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A Literacy Proposal to Prevent the Negative Effects of Digital Games: The Digital Game Literacy Model

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Abstract

The aim of this study is to develop a digital game literacy model with educational and instructive content as a solution to prevent the negative effects of digital games. Since media literacy is included in the middle school curriculum, this developed model is planned to be applied to middle school students. The model will consist of four stages: the first stage is identifying the case (problem) and acting, the second stage is literacy education, the third stage is design and software education and the fourth stage is establishing connections, making sense, and offering solutions. Before applying the model to students, a comprehensive training for trainers will be implemented for middle school teachers who will provide the training. This 14-week program will provide training on media and communication, education and literacy, and design and software. After this training, the model will be piloted in a selected region, and if the results are positive, a general training program will be initiated. It is believed that the implementation of the digital game literacy model will create social awareness regarding the negative aspects of digital games and transform students into conscious individuals capable of evaluating games from all perspectives.

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Introduction

Playing games, an act as old as humanity itself, serves the purpose of preparing individuals for future life and gaining experience. In his book Homo Ludens (2015), Johan Huizinga emphasizes that humanity has intertwined itself with many different fields, from culture to art, literature to poetry, through the act of playing games, and that individuals can socialize through games. This influence of games, combined with technological advancements since the 1950s, has given rise to the first examples of digital games. While the Cathode Ray Tube, developed in 1947, is considered the ancestor of digital games, Spacewar, produced in 1962, stands out as the first interactive game. From this date onwards, rapidly developing digital games have increased their influence on social life and become a part of it. Following the popularity of Atari in the 1970s, the development of game consoles and computers has transformed digital games into a significant industry today.

Digital games first gained attention for their economic success. For example, Super Mario Bros., released in 1988, sold 7 million copies in the United States and 4 million in Japan, making Nintendo the most successful company in Japan in 1991 (Sheff, 1999, pp. 4-5). More recently, Grand Theft Auto holds a Guinness World Record for being the best-selling game in 24 hours and the highest-grossing game in 24 hours (Shift Delete, 2020). Over time, these economic successes of games have transcended the revenue streams offered by the sector, leading governments and institutions to begin using games as a tool for political communication. As a result, many countries, particularly the United States, have increased their investments in digital games and begun using them as a means of education, entertainment, and influencing the masses. This connection between digital games and political ideologies has, over time, led to games being used as tools for acts of violence, sexuality, hate speech, and Islamophobia. Acts of violence and hate speech have become more prevalent, particularly in games played simultaneously with users on online platforms. Given the impact of these negative actions on young children, the concept of literacy has emerged as a crucial area for discussion.

Mass media serve various functions in modern societies, including informing, educating, and entertaining. The broadcasting activities carried out by media organizations, particularly with the aim of informing the public, play a critical role in enabling individuals to question their attitudes and behaviors toward these tools and to understand how messages should be interpreted. Therefore, individuals' ability to evaluate media content consciously and with a critical perspective has become a fundamental requirement for a healthy social structure. In this context, the concept of media literacy defined as accessing media, developing a critical perspective, and raising awareness about media messages comes to the forefront (High Council for Media Literacy, 2011). The development of media literacy contributes to individuals transforming from passive recipients into active and questioning users. In line with these benefits offered by media literacy, literacy activities have, over time, been evaluated under subheadings such as digital literacy and new media literacy, influenced by digitalization. Steps taken to address the negative aspects of media and develop defenses against media texts through media literacy should now be discussed more comprehensively, focusing on the specific characteristics of digital games. Based on this idea, this study aims to present a digital game literacy model to address the aforementioned problems by highlighting the negative aspects of digital games.

This study will primarily discuss the effects of games on social structures in a digitalized society. This section will highlight the negative concepts influenced by digital games and review existing literature. The following section will examine the developments brought about by the concepts of literacy and digital literacy, which have evolved with new media technologies, by looking at the relationship between digital games and literacy. This section will also discuss literature on literacy activities for digital games and examine the conceptual framework of digital game literacy. Finally, the study will explain the stages of a conceptualized digital game literacy model by examining research and model proposals related to digital game literacy and will discuss the concept.

This study is expected to have positive effects on educating students about the concepts of digital games and literacy, and on mitigating the negative effects of digital games. It is anticipated that these effects will help students become healthier and more conscious individuals by keeping them away from negative elements. Therefore, the study is structured in a way that will contribute to the academic field by combining literacy and digital games and offering a model for solving the problem.

