use digital media safely by playing games there, and they can also learn to use them correctly. I think that being active in digital environments, which is one of the requirements of our age, can be beneficial for children in this respect as well."*

According to Table 11, teachers affect the negative effects of digital game-based teaching on addiction (f=19), the lesson being in the background (f=12), physical health problems (f=8), communication problems (f=5), focusing problems (f). =3), mental disorders (f=1) and excessive loss of time (f=1). T9, T7 and T12 expressed their views on this subject as follows:

> *T9: "...after a certain period of time, it can cause students to focus on the next lesson or the next subject, which may cause a problem."*

> *T7: "...after a while, there may be some disconnection from the lesson. Since it is perceived as a game, it can sometimes deviate from the focus of the lesson.*

> *T12: "...even though they are educational, the child can only look at him like a game. That's why he can get away from the lesson and be willing to play that game all the time."*

3.11. Findings Concerning the Points that Classroom Teachers Pay Attention to in the Use of Digital Games in Teaching Activities

Teachers were asked about the points they paid attention to when using digital games in teaching activities. The points that class teachers pay attention to when using digital games in teaching activities are given in Table 12. The data were classified into 2 themes and 10 sub-themes.

Table 12. Points that Class Teachers Consider in Using Digital Games in Teaching Activities

Themes	Sub-themes	f
Preparation Phase	Subject Relevance	12
	Grade Level Eligibility	9
	Pedagogical Relevance	6
	Pre-Testing the Game	5
	Making a Plan	4
	Readiness	4
	Class size	2
	Teacher's Domination of the Digital Environment	6
Application	Equal Voice	4
	Time	4

In Table 12, when the points that the classroom teachers pay attention to in the use of digital games in teaching activities, the majority of the teachers stated that they pay attention to the games to be used in the preparation stage (f=12), the subject of the lesson (f=9) and the pedagogical aspect (f=6). . In addition, it is seen that the pre-testing of the game (f=5), making a plan (f=4), the readiness of the students (f=4) and the appropriate class size (f=2) are among the points of attention. T1 and T5 expressed their views on this subject as follows:

> *T1: "I think the whole lesson should not be a game, it should be used in the decision. You know, we should decide in advance where we will use it in the lesson and make a plan and program. We must use it appropriately, we must have seen the game before, before playing it to students, because when we open it suddenly, we can encounter different things."*

> *T5: "In other words, the material we use must be approved pedagogically for the game. It is not quite right for us to take this activity randomly, let me play this game, this game increases the attention span, it is good for giving that achievement in that activity. He must pass a pre-selection. I think it is necessary to investigate whether it is suitable for children, whether it is suitable for the age level of the child, whether it is suitable for the content of the activity. I think the teacher should put it through a preliminary examination, rather than just pick it up and do it right away."*

According to Table 12, it was seen that the teachers paid attention to being able to dominate the digital environment (f=6), giving equal rights to students (f=4) and time (f=4) during the implementation phase. T7, T9 and T14 expressed their views on this subject as follows:

> *T7: "First of all, teachers need to improve themselves in order to be more effective in the lessons. In this regard, in keeping up with the era, this is a very important thing. They can use the necessary activities after they have the necessary qualifications."*

T9: "A mutual time should be determined and agreed with the students, and it should be applied accordingly. There may be a problem when we exceed too much time."

T14: "Because children are at the age of play, they all want to participate in the game. I think it is very important to ensure equality in this matter, when one removes the other and does not remove the other, or when one removes the other twice and the other one is removed once, the child makes the calculation for it. I think teaching these needs to be a little sensitive and careful."

Findings Regarding the Opinions of Classroom Teachers about Digital Game Contents Presented in EBA

The teachers were asked for their opinions on the digital game contents presented in EBA. Views of classroom teachers on digital game contents presented in EBA are given in Table 13. The data were classified into 2 themes.

Table 13. Opinions of Class Teachers About Digital Game Contents Presented in EBA

Themes	f
Inadequate	29
Adequate	1

In Table 13, when the views of teachers and classroom teachers about digital game contents presented in EBA are examined, the majority of teachers (f=29) stated that digital game contents are insufficient. One teacher stated that it was sufficient. Teachers' views on this subject are as follows:

T18: "I don't find it adequate about primary school because we can't find anything we are looking for."

