Gamification's Effect on the Acquisition of Patriotic Behaviors in a Primary School Social Studies Course

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***Abstract*—The effects of interactive computer games on children are well-documented. However, there remains a notable gap in the literature regarding the impact of interactive computer games specifically designed to foster patriotism among primary school students. This study investigated the impact of gamification in fostering patriotic behaviors among primary school students in social studies. The participants were selected using the stratified sampling method. A pretest-posttest control group experimental design was employed, involving 60 fourth-grade students and 20 teachers. Quantitative data were collected through the language-adapted version of the Patriotism Attitude Scale, while qualitative data were gathered using a teacher interview form developed by the researchers. The process of language adaptation and quantitative data analysis was carried out using statistical methods, including the independent t-test and confirmatory factor analysis. Additionally, qualitative data were examined through descriptive analysis. The experimental group participated in a gamified patriotism education program over four weeks. The Patriotism Attitude Scale was administered to the experimental and control group students at two points, four weeks apart. Results indicated a significant improvement ($p < 0.05$) in the patriotic attitudes of the experimental group, with no notable change in the control group. Gender was not found to influence patriotic attitudes significantly. Additionally, based on the findings of this study, gamification has proven to be an effective pedagogical approach for teaching patriotism in primary school settings. Additionally, the study indicates that gender does not have a significant impact on the effectiveness of new educational technologies.**

***Keywords*—patriotism, gamification, social studies, primary school, students**

I. Introduction

Nations have historically sought to establish and maintain influence on the global stage. Influential states endeavor to preserve their current status while striving for continued progress and development. The individuals who contribute to a country's advancement are its citizens. The greater the degree to which individuals demonstrate awareness and commitment to the welfare of their nation, the more likely it is to prosper. Patriotism is defined by individuals who exhibit loyalty to their country, seek to enhance its prestige, and prioritize national interests [1]. These individuals are characterized by their dedication to promoting the well-being and interests of their nation.

The concepts of homeland and citizenship are at the core of patriotism. Different definitions are given to the homeland, such as the land on which a nation lives freely and independently, the land on which a people live and form their culture, and the place where a person is born and raised and lives freely. Individuals who feel a sense of belonging to a piece of land that has a spiritual value and is limited by an official structure are called citizens [2].

A. Theoretical and Conceptual Framework

Patriotism can be described as a social love that brings together societies, cultures, and cultural circles; has a unifying force and effect; and has a social aspect, sociological or cognitive and emotional aspects [3]. A review of the research and definitions of patriotism reveals a variety of perspectives; however, it is evident that patriotism is closely linked to concepts such as national pride, national identity, love of country, nationalism, religion, and loyalty to the nation [4]. The concept of patriotism reflects the emotional connection between individuals, groups, and the land. This bond, grounded in affection, can be observed across diverse ethnographic groups, each forming a connection with a specific geographical area. However, mere "love" is insufficient to define patriotism; patriotic individuals experience a profound sense of attachment to their homeland [5].

The multidimensional nature of the concept of patriotism has been conceptualized by being subject to theoretical distinction as blind and developmental patriotism. Blind patriotism is a rigid and inflexible attachment to the country. It has been characterized as a definite, positive evaluation, loyal citizenship, and intolerance to criticism. On the contrary, constructive/developmental patriotism refers to a commitment to the country characterized by critical loyalty [6]. There is an approach that questions and criticizes valid group behaviors for positive change. In both orientations, patriotism is based on the emotional bond felt towards the country. However, while blind patriotism sees national criticism and opposition as disloyalty by nature, developmental patriotism assumes the opposite [7].

Individuals with patriotic values are expected to know and use their rights, fulfill their responsibilities, be sensitive to world and country problems and produce solutions, be sensitive to animals and natural heritage, protect historical heritage, be aware of the roles and responsibilities of their society in the historical process, and adopt social values. Patriotism contributes to social order and continuity by fostering a sense of belonging and shared responsibility. It plays a crucial role in the adaptation and socialization of individuals, guiding them in understanding their roles within society [8].