When examining studies on game literacy in Türkiye (Bayzan et al., 2024; Bayzan et al., 2023; Erdoğan & Çakin, 2024, Kılınçarslan, 2013; Akgöl, 2023) it is observed that literacy activities related to digital games generally focus on excessive usage times and negative effects. At this point, the lack of a comprehensive model proposal for game literacy is considered a significant deficiency. International studies (Zimmerman, 2013; Apperley & Beavis, 2013; Buckingham & Burn, 2007; Bourgonjon, 2014; Han et al., 2024) indicate that game literacy improves skills and design abilities and that its use as an important educational activity would be beneficial. In light of all this information, it is believed that focusing on the digital game literacy process and developing a digital game literacy model to raise public awareness would be beneficial.

Theoretical Framework

Digital Games and Social Impacts

Internet technology has led to the development of network connections with telecommunications and satellite systems around the world since the 1960s. The technology that developed after the Cold War strengthened the connection between societies and on the other hand caused changes in the social sphere. While digitalization and the development of computer technologies reveal the form of digitalization, digitalization developed due to computer technologies has turned into a structure that connects all new media networks in data and mass communication. In this context, concepts such as digital data, multimedia resources and computer technology have become dominant elements with digitalization (Van Dijk, 2016, pp. 78-79).

While digitalization brings many definitions in the classical sense to a virtual environment where visual elements are at the forefront and can be processed with data, the way for digitalization has been opened in many areas from literature to economy, from politics to communication. The act of playing games, which is as old as human history, has evolved into a virtual structure with digitalization technologies. In this context, the concept of digital games has begun to gain a place in the literature through game consoles and computers since the 1960s. Digital games, which initially came to the fore as a pursuit for entertainment and leisure activities, have become an important

part of the industry over time. So much so that digital games have turned into technological, cultural and economic works that can be evaluated from many aspects (Sezen, 2011, p. 145). However, in the field of education, games make significant contributions to the learning process by blending teaching methods and techniques (Savaş et al., 2022, p. 133).

The connection of digital games with many different fields is discussed mainly through the concepts of economic returns and culture industry. According to Binark and Bayraktutan-Sütcü (2008, pp. 41-42), digital games are one of the most important cultural industry products of digital and promotional capitalism and are produced for commodity value. While commodity production became a remarkable concept of the industry in the 1980s, today the economic revenues generated by games and their contributions to the industry have reached a remarkable level. As a result of this data, a significant number of people are employed in the gaming industry. More than 20 thousand people are employed in the UK alone, with the UK, USA and Japan taking the lead (Kerr, 2006, p. 41). Looking at more recent research, the report published by Newzoo (2025), which conducts market research on digital games, attracts attention. According to the report, the number of players worldwide reached 3.6 billion. A large part of this growth consists of mobile users.

When considering figures in Türkiye, the report of the company called Gaming in Turkey, which conducts research on the gaming industry, stands out. According to the last report (2024), the total number of players in Türkiye reached 48 million. Total player revenue is 810 million dollars. This sectoral success of digital games causes many countries to invest in the field and improve their control mechanisms on games. After the games reached such a high audience, the platform has become frequently used to establish political domination and imperialist policy. For example, the fact that the USA identifies its enemies as countries such as Russia and China in war-themed games such as Battlefield and Call of Duty Modern Warfare indicates that the USA uses digital games as a propaganda tool rather than seeing them as a simple entertainment tool (Sayar, 2021a, p. 133). When evaluated from this perspective, digital games have an important place in establishing and changing ideologies in societies through their technological arguments (Garite, 2003). According to Sicart (2003), capitalism and terrorism are emphasized in games such as The Sims and Counter Strike through the visual richness and fictional techniques used in the games.

The propagandist perspective, especially in war and survival themed games, includes themes such as violence and hate speech. Grossman and DeGaetano, in their study “Stop Teaching Our Kids to Kill” (2014), state that constantly developing video games increase the element of reality on the one hand, and on the other hand, bring attraction, violence, brutality and mayhem closer to reality. In their study on the effects of violence caused by digital games, Elson & Ferguson (2013) point out that games direct individuals to violence with the role of social effects and emphasize that this issue is an element that needs to be discussed. This element of violence, which is featured in single-player games, also shows itself in online games. The sense of competition increases in games where players coming together in certain clans participate online. This situation also blows polarization and hate speech.

