



Examining The Effect of Minecraft Game On 5th Grade Students' Attitudes and Motivation Towards Social Studies Lesson

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Abstract:

This study aimed to examine Minecraft game's effect on 5th grade students' attitudes and motivation towards social studies course. A quasi-experimental design with a pretest-posttest control group was used; the study group consisted of 5th grade students studying in a private school. In the study conducted in the Fall Semester of the 2023-2024 Academic Year, there were 16 students in the experimental group and 17 students in the control group. The data collected with the "Attitude Scale Towards Social Studies Course" and "Motivation Scale Towards Social Studies Course" were analyzed by using 'Independent Samples t-Test' and 'Paired Samples t-Test'. It was concluded that the Minecraft game increased attitudes and motivation towards the social studies course and there was a significant difference in favor of the experimental group. It is recommended that teachers use the course contents designed with digital games and conduct studies examining the effect of digital games on academic achievement.

Keywords: Social studies, minecraft, digital game-based learning.

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INTRODUCTION

The emergence of information technologies with the development of technology has contributed to the formation of information societies and necessitated the use of new developments in the field of education (Uşun, 2004). Computer technology benefits people as a source of information, a learning tool, a storage tool, a fast and easy communication tool, and a tool to support knowledge (Sunal & Haas, 2005). The use of technology in education allows students to increase their interest in lessons, meet their individual needs, and create a variety of learning environments (Yalın, 2003). The use of computer technology in education positively increases students' capacity to acquire knowledge and create a product (Heafner, 2004).

Games, which allow children to explore the world from the moment they are born, have an educational and instructive aspect as well as contributing to their cognitive, sensory, and psychomotor development (Başal, 2017). With the impact of the digital age, it is known that people of all ages play digital games and that these games are started in early childhood (Mustafaoğlu & Yasacı, 2018). Looking at the internet usage data of children in the 6-15 age group in Turkey, it was observed that the rate of internet usage in this age group increased from 50.8% in 2013 to 82.7% in 2021 (TUIK, 2021). Developments in the gaming industry and children's intense interest in digital games have revealed the need to include gaming in education (Say & Bağ, 2017; İşçi & Yeşiltaş, 2020). According to Bayırtepe and Tüzün (2007), digital games positively increase students' motivation, academic achievement, and self-efficacy perceptions; in addition, according to Mayo's (2009) research results, educational digital games also support academic achievement and permanent learning.

Digital game-based learning facilitates the integration of subject content into games, enabling students to apply their knowledge to real-world scenarios, engage with challenges that promote effort, and experience a sense of achievement that enhances self-esteem (Nadeem, Oroszlanyova & Wael Farag, 2023). With the increasing popularity of digital games across all age groups, digital game-based learning is being used as an important tool that promotes active engagement and a fun learning experience in both traditional and online learning environments by increasing students' motivation (Serrano, 2019; Nadeem, Oroszlanyova & Wael Farag, 2023). Contrary to their harms, digital games can also offer significant educational benefits when they are aligned with appropriate goals and objectives (Tüzün et al., 2013). Gee (2003) emphasized that digital games can have both advantages and disadvantages depending on their intended use and that it is unreasonable to focus only on their negative aspects and ignore their potential for educational purposes.

Minecraft, an educational digital game, allows players to create a shared world using basic blocks (Rospigliosi, 2022). The world of Minecraft is a vast and infinite realm, with many different biomes and regions to create a structure or a building (Minecraft, n.d.). The Minecraft game, which supports improvement and expansion activities in education and provides benefits and convenience for teachers in the process of developing teaching materials, allows students to take their learning environment out of school thanks to its lack of time, space and access restrictions, while the freedom and wide content area offered by the game enables teachers to design meaningful scenarios that reflect the curriculum and develop digital teaching materials (Bar-el & Ringland, 2011; Wager & Parks, 2014). The Minecraft game and virtual environments allow students to develop 21st-century skills, encouraging creativity, critical thinking, and collaboration while supporting students of different age groups to design buildings and construct cultural heritage and historical monuments (Overby & Jones, 2015).

Thanks to integrating technology into learning environments, digital games can be used effectively in social studies courses (Walls, 2012). The use of digital games in the social studies classroom contributes to the development of students' skills such as problem-solving, inquiry, and adaptability while also providing an online platform to apply ideas, theories, and topics discussed in class, allowing students to interact with digital worlds and concretize abstract concepts commonly found in the social studies classroom (Maguth, et al., 2015). The Minecraft game used in the social studies course provides students with the opportunity to build historical assets and examine existing ones, allowing students to develop a deep understanding of the structures and civilizations they study through the construction of virtual places, a process that requires detailed planning and prior knowledge (Baek, et al., 2020). Furthermore, world-building and exploration in Minecraft enhance students' global engagement skills (Balnaves, 2018).

When the Minecraft game is considered within the scope of the social studies course; Minecraft game can contribute to the cooperation skill and solidarity value targeted to be gained in the Social Studies Curriculum (SSC) in the sense that it allows students to develop cooperation and teamwork skills since it is a multiplayer game; it can contribute to the skills of perceiving time and chronology and perceiving change and continuity targeted to be gained in the SSC by helping students develop a better understanding of past periods by animating historical and cultural structures; contribute to the values of responsibility, saving and solidarity as well as the skills of self-regulation, decision-making and financial literacy in the SSC in terms of providing students with the opportunity to gain social responsibility and management skills in a virtual world and providing students with experience in issues such as managing resources, sustaining the economy and maintaining social order in the world they create It is thought that it can contribute to the problem solving skill in the SSC in the sense that it can provide students with the ability to solve problems by using their creativity and develop their strategic thinking and analytical skills to overcome the difficulties they encounter in the game; it is thought that it can contribute to the digital literacy skill in the SSC in the sense that it can provide students with the skills to navigate and interact effectively in the digital world and help them develop digital literacy skills, which is an essential skill in today's technology-oriented world.