Throughout human history, games have served as a form of entertainment and a means of learning, communication,

and fostering social bonds. Games are an integral and essential aspect of human nature: they are a part and necessity of human nature [9]. Games, which existed before the formation of culture, are seen as effective actions for the realization of instinctive, ritual, or just vital practices in the processes of people becoming individuals and societies [10]. Although games are a complex phenomenon that includes many features, the basis of games is the motivation for entertainment and natural experimentation [11]. Although games are seen as a human instinct and a component of humans, the definition of games has changed in different periods, and the phenomenon of games has taken on different roles in our lives [12]. An analysis of perspectives from various experts in the field of gamification reveals that there is no universally accepted definition of the gamification approach [13]. Definitions are generally focused on motivation, interaction, dedication, and experimentation. One of the most general and widely accepted definitions of gamification in the literature is the use of game design elements in situations outside the context of the game [14]. Koivisto and Hamari [15] defined gamification as the process of creating "playful experiences". In another definition, gamification is creating cleverly designed experiences that arouse curiosity [16].

Games represent one of the most natural and effective methods for both children and adults to learn, express themselves, and establish social connections. Within this context, gamification has gained increasing importance in education and training programs. It is particularly regarded as an effective approach for teaching younger age groups.

Unlike previous research on gamification and patriotism, this study explores the impact of gamification on fostering patriotic behaviors in primary school Social Studies courses. A review of the existing literature reveals numerous studies highlighting the potential of gamification in enhancing motivation, fostering creativity, and improving educational effectiveness. Similarly, there is substantial research addressing patriotism in historical and cultural contexts. However, no studies were identified that specifically examine the teaching of patriotic values through gamification at the primary school level, thereby intersecting these two domains. This gap underscores the significance of the present research in filling an important academic void.

B. Related Research

A review of the studies conducted in the field was undertaken, focusing on research related to gamification, patriotism, and the intersection of gamification and patriotism. A selection of these studies is presented below.

Nor, Sunar and Kapi [17] aimed to reveal the user experiences of gamified virtual reality applications in sports in their study. In light of the findings obtained, it was concluded that gamification components increased the motivation of the participants during physical activity and encouraged the user to perform better. Yildirim *et al.* [18] analyzed university students' gamification user types. Students' preferences and traits when playing digital games were also determined. Nor, Sunar and Kapi [17] also noted that gamification has been applied to physical activities, such as sports training, in a manner that is both engaging and educational. Peasent [19] conducted a study to determine the motivation of middle school students toward gamified music lessons. According to the findings obtained, no significant difference was found between the experimental and control groups in terms of motivation and encouragement of the participants to practice. However, Peasent [19] concluded that the majority of the participants had positive attitudes and perceptions towards the digital gamification process. Deterding *et al.* [20] examined the effects of gamification on increasing motivation in education, health, and business and stated that this approach encourages creativity in learning processes. González *et al.* [21] developed a scale in response to the absence of a valid and reliable measurement tool for assessing gamification in educational settings. The scale, which was created with input from 401 participants with experience in gamification in education, aimed to serve as a guide for implementing teaching methods based on gamification principles. González *et al.* [21] further emphasized that this scale serves as a crucial tool for collecting the necessary data to implement gamification in education more effectively and systematically.

McDermid [22] employed a critical discourse analysis approach in his article to examine themes and patterns in eight non-fiction books about Polish patriotism that were written for children. The study concluded that these books reinforced a sense of patriotism by emphasizing Poland's historical and cultural identity. Additionally, McDermid [22] noted that these works sought to instill a sense of civic responsibility and national identity in young readers. Khodjamkulov *et al.* [23] addressed the issue of spiritual and patriotic education of the young generation in the scientific, political, and literary heritage of Central Asian thinkers. The research also demonstrated that the works of these thinkers significantly influence the development of social responsibility awareness and patriotic attitudes among the younger generation. Esenkuş [24] conducted a study on the inclusion of patriotism in social studies textbooks (4th, 5th, 6th, and 7th grades); It was revealed that patriotism is one of the most used values in the social studies textbook, along with responsibility, sensitivity, love, and solidarity. The study also indicated that the clear and motivational presentation of patriotic themes in educational materials enhances students' perceptions. Gül and Şeker [25] investigated the representation of patriotism in Social Studies curricula. Based on their findings, it was concluded that while the value of patriotism is included in all Social Studies curricula, its significance is not adequately emphasized in most of them. The analysis revealed that patriotism is predominantly associated with topics in history and is framed around knowing, loving, protecting, and contributing to the homeland.