T19: "So I find it sufficient as a first grader because there is a lot of space, the pool of questions is too large, for example, or there were click games, I find them sufficient, especially when teaching letter education."

T21: "...not only pre-school games, but not other classes..."

T30: "...I think that EBA needs to be developed more, frankly..."

Findings Regarding Class Teachers' Suggestions for Digital Game Studies in EBA

Teachers were asked what kind of improvements can be made in EBA for digital games. Class teachers' suggestions for digital game studies in EBA are given in Table 14. The data were classified into 11 themes.

Table 14. Suggestions of Class Teachers for Digital Game Studies in EBA

Themes	f
The number of games should be increased	21
Teachers should be encouraged to produce games	4
Collaboration with other educational platforms	3
Regional differences should be taken into consideration	3
Game collection should be created	2
Teachers should be consulted	2
Content should be available without internet	2
Teachers should be trained	2
Mind games should be included	1
At the end of each unit must be games	1
Contents must be updated	1

When the suggestions of the class teachers regarding the digital game studies in EBA are examined in Table 14, the majority of the teachers (f=21) stated that the number of digital games in the EBA should be increased. T11, T21 and T22 expressed their views on this subject as follows:

T11: "So games related to the subject can be added, because they are really enjoyable. Especially since I am a primary school teacher, children see it as a game, when in fact they learn a teaching. I think that additions can be made there in this sense, in the context of digital games."

T21: "I think that interactive digital game contents that seem to be focused only on preschool should be developed a little more. Especially in the primary school section, interactive content needs to be increased."

T22: "I think that more content can be offered, different games and content can be produced, it may be for gains or something."

According to Table 14, teachers; teachers should be encouraged about game production (f=4), a game collection should be created (f=2), teachers' opinions should be sought (f=2), teachers should be trained (f=2). T23, T28 and T30 expressed their views on this subject as follows:

> T23: *"… teachers can be asked about this issue, teachers can be encouraged to write digital games. In this way, something happens, you know, if they can teach us the content instead of waiting for someone, we can actually do things within certain patterns very often, for example, we can actually design a game suitable for our current achievement. This is not a very difficult thing, EBA can teach us about it."*

> T28: *"…it can enable all teachers to participate actively, if, for instance, if all teachers do activities, if they upload these activities, they are given a reward, if they are given something in terms of reinforcement, that is, it can be developed in this way. Because there are very enthusiastic friends in this regard. You know, we have teacher friends who develop themselves in software, they are wasted, support can be obtained from them, in fact, it could be even better if a little more everyone gets involved."*

> T30: *"I think that teachers should come together and research which games will be useful here, and they can be new games. I think they should bring them together, create a pool and choose from there, because frankly, I don't see the content in EBA very well. As I said, I think that our teachers who are writers there should be a little more active and that we should establish a common collection pool together and choose the best ones from there."*

According to Table 14, teachers; regional differences should be taken into account (f=3), and the contents should be used without internet (f=2). T17 expressed his views on this subject as follows:

> T17: *"First of all, I want the EBA to reach everyone, for example, children, of course, none of them can enter properly because there is a village school, network problem, because of this or that, I could not benefit much for myself or my students."*

According to Table 14, 3 teachers stated that they should cooperate with other education platforms and 1 teacher stated that the content should be updated. T26 expressed his views on this subject as follows:

> T26: *"…as we are currently doing live lessons using the Zoom infrastructure, EBA can also make agreements with such international programs such as Kahoot, Wordwall, and prepare these activities by simply entering the EBA environment without downloading the teacher programs, so it would be better. Not every teacher understands these programs, and they need a little foreign language to function it. It may be more beneficial if it is over the EBA infrastructure. Anyone can access it, so many teachers are unaware of most of the programs that I have listed. EBA should also be updated, so they have still been using the Vitamin for years. Like an Okulistik, Morpa Campus, they do not constantly renew and update themselves."*

4. Argument, Result and Recommendations

Digital transformation that started with the development of technology has created a new generation that uses digital tools at the highest level, learns by doing, and has high-level thinking skills. This generation, called digital natives, lives differently, thinks differently, has fun and learns differently. In this regard, families and educators also have to apply to educational materials suitable for the characteristics of the new generation. Because this generation tends more towards visuality, music and movement instead of traditional education and training methods, and acquires information from digital environments (İnci et al., 2017).