When evaluating the effect of the Minecraft game on the attitudes and motivation of social studies course students, it can be said that it offers an interactive and fun learning experience different from traditional classroom environments. In-game activities make the learning process more attractive and enjoyable by allowing students to participate more actively in the course content. The opportunity for students to examine the course topics interactively and participate in group work can contribute to developing their social skills. Thanks to the concretization possibilities of the Minecraft game, digital content can be created that animates historical events and geography topics. With all these contributions, the use of Minecraft game in social studies courses can attract students' interest and make learning fun through the game; therefore, it is thought that the use of Minecraft game in social studies course can have positive effects on students' attitudes and motivation. When the related literature is examined, Sarıçam (2019) examined the effect of Science, Technology, Engineering and Mathematics (STEM) applications using digital games on students' interest in STEM fields and scientific creativity within the 6th grade science course scope. Similarly, Nigar (2022) examined the effect of Minecraft Edu applications on 9th-grade students' learning of “Our Land Guide: Isohypsés” of 9th-grade students.

Studies in the field of social studies teaching were examined. İşçi and Yeşiltaş (2020) examined the use of digital game development software in social studies teaching and the opinions of pre-service social studies teachers about it. Görmez and Altun (2022) examined the opinions of social studies teachers about using digital games in their lessons. Erkan and Kerimgil Çelik (2023) examined the effect of teaching with educational games and digital games used in social studies courses on 4th grade students' academic achievement in social studies courses and their attitudes towards social studies courses. Kaçar (2023) analysed the research on educational digital games in the field of social studies education in Turkey between 2000 and 2023 through meta-synthesis. Kandemir (2023) examined the effect of the 6th grade social studies course supported by digital stories and educational games on students' academic achievement, attitudes towards the course and social skills. However, no study was found to examine the effect of the teaching material prepared using Minecraft game on students' attitudes and motivation in social studies courses. This study is expected to fill this gap in literature.

Purpose of the Study

This study aims to examine Minecraft game's effect on 5th grade students' attitudes and motivation towards social studies course. In this context, answers to the following questions are sought.

1. Is there a significant difference in the motivation pretest scores between the experimental group in which the learning environment designed with Minecraft game was used and the control group in which the education by the SSC was applied?
2. Is there a significant difference in the motivation posttest scores between the experimental group in which the learning environment designed with Minecraft game was used and the control group in which the education by the SSC was applied?
3. Is there a significant difference in the motivation pretest and posttest scores of the control group in which education by the SSC was applied?
4. Is there a significant difference in the experimental group's motivation pretest and posttest scores using the learning environment designed with Minecraft game?
5. Is there a significant difference in attitude pretest scores between the experimental group in which the learning environment designed with the Minecraft game was used and the control group in which education by the SSC was applied?
6. Is there a significant difference in attitude posttest scores between the experimental group in which the learning environment designed with the Minecraft game was used and the control group in which the education by the SSC was applied?
7. Is there a significant difference in the attitude pretest and posttest scores of the control group in which education by the SSC was applied?
8. Is there a significant difference in the experimental group's attitude pretest and posttest scores using the learning environment designed with Minecraft game?

METHOD

Research Design

In this study, the quasi-experimental method, which is one of the quantitative research methods, was preferred. The researcher decided to classify the groups as experimental and control groups based on their own evaluation. This decision transformed the study into a quasi-experimental research design (Şimşek, 2018). The experimental method is a research model in which the data to be observed are produced under the direct control of the researcher in order to determine

cause-effect relationships (Karasar, 2010). It is also the process of directing the independent variable by the researcher and comparing the participants' measurements of the dependent variable in at least two different conditions (Büyüköztürk, et al., 2016).

Digital game-based learning integrates subject content into games, enabling students to apply their knowledge to real-world scenarios while facing challenges and obstacles that increase motivation and make the learning process more fun (Nadeem, Oroszlanyova & Wael Farag, 2023). For this reason, "Digital Game-Based Learning Model" was used in the experimental group to determine the effect of Minecraft game on students' attitudes and motivation towards social studies course. The strategy of teaching through presentation is almost always used as a compulsory tool in conducting lessons with basic methods such as direct expression method and question-answer technique, especially in social studies courses where oral expression is common (Karasu Avcı, 2021.). For this reason, the researcher preferred to use "Expository Teaching Strategies" for the control group.

This study used the pretest-posttest model with control group as experimental research. In the pretest-posttest control group model, there are two groups, the experimental group, and the control group, formed by random assignment method, and measurements are carried out before and after the experiment in both groups (Karasar, 2010). In this design, the methods, activities, and independent variables used in the experimental group should not be applied in the control group, and this situation should be kept under control (Sönmez & Alacapınar, 2016).

Study Group

While forming the study group of the research, the purposive sampling method was preferred in sample selection. "Purposive sampling allows in-depth research by selecting information-rich situations depending on the purpose of the study" (Büyüköztürk et al., 2016, p. 90). In determining the participant groups, the criterion sampling method, which is one of the purposive sampling methods, was applied. This sampling method involves studying and analyzing all situations that meet specific predetermined importance criteria (Patton, 2014). "The criteria or criteria mentioned here can be created by the researcher or a previously prepared list of criteria can be used" (Yıldırım & Şimşek, 2018, p. 122).

Accordingly, in selecting the sample, it was taken into consideration that the class size was small, the school had a computer technology infrastructure, and the participants were 5th-grade students. Simple random sampling was used to select the experimental and control groups. Simple random sampling was used to select the experimental and control groups. "The method in which selected units are sampled by giving each sampling unit an equal probability of selection is called simple random sampling" (Büyüköztürk, et al., 2016, p. 85).

The study group research consists of 5th-grade students of a private secondary school in the Yenimahalle district of Ankara province. The private school was preferred because the computers in the laboratories were adequately equipped, and the internet infrastructure was good. The application was carried out in two different classes, one in the control group and the other in the experimental group.

Data Collection Tools

Social Studies Attitude Scale

The "Social Studies Attitude Scale" developed by Çetinkaya and Hatay Uçar (2017) was used to collect the attitude-related data of the study. There are 29 items and 4 factors in the scale.

The scale factors were named as “interest”, “using knowledge”, “course content” and “reluctance” respectively. Çetinkaya and Hatay Uçar (2017) used exploratory factor analysis for the validity of the scale and “Kaiser Meyer Olkin” and “Bartlett Sphericity Test” to determine the appropriateness of the factor analysis. As a result of these analyses, it was concluded that the scale consisted of 4 factors. For the reliability of the scale, the Cronbach Alpha coefficient was calculated, and the result was 0,928, and as a result of the analysis, it was concluded that the scale developed was reliable. Çetinkaya and Hatay Uçar (2017) state that the scale is valid and reliable in line with these results.