Skirda [26] explored the potential of gamification in patriotism education for young adolescents. The author highlighted that gamification serves as a modern and effective tool for fostering patriotism but also cautioned about potential risks associated with its implementation. The findings indicated that gamification can enhance the effectiveness of the educational process.

Within the scope of the findings presented, the existing body of literature indicates that extensive research has been conducted on the relationship between patriotism and gamification. However, no study has been identified that specifically examines the impact of gamification on the

acquisition of patriotic behaviors in primary school Social Studies classes. In this regard, the present study holds particular significance.

C. Purpose of the Research

The purpose of this research was to investigate the impact of gamification in fostering patriotic behaviors in primary school social studies. In alignment with the purpose of the study, the following research question was addressed accordingly.

R1: Is there a significant difference between the pre-test and post-test scores on the patriotic attitude scale of primary school students, favoring the experimental group?

R2: Is there a significant difference between the pre-test and post-test scores on the patriotic attitude scale of primary school students based on gender?

R3: How do primary school teachers evaluate the effect of gamification on the patriotic attitudes of the students?

II. Methods and Materials

A. Research Method

In the study, a pretest-posttest control group experimental model was used to reveal the difference between the attitudes of students who participated in the application process of games developed following patriotic values and those who did not participate in this process. In the pretest-posttest control group model, there are two groups formed by unbiased assignment. One of them is used as the experimental group and the other as the control group. Pre-experiment and post-experiment measurements are made in both groups. The aim was to evaluate the difference between the pre-test and post-test of the experimental group and the non-experimental group [27]. In the experimental design, activities developed per patriotic values were applied only to the experimental group. No activity related to citizenship values was applied to the control group during this period. Care was taken to ensure that the control group was not affected by the program applied to the experimental group. A pretest was applied to both groups before the experimental process. The same test was applied to the groups as a post-test at the end of the experimental process.

B. Participants

The study participants consisted of fourth-grade students from a primary school during the 2024–2025 academic year. Of the students participating, 30 were assigned to the experimental group, and 30 were assigned to the control group. The participants were selected using the stratified sampling method, which ensures the representation of specific subgroups within the population (e.g., gender, age group) and provides a more homogeneous sample by selecting individuals from these subgroups in predetermined proportions [28]. The fourth grade of the primary school where the research was conducted comprised four classes, with a total of 115 students. To ensure an unbiased selection, one class was randomly assigned as the experimental group, while another was designated as the control group, considering the distribution of student gender. In this research, gender balance was maintained in both the experimental and control groups, with 16 female and 14 male students in each group. Thus, the sample comprised 32 female and 28 male students in total. Additionally, 20 primary school teachers participated in the study. All teachers were female and had between 10 and 15 years of professional experience. In Kazakhstan's primary schools, more than 90% of teachers are women. Social Studies is a mandatory subject taught at all grade levels in primary education, and it is delivered by class teachers. At the school where this research was conducted, there are a total of 24 class teachers, four of whom were excluded from the study. The participating teachers received a two-hour seminar on "Gamification in Education" at the outset of the research. Additionally, they were provided with a selection of games related to the theme of patriotism for further review and integration into their teaching practices.

C. Data Collection Tools

The data collection tool used in the present study was developed by Inanç and Yılmaz [29] and is titled the "Patriotic Attitude Scale." The original version of the scale is in Turkish. For this study, a language adaptation was conducted, resulting in the creation of the Kazakh version of the scale. The researchers ensured the language validity of the adapted scale. The parametric tests conducted during this process are detailed below. Additionally, a teacher interview form was developed by the researchers to collect qualitative data.