Costa et al., (2021, p. 15) state that hate speech in digital games occurs mostly through online games and that hate

speech is used on game platforms and communities, at times in chat rooms and sometimes during the game, on issues such as nationality, gender, religion and sexuality. Gomez-Garcia et al., (2021) point out in their study on the refugee crisis that refugees are presented to users with a hated and rejected image through digital games.

Digital games also have significant power to influence users' preferences with their structure that combines technology and entertainment by taking advantage of the advantages offered by technology. Many games developed using Metaverse components offer different experiences to users. Games like Roblox and Second Life combine elements of human communication and interaction with the magic of games, making it possible for users to discover a new world (Güler & Savaş, 2022, p. 312). Thus, with the metaverse, individuals will have the opportunity to satisfy their desires that they could not imagine and realize in the digital game world and that will not be possible to realize in the future, they will be able to take on the identity they want, they will be able to make friends, shop, travel, etc. by being at the time and place they want. They will be able to carry out the activities easily (Mete, 2023, p. 312).

Digital games, which developed in a short time and left an impact all over the world, have become one of the important gears of the capitalist industry (Dyer-Witheford & De Peuter, 2009, p. 14). Games, which are accepted and consumed by many segments of society, are offered to users through many concepts mentioned above. As a result of this situation, it became clear what kind of precautions individuals should take against the negative effects of digital games and the concept of literacy began to be discussed.

New Media Technologies and Digital Literacy

The diversifying structure of mass media has led to an increase in research on consumers since the 1950s. Studies on how individuals are affected by these tools and the effects of mass media on society have brought the concept of literacy to the fore. In this context, studies on the cultivation theory, the magic bullet theory, and other related theories used to influence mass audiences provide an important theoretical framework aimed at explaining the effects of media on individuals and revealing how these effects shape the social structure. Studies on how people, especially children, receive media texts and what kind of traces these effects leave on social life have attracted the attention of various non-governmental organizations and global unions within an academic discipline since the 1980s. In this context, UNESCO, in the Grunwald Declaration on the media education published in 1982, laid the foundation of media literacy and emphasized that educational steps should be taken in order to increase criticality among media users and develop knowledge, skills and attitudes (Binark & Bek, 2010, p. 52). In this context, individuals with media literacy awareness are defined as people who know media tools, reach them, understand media messages and produce solutions by evaluating the messages (Aydeniz, 2012, p. 8). Binark & Bek (2010, p. 54) emphasize the educational function of media literacy and point out that a media literate individual should be someone who knows the media industry, has a good command of the content of media texts, and has a comprehensive perspective on media.

This importance of the concept of media literacy has been in connection with technological developments throughout history. With the development of new media technologies, the transportation network to the masses

has increased, and it has also enabled the digitalization of the concept of literacy. According to Kellner (2014, p. 420), media literacy is more important than ever in the new multi-media environment. New literacy media representations emerging with new media, against the inequalities of mainstream media, offer advantages in understanding the world and constructing images. These advantages offered by new media environments have drawn attention to the concept of digitization and digitality. Thus, the emerging concept of digital literacy is defined as the ability to understand and use information in multiple formats from a wide variety of sources when presented through computers (Gilster, 1997, p. 1). According to Dobson & Willinsky (2009, p. 286), digital literacy is the transfer of read and written texts as digital data in electronic environments. Digital literacy, which contributes to individuals' awareness of media texts in the electronic environment, is defined as the set of competencies required to use digital technologies effectively in social, cultural and economic fields, to evaluate information and information sources, to be aware of the risks brought by digital transformation and, in general terms, to adapt to the digital age. (Bayrakcı, 2020, p. 16).

Digital Games, Literacy Discussions

Games, which have gained a new form with the concept of digitalization, have been a controversial concept in recent years when literacy discussions have gained importance. As stated in the second part of the study, conceptual discussions about digital games are generally conducted on the harms of games. While many studies mention games as a major problem and addiction factor (Fisher, 1994, p. 551), it is pointed out that games cause psychological and physical problems in individuals (Griffiths & Meredith, 2009, p. 248). On the other hand, there are also studies on the positive contributions of games. In the Result Report of the Child and Family Guidance Workshop for Digital Games (2017) published by the Ministry of Family and Social Services, it is emphasized that digital games can be used as educational materials, contribute to foreign language learning, increase the ability to make quick decisions and reinforce technological skills. When evaluations are made regarding the literacy-based approach, it is seen that the contributions of digital games to the field of literacy are mainly carried out through the educational function.