Social Studies Course Motivation Scale

The “Social Studies Course Motivation Scale” developed by Gömleksiz and Kan (2012) was used to collect the motivation-related data for the study. This scale is a five-point Likert scale with 5 points (completely agree), 4 points (agree), 3 points (partially agree), 2 points (disagree) and 1 point (strongly disagree) and consists of 23 items. The Cronbach Alpha reliability coefficient of the scale was determined as ,792. Factor analysis was used to determine the validity of the scale, and “Kaiser Meyer Olkin” and “Bartlett Sphericity Test” were used to determine the appropriateness of factor analysis. As a result of the analysis, Kaiser Meyer Olkin value was found to be ,893, and Bartlett's test result was 5,261.

Data Analysis

The study data were analyzed in accordance with the nature of quantitative research. In order to determine the tests to be used in the data analysis, it was checked whether the pretest and posttest data showed normal distribution. In this context, the skewness and kurtosis values of the data were investigated. The data collected with the “Attitude Scale Towards Social Studies Course” and “Motivation Scale Towards Social Studies Course” were analyzed by using 'Independent Samples t-Test' and 'Paired Samples t-Test'.

The skewness value of the pretest data of the “Social Studies Course Motivation Scale” was found as ,10 and the kurtosis value as -,75. The skewness value of the posttest data of the said scale was found to be -1,17 and the kurtosis value was found to be ,70. The skewness value of the pretest data of the “Social Studies Attitude Scale” was found as -,96 and the kurtosis value was found as ,92. The skewness value of the posttest data was calculated as -1.11 and the kurtosis value as ,72. According to Tabachnick, Fidell, and Ullman (2013), parametric tests should be used when skewness and kurtosis values are between -1,5 and 1,5. In the study, since the kurtosis and skewness values were within the specified ranges, parametric tests were used in the analysis of both pretest and posttest data. Since there is one dependent and one independent variable in each scale, equal interval measurements are made, and two groups are included in the study, a t-test for independent variables is required (Davies, 2016). In this study, it was deemed appropriate to apply a t-test for independent samples to examine the difference between pretest and posttest data.

Implementation Process of the Research

In this study, the Minecraft game was used in the experimental group within the scope of the learning outcome “SS.5.2.1. Recognizes the important contributions of Anatolian and Mesopotamian civilizations to the history of humanity based on their tangible remains” in the 5th grade SSC. The reason for choosing this learning domain is that cultural heritages can be constructed concretely. The Minecraft game content designed by the researchers by the social studies outcomes reflects the geographical boundaries and characteristics of civilizations. In the preparation phase of the implementation process, the school's internet connection and computer

infrastructure were checked, and a pilot application was made. The application was carried out with the game setup completed in the computer laboratory. In the control group, the social studies teacher taught the same outcome using the expository teaching strategies in accordance with the SSC.

In the first week of the implementation, the researchers applied orientation about the Minecraft game to the experimental group of students. This orientation application consisted of basic Minecraft training. Before the application, the students were given information about the game tools in the Minecraft game, the keyboard control keys that should be used in the game, and the introduction to the game. During the implementation process, students were taught the game content, playing techniques, and directional control keys that they may encounter in the game. During this orientation process, a short trial version of the application was conducted in the computer laboratory to test the students' readiness and prepare them for the application. Computer competencies, internet infrastructure and speed tests were continuously checked during the orientation process.

In the second week of the implementation, students logged into the Minecraft server and were directed to the starting area from the teleportation point in the game. At the starting point, a train track prepared for students to travel between civilizations welcomed them, and after all students settled in their wagons, the first journey began. Their first stop was the gate to the Sumerian Civilization. Passing through the gate to the Sumerian Civilization, the students encountered the Ziggurat Temple and Sumerian city life. Taking turns visiting the warehouse, school and observatory floors of the Ziggurat, the students discovered the function of each floor of the temple and the contributions of the Sumerians. After completing the tour of the Sumerian Civilization, the students encountered a wagon attendant before leaving the gate. The wagon attendant asked the students to answer a question about what they learned about the Sumerian Civilization and the door was opened after the answer. Throughout the application, this process was repeated in every civilization, enabling students to reinforce their knowledge. After completing the tour of the Sumerian Civilization, the students continued their train journey and reached the Babylonian Civilization. After exploring important elements of Babylon, such as the Hanging Gardens and the Code of Hammurabi, the students returned to the starting point by completing their tour in the Babylonian Dungeons. Visuals of the second week of the implementation are presented in Figure 1.