1) Patriotism attitude scale

The original form of the scale consists of 4 sub-dimensions and 33 items. The dimensions are named as sensitivity to society, laws, historical and natural environment, solidarity and responsibility, patriotic attitude, diligence, and helpfulness. According to the Cronbach Alpha reliability analysis conducted in the context of internal consistency, it was determined that the overall scale was 0.902. The scale is a five-point Likert type.

Language Equivalence Study: The Patriotic Attitude Scale, adapted into the Kazakh language, was first translated from its original language into Kazakh by language experts who know both languages very well. All translation processes were carried out simultaneously by 2 language experts. The scale form translated into Kazakh was translated back into its original language after 2 weeks. Care was taken to ensure that there were no differences in meaning between the translation and the original form. The aim was to ensure consistency between the translations made by two language experts, with a two-week interval between each translation. Additionally, it was intended that the translations would accurately reflect the meanings of the items in the original version, ensuring that the scale's structure, as related to the construct it was designed to measure, remained intact. Finally, 2 weeks later, 2 experts translated the scale back into Kazakh from its original language and created the final Kazakh form of the scale.

Pilot application: At this stage, a pilot sample group for the scale was formed, consisting of 466 fourth-grade primary school students. These students were selected from various primary schools across Kazakhstan during the 2024–2025 academic year. The sample size of 466 students meets the criterion of being at least five times the number of items required for factor analysis studies, ensuring the statistical validity of the analysis [30].

Exploratory Factor Analysis (EFA): The SPSS 25.0

statistics program was used at this stage. In the initial stage, an analysis was conducted to determine whether the adapted scale exhibited a normal distribution. The Kolmogorov-Smirnov test was used for the normal distribution test. The analyses made on the data set showed that it had a normal distribution (p = 0.059 > 0.050). All items in the scale were used for EFA. In this analysis, it was first checked whether the sample size was sufficient. The value of 0.89 > 0.70 obtained from the Kaiser-Meyer-Olkin (KMO) test also revealed that exploratory factor analysis could be done on the data.

Bartlett's Sphericity test was performed immediately afterward. Bartlett's Sphericity test ($\chi2$ = 591.239, p = 0.000) showed that EFA could be done on the data. The eigenvalue was determined as 1, and 4 factors with eigenvalues greater than 1 were found. In the principal component analysis, it was seen that all the items in the original form of the scale's 4-factor structure met the factors of the translated form, and no item was removed from the scale. In the last stage of the EFA, the slope accumulation graph was examined. It was determined that the highest loading value was 0.841 and the lowest loading value was 0.566.

Confirmatory Factor Analysis (CFA): At this stage, the SPSS Amos 25.0 statistics program was used. The goodness of fit indices was examined for CFA. For the fit of the model, $\chi2$ /df (Chi-Square/Degree of Freedom), NNFI (Non-Normed Fit Index), and RMSEA (Root Mean Square Error of Approximation) values were taken as criteria. In the analysis, these values are $\chi2$ /df = 2.841 (p = 0.000), NNFI = 0.91, and RMSEA = 0.055, respectively. Hooper *et al.* [30] suggested a value below 5 for $\chi2$ /df; above 0.80 for NNFI, and below 0.080 for RMSEA. Based on this view, it was seen that the scale preserved its original structure in Kazakh culture. The scale was made ready for implementation.

The factor loadings and Cronbach's Alpha coefficients of the Patriotic Attitude Scale, which was finalized as a result of CFA, are given in Table 1.

Correlations and Cronbach's Alpha coefficient of the language adapted Patriotic Attitude Scale*:*

In the reliability analysis of the 4-factor structure of the scale, Cronbach's Alpha value was calculated as 0.766 for the Sensitivity to Society, Laws, Historical and Natural Environment Dimension; 0.759 for the Solidarity and Responsibility Dimension; 0.839 for the Patriotic Attitude Dimension; and 0.732 for the Diligence and Helpfulness Dimension. The value for the overall scale was 0.781. The scale was a 5-point Likert type. In this rating scale, score ranges are accepted as equal. Accordingly, the range between 1.00 and 1.80 indicates Strongly Disagree; The range between 1.81 and 2.60 indicates Disagree; The range between 2.61 and 3.40 indicates Partly Agree; The range of 3.41 to 4.20 was rated as Agree, and the range of 4.21 to 5.00 was rated as Strongly Agree. While converting the data into findings, the reverse items in the scale were evaluated by reversing them.