According to Yengin (2011, pp. 24-25), digital games attract attention as an important educational tool. The information conveyed through games is reinforced with applied studies. For this reason, the information conveyed to students is both learned faster and retained in mind for a longer time. In this respect, digital games are used as an important communication medium with their features that can direct the educational lives of students. Gros (2007, pp. 35-36) states in study on the achievements of children through digital games that children gain advantages such as learning information, transferring it to their environment and creating a competitive environment with digital games. In their research on the use of computer games in English classes, Beavis et al., (2009) state that children participate in online digital culture through computer games, and thus digital literacy learning increases. Thus, it is stated that children's pedagogy-centered literacy experiences will provide important opportunities for their development.

Considering the research conducted, it is seen that a new form of literacy has emerged through digital games and that studies in this field are essential. Nowadays, when the concept of digital game literacy is being discussed, it

is thought that comprehensive studies should be carried out to determine the negative aspects of digital games and to find solutions to the problems through literacy activities.

Methodology

Purpose of the Study

Digital games attract attention as an important economic element with the success they have achieved in the entertainment industry. In addition, games are used as an important means of communication and interaction in the social sphere. Considering Generation Z's interest in digital games and their high gaming hours (Sayar, 2021b), literacy activities related to digital games are gaining importance. The report "Digital Game Playing Habits of Secondary and High School Students in Turkey" published by the Information Technologies and Communication Authority supports this situation. According to the report (Bayzan et al., 2024, p. 20), when looking at the game addiction levels of high school and middle school students, it is seen that high school students are in a very risky position with 6.4 percent and in a medium risk position with 28.3 percent. Among secondary school students, the high-risk group is 7.3 percent and the medium risk group is 28.1 percent. The results show that approximately 35 percent of secondary school and high school students are in the gaming addiction category, and this is reported as a serious risk. A study conducted on the internet use and digital literacy skills of children in Turkey shows that nearly half of the children face problems on the internet that may pose a danger to them or cause a psychological problem such as cyberbullying, obscene content, threats, harassment, or a traumatic event. (Bayzan et al., 2023, p. 1356).

In line with this information, the aim of the study is to develop a digital game literacy model with educational and instructive content as a solution to prevent the negative effects of digital games. In conceptualizing the model created for the study, the works of Zimmerman (2013), Apperley and Beavis (2013), Buckingham and Burn (2007), Bourgonjon (2014), Han et al., (2024), Akgöl (2023), Kılınçarslan (2013), Erdoğan and Çakin (2024) on game literacy, which will be explained in detail below, will be taken as reference. Here, the ideas put forward by the authors regarding the concept will be discussed and its positive and negative aspects will be examined and evaluated, and the concept will be developed and a model specific to Türkiye will be created.

Digital Game Literacy Model

The conceptual framework of this study was determined by selecting appropriate examples from studies listed in Google Scholar, Web of Science, and Scopus databases using the keyword "digital game literacy," in order to create the model. As a result of the research, the works of Zimmerman (2013), Apperley and Beavis (2013), Buckingham and Burn (2007), Bourgonjon (2014), Han et al., (2024), Akgöl (2023), Kılınçarslan (2013), Erdoğan and Çakin (2024) works were found.

Zimmerman (2013) gathers digital game literacy around 3 main elements in his study titled "Gaming Literacy: Game Design as a Model for Literacy in the Twenty-First Century". These are listed as "system", "playing the game" and "design". Zimmerman states that these 3 concepts should be considered together and emphasizes that

the concepts represent a new set of cognitive, creative and social skills. In Zimmerman's definition, system is listed as seeing the world as a complex, constantly changing and dynamic part with mutual relationships and understanding how these structures function (2013, p. 158). In this context, games are called a system because they are governed by mathematical rules. Playing the game emphasizes acting and here rules and human elements come to the fore. Thus, the normative nature of the game makes it an important part of literacy. The last concept, design, is the key concept of game literacy and in many ways helps to understand the traditional idea of literacy as understanding and creating meaning. Design as the creation of meaning activates the magic circle and designers arrive at contexts that in turn create meaning. Although design comes in many forms, from architecture to industrial design, games are incredibly well suited to examining how meaning is made (Zimmerman, 2013, pp. 161-162). In this context, Zimmerman (2013, p. 163-164) points out that game literacy can be carried out effectively by playing games, making games, studying games, coding games and taking part in game communities.