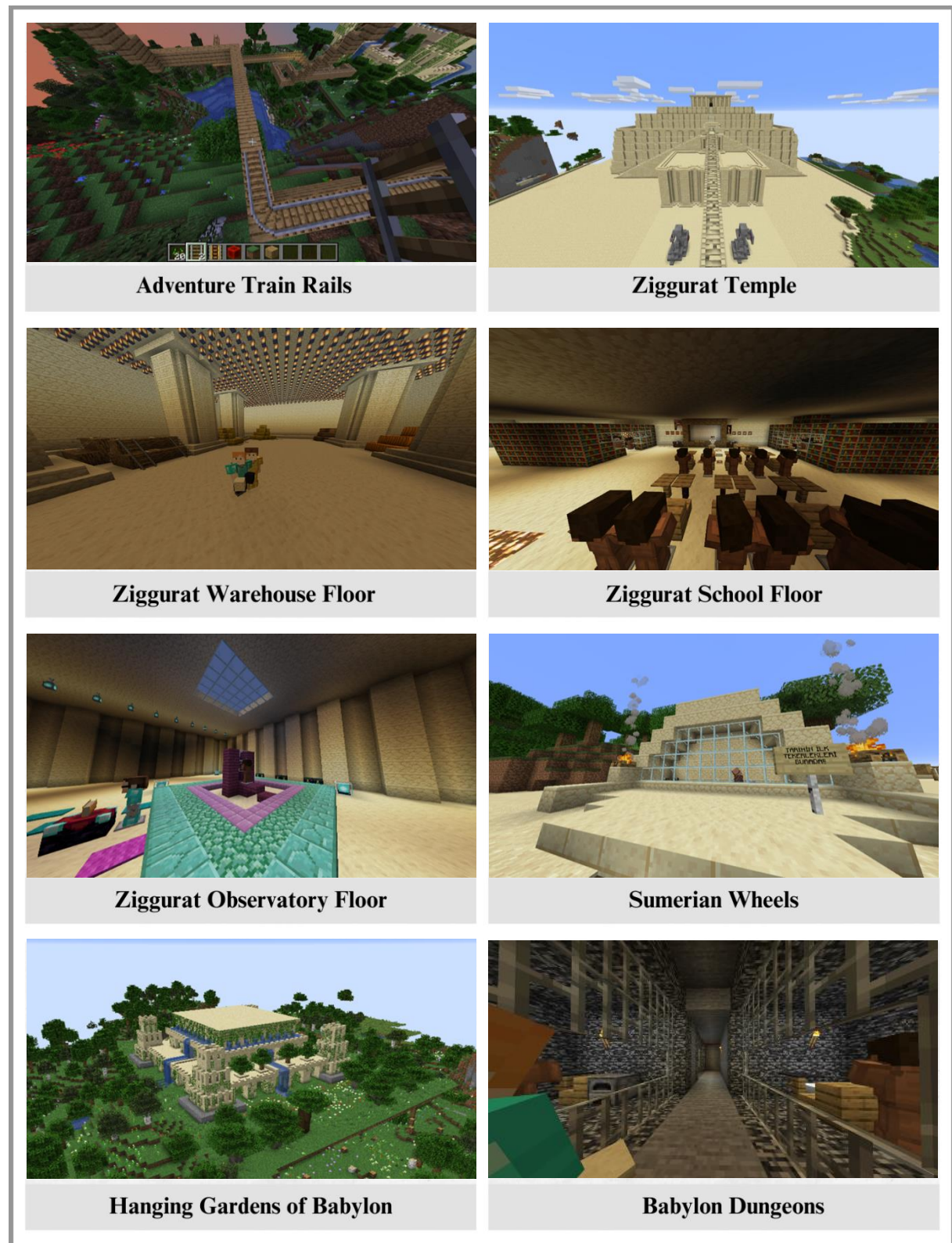


Figure 1. Visuals Of the Second Week of The Implementation

In the third week of the implementation, the students set off for the Assyrian Civilization. When the door opened, the city of Nineveh belonging to the Assyrian Civilization, Assurbanipal sitting on his throne in the garden, the trade center called Karum and the Nineveh Library welcomed the students. Students were first directed to the Nineveh Library. The story of the

Nineveh Library, built by the Assyrian King Assurbanipal, was told to the students. Students entering the library, which was symbolically designed by the content of the social studies course, met the character of Nino, a librarian created by the researcher. The text in the book in front of the character Nino was read aloud by the students. After examining the library in detail, the students were shown the archive room of the Assyrians and were informed that this civilization was advanced in archiving. After examining the archive rooms, the students were directed to the Karum Trade Center, one of the most important elements of civilization. The characters in the trade center sell various materials found in the game. At the end of the civilization, the wagon attendant welcomed the students and asked them to share what they remembered about the points they visited. After the students answered, the wagon attendant opened the door, and the students got into the wagons and had the opportunity to visit Mesopotamian civilizations as they wished. At the end of this week, the Mesopotamian Civilizations application was completed. The visuals of the Assyrian Civilization section are given below. Visuals of the third week of the implementation are presented in Figure 2.