Table 1. Patriotic attitude scale

Article	Expression on Scale	Item Total Correlation	Cronbach's Alpha
Sensitivity to Society, Laws, Historical and Natural Environment			
1	I am empathetic.	0.673	0.766
2	I am willing to engage in activities that contribute to the development and well-being of my community (village/neighborhood).	0.723	
3	I comply with laws and regulations to ensure peace and order in society.	0.716	
4	I respect the laws imposed by our state.	0.768	
5	It is important to respect and adhere to the laws established by our state.	0.741	
6	I value historical and cultural areas.	0.666	
7	I am not sensitive about the protection of historical artifacts.	0.682	
8	I do not damage historical and cultural sites.	0.694	
9	I am sensitive about protecting the natural environment.	0.688	
10	I am willing to make meaningful contributions to environmental protection.	0.703	
11	I make a conscious effort to use my country's resources responsibly and without waste.	0.651	
12	I know the value of our natural resources.	0.759	
13	I care about the society I live in.	0.644	
14	I do my best to *get al.*ong with those around me.	0.696	
15	I can say that I am considerate towards those around me.	0.720	
16	I am someone who respects elders and cares for younger individuals.	0.705	
The Dimension of Solidarity and Responsibility			
17	I believe that love for the country must be proven through action.	0.635	0.759
18	I am not careful enough about the consequences of my behavior for others.	0.639	
19	I make the necessary effort to be successful in my exams.	0.622	
20	I feel uncomfortable when others seek my assistance.	0.603	
21	I believe that social cooperation plays a crucial role in addressing societal issues.	0.610	
Patriotic Attitude Dimension			
22	I believe that individuals should be willing to endure hardships for the well-being of their country.	0.830	0.839
23	I believe that the sacrifices of martyrs should be honored and remembered.	0.841	
24	I hold our national flag and national anthem in high esteem.	0.802	
25	In the absence of a valid excuse, I participate in national holiday celebrations with genuine enthusiasm.	0.811	
26	I consider Ataturk and other patriots as role models.	0.819	
27	I love my family.	0.788	
28	I am open to the possibility of residing in another country in the future.	0.775	
Diligence and Helpfulness Dimension			
29	I assume school duties only when they are deemed necessary.	0.599	0.732
30	I recognize that diligent effort is essential for performing my responsibilities to the highest standard.	0.566	
31	I will make the necessary sacrifices to help someone in distress.	0.581	
32	I welcome the opportunity to engage in initiatives aimed at supporting individuals with disabilities.	0.605	

Article	Expression on Scale	Item Total Correlation	Cronbach's Alpha
33	I cannot confidently assert that I consistently maintain a harmonious relationship with my environment.	0.574	
34	Patriotism Attitude Scale		0.781

2) Teacher interview form

Creswell and Plano Clark [31] emphasize that the process of developing an interview form should involve clearly defining research questions, consulting experts, conducting a pilot study, and continuously refining the form to enhance its reliability and validity. Following this framework, a comprehensive literature review was first conducted. Based on the findings, three questions were formulated to collect teachers' perspectives in alignment with the research objectives. The formulated questions were subsequently presented to two experts for evaluation. Following their review, the experts confirmed that the questions were appropriate and aligned with the research objectives. Subsequently, the questions were presented to two primary school teachers, who were asked to assess their clarity and comprehensibility. The teachers indicated that the questions were clear and understandable. Based on this feedback, the research results were reformatted into an interview form. The teacher interview form, prepared for the interviews with the teachers, is provided in Table 2.

Table 2 shows the teacher interview form prepared for the primary school teachers who participated in the research. The form includes 3 closed-ended questions.