Apperley & Beavis (2013), offer solutions regarding game literacy, focus on two basic models in digital game literacy. The first of these is games as action and the second is games as text. Apperley & Beavis emphasize three elements in games as action. These are “design”, “action” and “situation”. The action underscores the complex, contradictory relationship between the player and the digital game. In other words, it is emphasized that the game becomes meaningful when the player acts. Because actions determine how players will use their avatars, virtual playgrounds and the objects within them. The second concept, design, includes the production element in digital games that players encounter and interact with during the game. Design also involves creating paratexts, re-presenting and re-contextualizing information from the games. Thus, design literacy contributes to the individual's understanding of the game world (Apperley & Beavis, 2013, p. 4). The last concept, situation, is important in terms of conceptualizing the areas where digital games are placed. Examining the gaming situation highlights the learning that takes place, the sociality, and how digital gaming is linked to other ordinary daily activities. This concept provides a space for practitioners to focus on how students' out-of-school literacy is developed through digital play, without excluding other environmental factors (Apperley & Beavis, 2013, pp. 4-5). Games as texts, another concept emphasized by Apperley & Beavis, reveal the context of literacy and learning outcomes. With this concept, digital players grasp the importance of meaning in processes such as social values, identity and community formation through texts (Apperley & Beavis, 2013, pp. 5-7).

In their work, “Game Literacy in Theory and Practice” (2007), Buckingham & Burn focused not so much on providing a theoretical perspective on digital game literacy, but rather on what the concept should include and what functions it should fulfill. The authors also emphasized that the concept of game literacy could have a powerful potential for benefit in the field of education, arguing that developing the concept during the content creation phases would be beneficial.

In his work “The Meaning and Relevance of Video Game Literacy” (2014), Bourgonjon argues that video games should not be analyzed as traditional narrative texts. The author emphasizes that video game literacy is a necessity to help us understand video games by critically evaluating them. Han et al., (2024), in their study titled “Comparing the effectiveness of game literacy education and game coding education in improving problematic internet gaming”, state that game coding education increases game addiction and contributes to a better

understanding of the concept of game literacy.

The study titled " Computer Games Literacy of Children Case Study: Ghost in the Shell Stand Alone Complex Game", conducted by Yasemin Kılınçarslan in 2013, attracts attention in Türkiye. Kılınçarslan draws attention to the mental and physical activities that computer games create in individuals through the sample he determined in this study. Although the study does not directly present a game model, it emphasizes the changes of games on perceptual effects by emphasizing that users develop skills such as creating a digital environment, thinking and processing information through computer games (Kılınçarslan, 2013).

Oğuzcan Akgöl, in his study titled “Developing Risks in the context of Content and Generation Differences in Digital Games: A Review on the Concept of Game Literacy in Turkey”, measured how the content, visuals and texts in digital games are perceived in different age groups. Akgöl also determined awareness levels and investigated how risk perception occurs in different age groups. In the study in which the game literacy scale was developed, game literacy has the potential to be a determining factor in users' awareness of the text and visuals in the game content. Akgöl also points out that the developed scale can be used in subsequent studies to analyze the variables that game literacy is intended to be measured in connection with different research topics (Akgöl, 2023).

Finally, Erdoğan & Çakir (2024), in their study titled "A Research for The Determination The Digital Game Literacy Level: The Case Of Çanakkale," measured the level of awareness regarding digital game literacy among individuals who play digital games in Çanakkale province. When all studies are evaluated, Apperley & Beavis point out design, players' experience and textual meaningfulness in digital game literacy applications and emphasize that the whole of these concepts will form an important combination and that the concepts can be presented as solution suggestions in game literacy applications. Because concepts contribute to the awareness of players through experiences and to produce solutions to problems. Zimmerman states that processes such as coding, playing and participating in games can contribute to literacy. Han et al., discuss the effects of game coding education on literacy, while Erdoğan & Çakir address gaming tendencies and preferences. While Kılınçarslan states that games will contribute to the cognitive and physical activities of individuals, Akgöl states that game literacy will contribute to the consciousness and awareness levels of users. Although all the perspectives have examined the situation independently of each other, they have some shortcomings in terms of application. Especially in field studies, it is not clearly stated how the methods will be established. In this regard, in this study, which was prepared to find solutions to the problems by drawing attention to the negative aspects of digital games, a model proposal was created by making use of digital game literacy studies in the literature and conceptual solution suggestions.