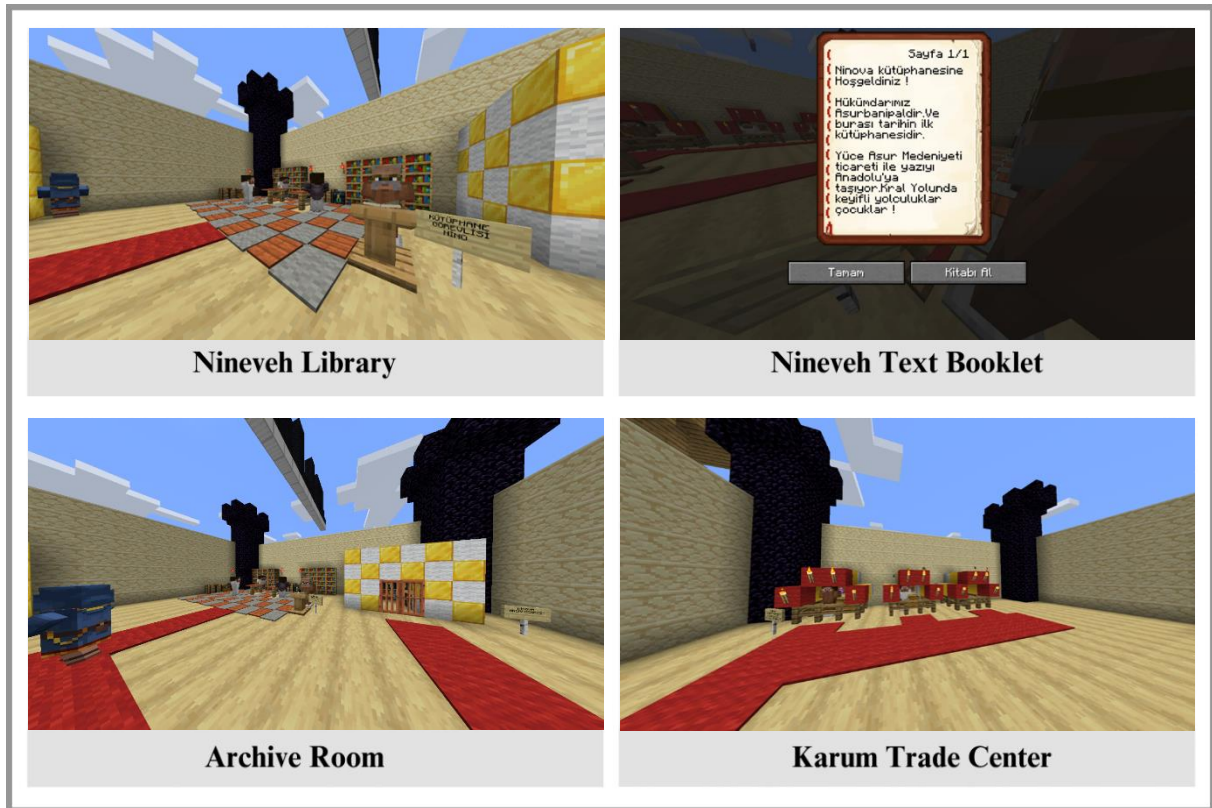


Figure 2. Visuals Of the Third Week of The Implementation

In the fourth week of the research, the implementation started with the Hittite Civilization. When the students reached the gate of the Hittite Civilization, they encountered the Pankush Assembly and the Kadesh Treaty. The students were first directed to the Pankush Assembly of nobles and the symbolic character of the queen called Tavananna. In order to draw attention to impartial historiography in the assembly, anal annals were included. Students learned the importance of the parliament through the researcher's explanations. Then, the students went to the room of the Kadesh Treaty, the first written treaty in history, and understood the importance of this treaty in terms of world history. After the Hittite visit, the students proceeded to the Urartian Civilization. During the visit to the Urartian Civilization, students saw Van Castle, king tombs, stone workshops, and irrigation canals. The students first visited Van Castle, and it

was emphasized that the castle is a historical structure that still stands today. Then, they visited the stone workshops and chamber-shaped burial chambers of the Urartian's, who were masters of stonemasonry. Finally, the students reached Gordion, the capital of the Phrygians, and learned about the Phrygians by visiting the tomb of King Midas. After the visit to the Phrygian Civilization, the students returned to the starting point and completed the application. Visuals of the fourth week of the implementation are presented in Figure 3.

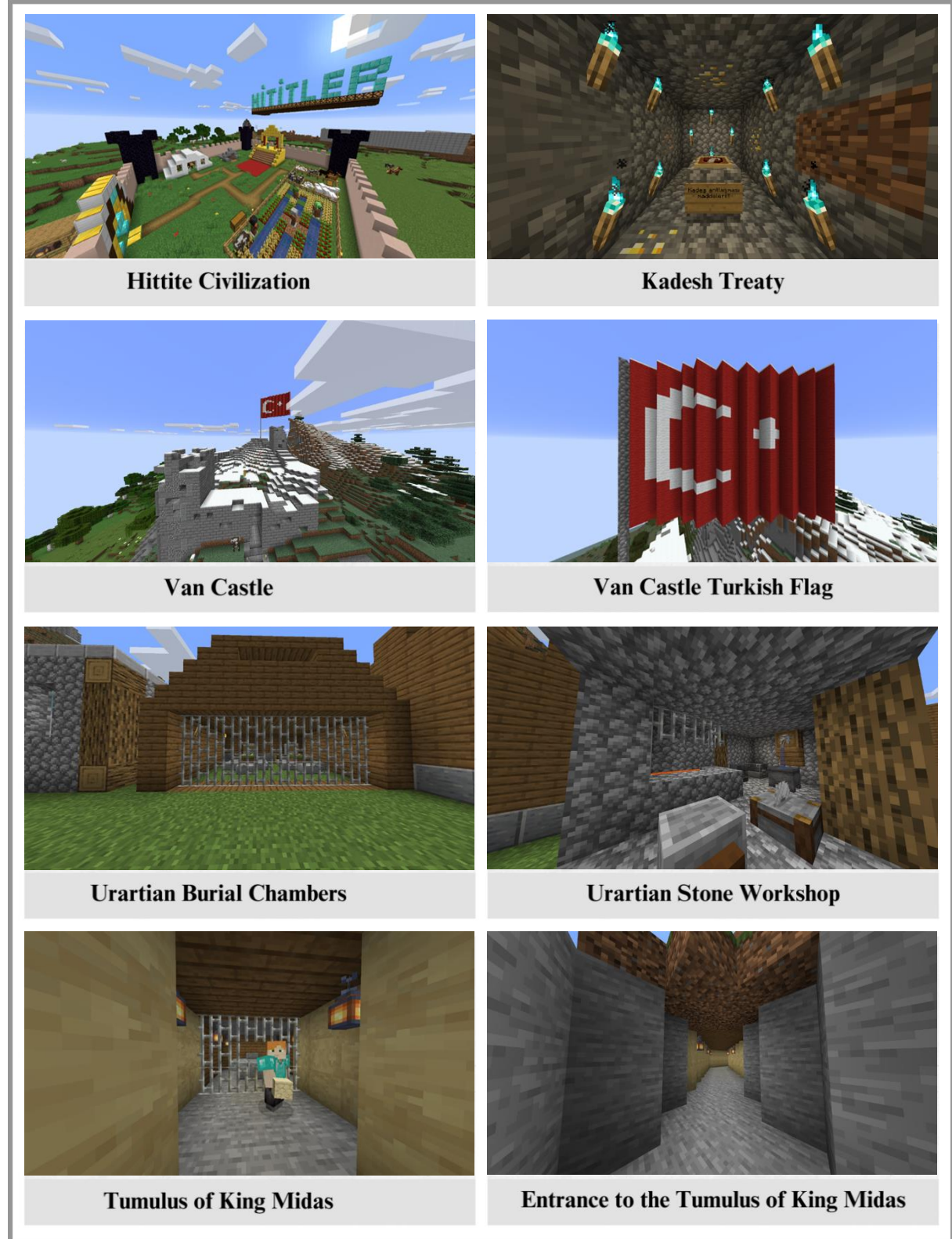


Figure 3. Visuals Of the Fourth Week of The Implementation

First, the students boarded the wagons and reached the Ionian Civilization. This civilization, which was established on the shores of the Aegean Sea and lived as city-states, was placed by the sea in the game. Since they were developed in sea trade, examples of merchant ships were included. Students encountered the Temple of Artemis in Ephesus, and the temple was

examined. Ionians had a free-thinking environment in science and art; therefore, famous scientists were introduced with symbolic characters and explained to the students. Students learned about the contributions of scientists such as Herodotus, Pythagoras, Thales, Homer, Hippocrates, and Diogenes. After visiting the Ancient Theater of Ephesus, students completed the Ionian Civilization section. When the students arrived at their last stop, the Lydian Civilization, they got off the wagons. A large chest filled with gold, symbolizing the invention of money by the Lydians, welcomed the students. Students gathered around this chest, and the importance of money in world history was explained. The students examined Lydian Civilization and city life. Students boarded the wagons and returned to the starting point from the last stop of the adventure. After visiting and examining all civilizations, students were left free within the game. They had the opportunity to rediscover these structures by returning to the areas they were curious about or wanted to examine in more detail. Visuals of the fifth week of the implementation are presented in Figure 4.