Table 2. Teacher interview form

Teacher Interview Form
1. How do you evaluate the effect of gamification on students' patriotic attitudes? Very Effective ( ) Effective ( ) Somewhat Effective ( ) Ineffective ( ) Very Ineffective ( )
2. Have you ever used the gamification method to develop students' patriotic attitudes? I benefited ( ) I partially benefited ( ) I did not benefit ( )
3. Will you use gamification to develop students' patriotic attitudes in the future? Always ( ) Often ( ) Sometimes ( ) Rarely ( ) Never ( )

3) Patriotism education with gamification

A 4-week activity program was prepared for the 4th-grade primary school students participating in the study. The activities were prepared based on the D6 Gamification Design [32]. The first step was the "Defining Goals" step: The goal of gamification and patriotism education is to create a significant difference between the pre-test and post-test scores of students' patriotic attitudes. The second step was the "Behavior Change" step: The behavior change aimed here was to create a positive and significant change in students' patriotic attitudes. The third step was the "Player Recognition" step. The fourth step was the "Behavior Cycle" step: Students internalize the process in this step. The fifth step was the "Don't Forget Fun" step. The Kahoot application was used to support this step. Kahoot was a learning-based test game used as educational technology in educational institutions [33]. Games are user-created multiple-choice fun tests that can be accessed through a web browser or the Kahoot application. It is a gamified Web 2.0 tool that makes the repetition of the topics covered in the lessons more fun, thanks to the joint use of components such as mobile phones, computers, tablets, and smart boards. The aim here was to learn in a fun way and reinforce the course content [34]. The sixth and final step is the 'Determining Appropriate Tools' step. Badges were used for this step.

During the 4-week training period, the experimental group students who participated in the research were included in the program, while the control group students continued their normal curriculum. The patriotism attitude scale was applied to both the experimental and control group students before and after the 4-week gamification and patriotism education.

D. Data Collection Process

Quantitative data were collected by administering a patriotic attitude scale to students attending face-to-face classes in two primary schools in Almaty, Kazakhstan. The scale was implemented in group settings on two separate occasions, with a four-week interval between administrations. In addition, qualitative data were obtained through face-to-face, one-on-one interviews with teachers. The entire research process, including the adaptation of the scale's language and all related applications, spanned approximately 10 weeks. The average administration time for the scale was approximately 35 minutes per student, while teacher interviews took about 15 minutes each. These durations reflect the overall average time commitment required from each participant in the pilot phase.

E. Compliance with Ethics

Ethical rules were followed at all stages of the research. Necessary permissions were obtained while creating the sample groups. A voluntary participation form was created for the participants. Consent forms were obtained from the families of the students regarding their participation in the research. In addition, teachers were asked to report their voluntary participation in writing. In all stages of the research, research ethics principles were followed. No conflict of interest was experienced.

F. Data Analysis

In the scale language adaptation phase of the study, SPSS 25.0 was used for exploratory factor analysis, and SPSS Amos 25.0 for confirmatory factor analysis. SPSS 25.0 statistics program was used in the analysis of quantitative data of the study. Kolmogorov-Smirnov test was used to evaluate the normal distribution, and ($p < 0.05$) it was seen that the data set was normally distributed. Parametric tests were applied to the data set. Weighted average and standard deviation calculations were made, and an independent samples t-test was applied.

In the analysis of qualitative data, the descriptive analysis technique was used. Descriptive analysis aims to ensure that the data obtained as a result of interviews or observations are transferred to the reader in an organized and interpreted way

[35]. In the study, an interview form consisting of 3 questions was used to seek an answer to the question of how teachers evaluate the effect of gamification on students' patriotic attitudes. In qualitative studies, the number of interview questions should be determined based on the research's purpose and focus. For instance, Creswell [36] highlighted that in qualitative interviews, limiting the number of questions is essential to maintain an in-depth exploration of the research topic. In this regard, the three questions formulated to gather teachers' perspectives can be considered sufficient as they are designed to thoroughly address the core aspects of the research topic. Furthermore, the interview form is considered effective in collecting comprehensive data, as the questions are designed to allow teachers to articulate their experiences and perceptions in detail. The data obtained from the teacher interview form were categorized with frequencies and percentages.