The Digital Game Literacy Model presented consists of four stages. These;

1- Identifying the case (problem) and acting,

2- Literacy education,

3- Design and software training,

4- Establishing connections, making sense, and offering solutions.

The revealed model and the four related items benefit from the positive aspects of the literature studies mentioned above. In addition, the items were developed to create a model for Türkiye by focusing on the deficiencies of the studies, especially in terms of implementation. In the implementation of the model, it is aimed to first form a board by selecting expert academicians who have done studies in the field. In this activity, which will be carried out jointly by the Ministry of National Education and the Council of Higher Education, the academicians selected will organize a 14-week training and a comprehensive training for teachers who teach these courses, especially in secondary schools where Media Literacy education is given, in a pilot region determined by Council of Higher Education and Ministry of National Education. The training is planned to be composed of the following 3 main headings:

1- Media and communication

2- Education and literacy

3- Design and software.

The 3 main concepts determined will contain some subheadings. The subheadings of the first concept, media and communication were determined as new media technologies, digitalization and digital games. The main element targeted under this heading is for teachers to be aware of the innovations created by new media technologies on communication doorstep and to be informed about the changes brought about by digitalization and, accordingly, digital games.

The second main topic will be education and literacy, especially literacy activities. The main element targeted with this title is to create an idea about what kind of advantages and benefits the digital games infrastructure and the concept of education and especially literacy will provide to teachers. The last title is the design and software title. The main purpose of adding this title is for teachers to have an idea about how the design and production phase of games takes place.

After the training to be given within the context of the main headings specified above within a date determined by the Board, it is planned that the teachers will reach the sufficient level and the training given to the teachers will be transferred to secondary school students under the name of Digital Game Literacy course as of the next academic year. After the one-year pilot training, it is planned to spread the training given to the teachers of the course to all regions respectively. The digital game literacy model is planned to be based on the four stages listed below.

Stages

First stage is identifying the case (problem) and acting. At this stage, it is planned to benefit from the first of the main concepts explained above, media and communication. It is essential to convey to the participants the positive and negative effects of the media, as well as to explain the changes brought about by digitalization, the development process of games, and the position of the users at this point. Especially the fact that digital games have a human-oriented structure and are intertwined with many social elements is important in determining the case.

Here, participants will be expected to focus on the negativities caused by digital games as a sub-heading after the basic media and communication training will be given. Because it is thought that a more effective way will be taken in determining the case after the infrastructure provided for digital games through media and communication training. For example, the frequent use of propaganda and violent elements created through digital games and the spread of hate speech in online games are some of the problems caused by games. It is envisaged that the above-mentioned educational areas are needed for these problems to be perceived and understood first by teachers and then by students.

Another element expected from participants at this stage is to develop the ability to get to the root of the problem. As a result of conceptual discussions, especially on negative elements, the question "In what respect do digital games create negative effects on individuals?" The question is expected to be answered. Thus, it is envisaged that with case analysis to be determined, solutions will be produced regarding what kind of precautions individuals should take at the point of consumption and how they can protect themselves in the economic chain created by violence, hate speech, Islamophobic elements or games.

After all these approaches and training, participants will be expected to act. The process of acting will be achieved by transferring in-depth literature knowledge regarding the area in which the problem is identified in digital games. For example, if a problem has been identified regarding the effects of games on the Islamophobia process, at this stage it will be aimed to conduct comprehensive discussions on the relationship between digital games and Islamophobia and to provide information to the participants on this subject. The aim here is to ensure that the person reaches the level of being able to conduct a conceptual discussion on the subject he will focus on. This knowledge will serve as a preliminary preparation for the next step, literacy education.

Second stage is literacy education. After determining the case and transferring the relevant literature, it is expected to benefit from the concepts of education, which is the second main heading, and literacy, as the sub-heading. The main purpose of conveying the topics of education and literacy is to determine what kind of precautions the participants should take regarding the emerging case. Identifying the problem alone may be incomplete at this point. Therefore, after identifying the problem, it is important to determine what path to follow for the solution.

At this stage, it is aimed to create a discussion environment for the participants about the importance of literacy, media literacy, producing a critical perspective on media texts, analyzing media texts, learning the nature of digital games, and what kind of solutions literacy will offer to the problems caused by negative elements in digital games. The main aim of these discussions is to teach individuals what precautions they should take to find solutions to problems and to determine how the solution suggestions for the problems should be ranked.