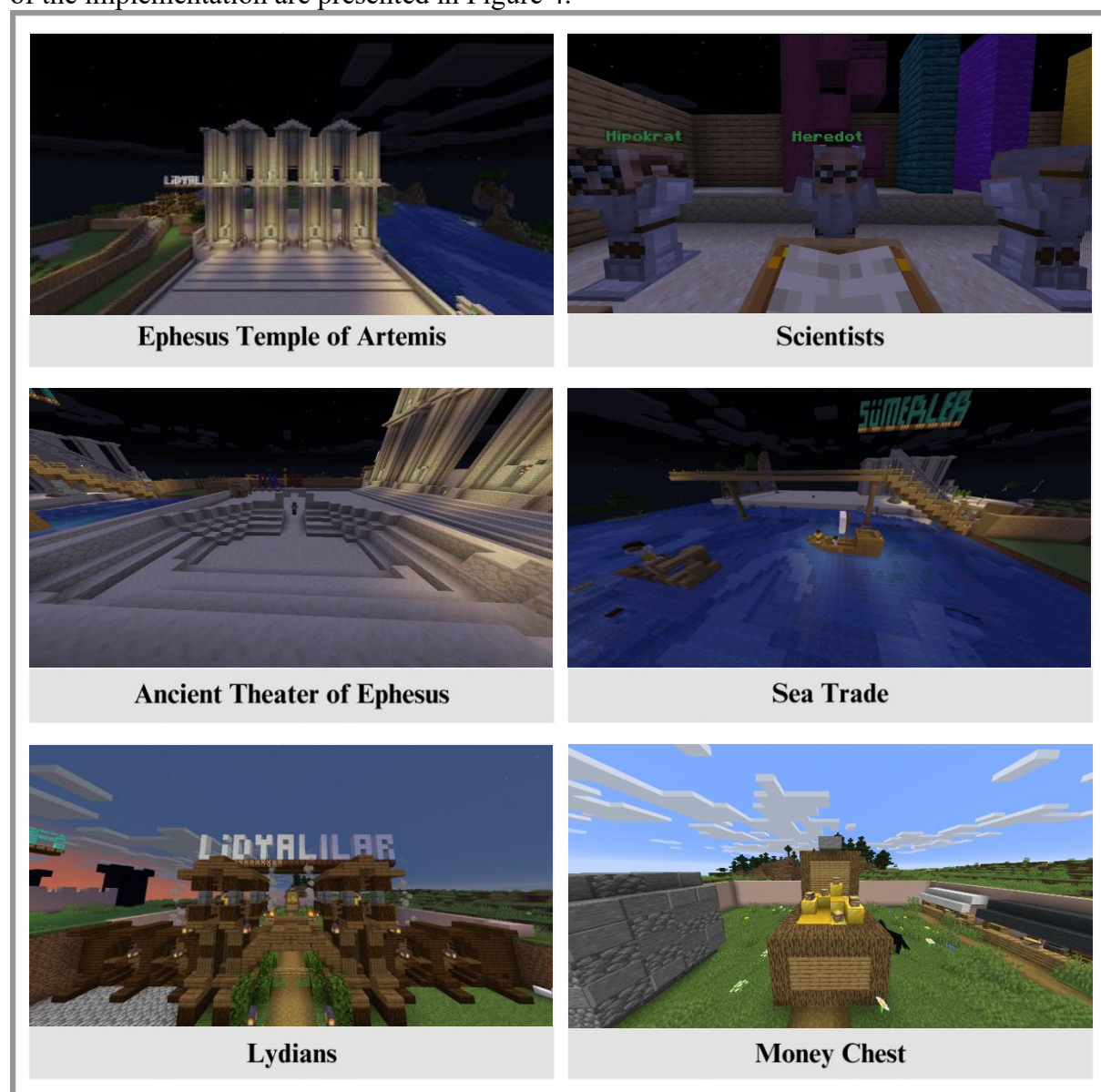


Figure 4. Visuals Of the Fifth Week of The Implementation

Ethics Committee Approval

This research was conducted with the permission obtained by the decision of the Ethics Committee of Gazi University, dated 17/10/2023 and numbered 18.

FINDINGS, COMMENTS AND DISCUSSION

Pretest Findings of Experimental and Control Groups' Motivation Towards Social Studies Course

Table 1. Independent Sample T-Test Results of the Pretest Measurement of the Motivation of the Experimental and Control Groups Towards Social Studies Course

Group	N	\bar{X}	S	t	sd	p
Control	17	92,59	12,74	,362	31	,72
Experimental	16	94,06	10,43			

*p>,05

According to Table 1, there is no significant difference ($t(31)=,362$; $p=,72$; $p>,05$) between the mean scores of the experimental and control groups in terms of motivation towards the social studies course in the pretest scores.

Posttest Findings of Motivation Towards Social Studies Course of Experimental and Control Groups

Table 2. Independent T-Test Results of the Posttest Measurement of the Motivation Towards Social Studies Course of the Experimental and Control Groups

Group	N	\bar{X}	S	t	sd	p
Control	17	91,12	13,76	5,236	31	,00
Experimental	16	110,13	4,71			

*p<,05

According to Table 2, there is a significant difference ($t(31)=5.236$; $p=.00$; $p<.05$) between the mean scores of the experimental and control groups in terms of motivation towards social studies course in the posttest scores. When the mean scores of the groups are analyzed, it is seen that the mean score of the control group is 91.12 and the mean score of the experimental group is 110.13. In this context, it is understood that the significant difference between the groups is in favor of the experimental group.