According to the data obtained from the research, all of the teachers who participated in the research stated that they used materials in their teaching activities. The majority of the teachers stated that the teaching materials provide permanent learning and embody abstract concepts. Also, it has been seen that teaching materials provides important conveniences in terms of attracting the attention of the student, learning by doing, saving time, learning by having fun, increasing motivation and ensuring active participation in the lesson. In the study of Bozkurt and Akalın (2010), the more sensory organs of the participants in the learning process are addressed, the more permanent the learning acquired and it is stated that this could be possible with teaching materials.

When the lessons in which teachers use teaching materials are examined, it is seen that they mostly prefer digital games in mathematics lessons. Especially the use of digital games in this lesson may be due to the fact that there are too many abstract concepts in the content of the mathematics lesson.

The majority of the teachers participating in the research consider themselves competent in using technology and smart boards and use them. However, physical impossibilities (electricity, internet) can adversely affect the use of technology in lessons. The study conducted by Yıldız and Metin (2020), it was concluded that all of the participants used technological materials in their teaching activities.

The vast majority of teachers use digital games and have stated that it should be used in teaching activities in terms of adapting to the age, attracting students' attention, learning with fun, active participation in the lesson, permanent learning, reinforcing what has been learned, using technology in favor of education and fast learning. In the study of Öztürk and Gökdaş (2020), it was concluded that the digital teaching materials used in the lessons were used for reinforcement and evaluation and made the lesson fun. Some teachers, on the other hand, stated that digital games can lead to addiction and physical ailments, deviate from the purpose of the lesson and stated that they should be used at a limited level and when necessary. In Yıldırım's (2016) research, 53% of the participants thought that digital games would create addiction. While the result was evaluated as the negative effect of digital games; 49% of the participants stated that digital games are important and educational for them. This result was evaluated as the positive effect of digital games.

It has been seen that the majority of the teachers use digital games in their teaching activities and the most preferred course to use these games is mathematics. According to the data obtained, it has been seen that the educational sites where digital games are used the most are Okulistik and Wordwall. In addition to these, Morpa Campus, EBA, Kahoot and MentalUP sites are also used in teaching activities. It is seen that Kahoot and MentalUP sites are used by very few people. This may be because teachers do not know about these sites. Teachers find the content presented in EBA insufficient and state that the content should be increased. In the study of Yıldız and Metin (2020), it is seen that teachers prefer the education platforms called EBA, Morpa Campus and Okulistik. (Tinker, 2020). According to his study, the education platform with the highest awareness is EBA after it has seen that Okulistik and Morpa Campus have come in terms of awareness and usage.

The teachers who participated in the research stated that educational goals could not be achieved by using only digital games, but they were an important support in reaching the goals. Teachers stated digital game-based teaching has positive effects such as learning with fun, attracting attention, permanent learning, fast learning, motivation, reinforcement of what has been learned, active participation in the lesson, concretization, increase in digital skills, development of mental skills. Addiction, keeping yhe lesson in the background, physical health problems, communication problems, focusing problems, mental disorders and excessive time loss are among the negative effects.

Teachers have stated that using digital games in teaching activities is necessary to pay attention to the grade level, the subject of the lesson and its pedagogical suitability, the game being tried before, the inclusion of digital games in the lesson plan, the readiness of the students, the teachers' mastery of digital environments, the equal opportunity to give each student an equal say in the classroom, and the duration.

Based on the data obtained from the findings of the research, class teachers are of the opinion that it is necessary to use digital games in teaching activities, but these games should not replace the lesson and the teacher, but only an effective tool in achieving the purpose of the lesson. In addition, it has been concluded that the digital contents offered in EBA are insufficient and need to be improved. The following suggestions can be made regarding the results obtained: It is seen that the teachers participating in the research use technology in the classroom environment, but sometimes they experience physical problems (electricity, internet interruption). Technical infrastructure in schools can be improved for this issue. It has been observed that teachers only use certain educational platforms and do not have information about other platforms. In this regard, in-service trainings can be organized for teachers by the Ministry of National Education. The digital game contents offered in EBA are considered insufficient by the teachers. In this respect, the contents can be increased and updated by the Ministry of National Education. Besides, teachers can be trained on this subject and encouraged to write plays.

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