Third stage is design and software training. At this stage, the third main topic, design and software training, will be used. Design and software play an important role in the process. Because evaluating the process only from a theoretical and conceptual perspective may create some deficiencies. Therefore, design and software concepts will be looked at. The focus will be on the outlines of the design, the elements to be considered in the design, and the power of the design to influence the person. It is also planned to provide training to the participants on

programs such as Unity, Unreal Engine and Construct, which are used in the design and software of the games. The main aim of this training is to teach students the design and software process of games and to create a reference for positive games to be made in the future. The design and software process offer advantages such as creating a prototype for games and being able to test the game. For this reason, it will provide an advantage for students to understand the nature of the game, create new ideas and designs, and implement these ideas during the game literacy process.

Fourth stage is an establishing connections, making sense, and offering solutions. As a result of three successfully completed stages, participants will be expected to create a solution proposal. The solution proposal will basically be based on making an appropriate analysis of the problem, then making sense of it by supporting it with education and finally putting this problem into practice with design and trying to create an alternative. At this stage, students will be asked to prepare a comprehensive report on the problem they are working on. The report will include theoretical information about the problem, solution suggestions and suggestions on how to eliminate the problem in the application field.

With the report to be prepared as a result of all these approaches, the last leg of digital game literacy will be completed and participants will have the ability to make sense of the process with the training they receive at both the production and consumption points. In addition, it will reach a level where it can offer an alternative solution to the problem with the production dynamics it reveals.

Conclusions and Recommendations

In today's world, where digitalization is rapidly advancing, the evolution of games has been particularly evident in the last 20 years. This transformation has led games to evolve from being merely a form of entertainment into a multidimensional structure with economic, cultural, and social impacts. The economic and sociological success of many games has led to increased academic interest in digital games. The issue of conceptualization of games, which started in the late 1990s, has turned into an accepted academic research field since the mid-2000s. While the success of the games and their impact on society are at the center of positive and negative discussions, it is thought that the discussions will be taken to an even higher level with the emergence of the metaverse universe. Because it is predicted that the new universe will take games away from the individual lives of individuals and towards a new world where they can make decisions together. In such a world order, the effects of games need to be discussed well. Propaganda activities implemented through games, the fact that games are an important flagship of the economic industry, and the increase in various political activities carried out through games indicate how important the value of games and the need to think about them are.

Any action carried out through games brings to mind the question of what kind of precautions users take or have to take regarding the activities carried out through these platforms. At the center of these discussions, the concept of literacy gains value. In addition to the precautions to be taken against the negative effects of the media and public awareness activities through media literacy, media-like activities should be established in this field through digital game literacy. This study develops a four-stage Digital Game Literacy model based on three core concepts,

aiming to create an educational and instructive model to prevent the negative effects of digital games. Each of the 4 stages is designed to be interconnected and provide preparation for the next step. The process, which will begin with the identification of the problem, will be reinforced with action. It is thought that design and software education is important after individuals obtain theoretical knowledge on the subject through literacy education. Because combining theoretical knowledge with practice is important for participants to evaluate the subject from a more technical perspective. It is also thought that this stage will be useful in terms of producing useful content from an alternative perspective. Finally, it is thought that conducting a study that can look at the whole picture by making sense of the entire process and reporting the obtained data and placing the training activity in a systematic structure would be a step in the right direction.

Considering the suggestions for the implementation of the 4 stages emphasized in the creation of the model, it is thought that it would be correct to start the process with the secondary school period. The digital game literacy model, which will reinforce the media literacy courses given in this period, should be applied primarily to the teachers who teach the courses, with a committee composed of experts in the field. After the competencies provided by the teachers, it is planned to transfer the program first to the students in the pilot regions and then to other regions in line with the feedback received.

It is envisaged that with the model to be implemented, a significant social awareness will be created regarding the negative aspects of digital games. As a matter of fact, it is thought that with this educational process, which will be carried out step by step, a working field can be created where games can be evaluated objectively from every aspect, discussions can be carried out, social research can be conducted and alternative contents can be produced. When evaluated from this perspective, it is envisaged that, thanks to the Digital Game Literacy Model, the necessary precautions can be taken against the negative elements of digital games and a social literacy process can be established.

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