Posttest Findings of the Control Group's Motivation Towards Social Studies Lesson

Table 3. Independent Sample T-Test Results for the Comparison of the Pre-Test and Post-Test Motivation Scores of the Control Group

Group	T-test	N	\bar{X}	S	t	sd	p
Control	Pretest	17	92,59	12,74	,626	16	,540
	Posttest	17	91,12	13,76			

*p>0,05

According to Table 3, the pre-motivation scores of the control group did not show a statistically significant difference compared to the post-motivation scores ($t(16)=,626$; $p=,54$; $p>0,05$).

Posttest Findings of the Experimental Group's Motivation Towards Social Studies Lesson

Table 4. Independent Sample T-Test Results for the Comparison of Pre-Motivation and Post-Motivation Scores of the Experimental Group

Group	T-test	N	\bar{X}	S	t	sd	p
Experimental	Pretest	16	94,06	10,43	-5,985	15	,000
	Posttest	16	110,13	4,71			

*p<0,05

According to Table 4, when the mean pre and post-motivation scores of the experimental group are taken into consideration, there is a statistically significant difference in favor of post motivation ($t(15)=-5,985$; $p=0,00$; $p<0,05$). In other words, posttest motivation scores are higher than pre-motivation scores.

Pretest Findings of Experimental and Control Groups' Attitudes Towards Social Studies Course

Table 5. Independent Sample T-Test Results of the Pretest Measurement of the Attitudes Towards Social Studies Course of the Experimental and Control Groups

Group	N	\bar{X}	S	t	sd	p
Control	17	118,41	19,59	,982	31	,334
Experimental	16	124,56	16,07			

*p>,05

According to Table 5, there is no significant difference ($t(31)=,982$; $p=,334$; $p>,05$) between the mean scores of the attitude towards social studies course in the pretest scores of the experimental and control groups.

Posttest Findings of Attitudes Towards Social Studies Course of Experimental and Control Groups

Table 6. Independent Sample T-Test Results of Posttest Measurement of Attitudes Towards Social Studies Course of Experimental and Control Groups

Group	N	\bar{X}	S	t	sd	p
Control	17	111,94	15,40	6,993	31	,00
Experimental	16	139,63	3,72			

*p<,05

According to Table 6, there is a significant difference ($t(31)=6,993$; $p=,00$; $p<,05$) between the mean scores of the attitude towards social studies course in the posttest scores of the experimental and control groups. When the mean scores of the groups are analyzed, it is seen that the mean score of the control group is 111.94 and the mean score of the experimental group is 139.63. In this context, it is understood that the significant difference between the groups is in favor of the experimental group.

Posttest Results of the Control Group's Attitudes Towards Social Studies Course

Table 7. Independent Sample T-Test Results for the Comparison of Pre-Attitude and Post-Attitude Scores of the Control Group

Group	T-test	N	\bar{X}	S	t	sd	p
Control	Pretest	17	118,41	19,59	2,006	16	,062
	Posttest	17	111,94	15,40			

*p>0,05

According to Table 7, the pretest attitude scores of the control group did not show a statistically significant difference compared to the posttest attitude scores ($t(16)=2.006$; $p=.062$; $p>0.05$).

Posttest Results of the Experimental Group's Attitudes Towards Social Studies Course

Table 8. Independent Sample T-Test Results for the Comparison of Pre-Attitude and Post-Attitude Scores of the Experimental Group

Group	T-test	N	\bar{X}	S	t	sd	p
Experimental	Pretest	16	124,56	16,07	-3,812	15	,002
	Posttest	16	139,63	3,72			

* $p<0,05$

According to Table 8, when the averages of the pretest attitude and posttest attitude scores of the experimental group are considered, a statistically significant difference is observed in favor of the posttest attitude ($t(15)=-3,812$; $p=,002$; $p<0,05$). In other words, the posttest attitude scores of the experimental group were higher than the pretest attitude scores.

CONCLUSION AND IMPLICATIONS

This study, aims to examine Minecraft game's effect on 5th-grade students' attitudes and motivation towards social studies course. When the findings obtained for the sub-problem “Is there a significant difference in the motivation pretest scores between the experimental group in which the learning environment designed with the Minecraft game was used and the control group in which the education in accordance with the SSC was applied?” were examined, the motivation pretest scores of the experimental and control groups were compared. The data on the motivation pretest scores of these groups were analyzed using the independent sample t-test. As a result of the independent sample t-test conducted according to the findings obtained with the “Social Studies Course Motivation Scale” it was concluded that there was no significant difference between the pretest mean scores of the experimental and control groups regarding their motivation levels towards the social studies course (Table 1). Therefore, it was determined that the mean motivation pretest scores of the experimental and control groups formed in the study were similar. This situation is very important in showing that the groups' motivation levels towards the social studies course were similar before starting the experimental process.

When the findings obtained for the sub-problem “Is there a significant difference in the motivation posttest scores between the experimental group in which the learning environment designed with the Minecraft game was used and the control group in which the education in accordance with the SSC was applied?” were examined, the motivation posttest scores of the experimental and control groups were compared, and the data on the motivation posttest scores of these groups were analyzed using the independent sample t-test. According to the t-test analysis results of the findings obtained through the “Social Studies Course Motivation Scale”, it was concluded that there was a significant difference between the mean scores of the experimental and control groups' motivation towards the social studies course and this difference was in favor of the experimental group. This finding shows that the social studies course designed with Minecraft game, one of the digital games, is effective in increasing students' motivation toward the social studies course (Table 2). As a result of the study conducted by İlkay and Atik (2024) to evaluate the effect of the educational digital game used in the science course on the motivation of 6th grade students towards learning science, it was found that the motivation of the experimental group students towards learning science was

statistically significantly higher than the control group students. Therefore, it is seen that the results of İlkay and Atik's (2024) study and the results of this study are in parallel.

When the findings related to the sub-problem “Is there a significant difference in the motivation pretest and posttest scores of the control group in which education in accordance with the SSC was applied?” were analyzed, the pretest and posttest motivation levels of the control group were compared. The motivation pretest and posttest score data of the students in the control group were analyzed with t-test. As a result of the analysis, it was concluded that there was no statistically significant difference between the pre-motivation and post-motivation scores of the control group (Table 3). In line with this result, it is seen that education in accordance with the SSC is not effective in increasing students' motivation towards the social studies course.

When the findings related to the sub-problem “Is there a significant difference in the motivation pretest and posttest scores of the experimental group in which the learning environment designed with the Minecraft game was used?” were examined; the motivation pretest and posttest score data of the students in the experimental group were analyzed by t-test. According to the results of the analysis, it was concluded that there was a significant difference between the pretest and posttest mean scores of the experimental group's motivation towards the social studies course and that this significant difference was in favor of the posttest (Table 4). Studies in the literature show that digital games are effective in increasing students' motivation (Karakuş, İnal, & Çağiltay, 2008; Breien & Wasson, 2021; İlkay & Atik, 2024).

When the findings related to the sub-problem “Is there a significant difference in attitude pretest scores between the experimental group in which the learning environment designed with the Minecraft game was used and the control group in which the education in accordance with the SSC was applied?” were analyzed, the experimental and control groups were compared in terms of pretest attitude levels. The attitude pretest data of the experimental and control groups were analyzed using the independent sample t-test. As a result of the independent t-test conducted according to the findings obtained through the “Social Studies Attitude Scale”, it was concluded that there was no significant difference between the pretest mean scores of the experimental and control groups regarding the attitude levels towards the social studies course (Table 5). Therefore, it was determined that the attitude levels of the experimental and control groups formed in the study were similar. Before starting the experimental process, it is extremely important that the results of the attitudes towards the social studies course between the experimental and control groups are similar.

When the findings related to the sub-problem “Is there a significant difference in attitude posttest scores between the experimental group in which the learning environment designed with the Minecraft game was used and the control group in which the education in accordance with the SSC was applied?” were examined, the experimental and control groups were compared in terms of posttest attitude levels. The data belonging to the attitude posttest scores of the experimental and control groups were analyzed by independent sample t-test. According to the results of the t-test analysis of the findings obtained through the “Social Studies Attitude Scale”, it was concluded that there was a significant difference between the mean attitude scores of the experimental and control groups towards the social studies course and that this significant difference between the groups was in favor of the experimental group (Table 6). This result reveals that the social studies course designed with the Minecraft game, which is one of the digital games, improves students' attitudes towards the social studies course positively and that the use of this game in education is positive.

As a result of the study conducted by Yılmaz (2022) in which the effect of digital game-based learning on attitude in 5th grade English lesson was examined; when the posttest mean scores were analyzed in terms of attitude level between the experimental and control groups, no significant difference was found between the experimental and control groups. Therefore, the results of Yılmaz's (2022) study and this study are not similar. This situation can be explained by the fact that different results are obtained in scientific studies on similar subjects, the difference in the measurement tools used and the way the measured variable is defined, the methodological approaches used in the studies, sample sizes, selection of groups, the implementation processes of the experiment, student profiles, course contents and educational systems.

When the findings related to the sub-problem “Is there a significant difference in the attitude pretest and posttest scores of the control group in which education in accordance with the SSC was applied?” were examined; the pretest and posttest attitude levels of the control group were compared in terms of. The attitude pretest and posttest score data of the students in the control group were analyzed by t-test. According to the t-test analysis results of the findings obtained through the “Social Studies Attitude Scale”, it was concluded that there was no statistically significant difference between the pre and post attitude mean scores of the control group (Table 7). In line with this result, it is seen that education in accordance with the SSC is not effective in increasing students' attitudes towards the social studies course.

When the findings related to the sub-problem “Is there a significant difference in the attitude pretest and posttest scores of the experimental group in which the learning environment designed with the Minecraft game was used?” were analyzed, the pretest and posttest attitude levels of the experimental group were compared. According to the t-test analysis results of the findings obtained through the “Social Studies Attitude Scale”, it was concluded that there was a significant difference between the pretest and posttest mean scores of the experimental group's attitudes towards the social studies course and that this significant difference was in favor of the posttest (Table 8). Studies in the literature show that digital games have a positive effect on increasing students' attitudes (Aksoy 2014; Erkan & Kerimgil Çelik, 2023; Kandemir, 2023).

As a result of the study conducted by Çankaya and Karamete (2008) on 176 participants at the 7th grade level in order to evaluate the effects of educational computer games on students' learning and attitudes, it was concluded that there was no statistically significant difference between student attitudes towards mathematics course before and after playing the games. This result of the study is not in parallel with the study of Çankaya and Karamete (2008). This can be explained by the fact that the interdisciplinary effects of educational games may differ, the perception and interaction of students may be different between games for mathematics and games for social studies, students' learning styles and interests may be different, the types of games and contents used are different, the measurement tools are different, and the individual differences and diversity of students' experiences. As a result of Aksoy's (2014) study, which was conducted to evaluate the effect of digital game-based learning (DGBL) method on students' attitudes in teaching 6th grade mathematics course subjects, it was concluded that there was a statistically significant difference in favor of the experimental group when the attitude scores of the experimental group and the control group towards mathematics course were compared. This study is in parallel with Aksoy's (2014) study.

When the research findings were examined in general, it was concluded that the social studies course conducted with the digital game-based learning method through the Minecraft game

provided a significant increase in students' attitudes and motivation levels towards the social studies course compared to the courses conducted with the expository teaching strategies in accordance with the social studies curriculum.

In the light of the results obtained from this study, the following recommendations are presented:

- During the process of selecting the school where the research will be implemented, the researcher examined the technological equipment and internet speed of many schools. In many schools, the researcher was challenged by the lack of computers in working condition, the computers in working condition did not have sufficient equipment for playing digital games and the internet speed was low. In this context, improvements can be made in the technological equipment and internet speeds of schools to realize digital game-based teaching in schools.
- In school environments, it can be recommended to use course content designed with digital games in order for students to benefit from the benefits of technology, for students to realize that games can be used not only for entertainment but also for educational purposes and for learning environments to become practical, enjoyable, interactive and encouraging learning.
- This study was conducted to examine the effect of Minecraft games on the attitudes and motivation of 5th grade students within the scope of social studies courses. It may be recommended to conduct studies examining the effects of digital games, including Minecraft games, on different fields at all grade levels.
- Unlike this study, examining Minecraft game's effects on students' academic achievement and permanent learning at different grade levels may be recommended.

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