III. Results

In this section, the data obtained from the Patriotic Attitude Scale and the teacher interview form were converted into findings.

A. Findings Regarding the Patriotic Attitude Scale

Table 3 shows the pretest and posttest weighted means and standard deviations of the students participating in the study before and after the gamification training regarding the sub-dimensions of the patriotic attitude scale and the overall scale.

Table 3. Patriotism attitude scale experimental and control group pretest-posttest weighted average and standard deviations

Pretest results	Group	*M*	*SD*
Sensitivity to Society, Laws, Historical and Natural Environment	Experimental Group	3.51	0.677
	Control Group	3.60	0.681
The Dimension of Solidarity and Responsibility	Experimental Group	3.72	0.699
	Control Group	3.69	0.654
Patriotic Attitude Dimension	Experimental Group	3.97	0.672
	Control Group	3.95	0.630
Diligence and Helpfulness Dimension	Experimental Group	3.73	0.634
	Control Group	3.80	0.644
Patriotic attitude scale	Experimental Group	3.70	0.652
	Control Group	3.73	0.661
Posttest results	**Group**	***M***	***SD***
Sensitivity to Society, Laws, Historical and Natural Environment	Experimental Group	3.98	0.688
	Control Group	3.66	0.692
The Dimension of Solidarity and Responsibility	Experimental Group	4.36	0.681
	Control Group	3.61	0.675
Patriotic Attitude Dimension	Experimental Group	4.35	0.652
	Control Group	4.00	0.623
Diligence and Helpfulness Dimension	Experimental Group	4.28	0.666
	Control Group	3.79	0.659
Patriotic attitude scale	Experimental Group	4.22	0.662
	Control Group	3.72	0.674

M= Mean, *SD*= Standard Deviation

Table 3 shows the weighted means and standard deviations for the sub-dimensions of the Patriotic attitude scale and the entire scale. According to the pre-test results, it was determined that the experimental group had a high degree of attitudes in the dimension of sensitivity to society, laws, historical and natural environment (M = 3.51, SD = 0.677), in the dimension of solidarity and responsibility (M = 3.72, SD = 0.699), in the dimension of patriotic attitude (M = 3.97, SD = 0.672), industriousness and helpfulness (M = 3.73, SD = 0.634) and in the overall patriotic attitude scale (M = 3.70, SD = 0.652). According to the pre-test results, it was determined that the control group had a high degree of attitude in the dimension of sensitivity to society, laws, historical and natural environment (M = 3.60, SD = 0.681), in the dimension of solidarity and responsibility (M = 3.69, SD = 0.654), in the dimension of patriotism (M = 3.95, SD = 0.630), industriousness and helpfulness (M = 3.80, SD = 0.644) and the overall patriotism attitude scale (M = 3.73, SD = 0.661).

According to the post-test results, it was determined that the experimental group had a high degree of attitude in the dimension of sensitivity to society, laws, and the historical and natural environment (M = 3.98, SD = 0.688). It was determined that they had a very high degree of attitude in the dimension of solidarity and responsibility (M = 4.36, SD = 0.681), in the dimension of patriotism (M = 4.35, SD = 0.652), industriousness and helpfulness (M = 4.28, SD = 0.666), and in general in the patriotism attitude scale (M = 4.22, SD = 0.662). According to the posttest results, it was determined that the control group had a high degree of attitude in the dimension of sensitivity to society, laws, historical and natural environment (M = 3.66, SD = 0.692), in the dimension of solidarity and responsibility (M = 3.61, SD = 0.675), in the dimension of patriotism (M = 4.00, SD = 0.623), industriousness and helpfulness (M = 3.79, SD = 0.659) and in the overall patriotism attitude scale (M = 3.72, SD = 0.674).

Table 4 shows the T-test results of the students participating in the study according to the gender variable, within the scope of the pre-test and post-test, before and after the gamification training on the patriotic attitude scale.

Table 4 presents the pretest and posttest scores of the patriotic attitude scale for the students participating in the study, categorized by gender, before and after the gamification training. According to the pretest results, no significant difference was found in the patriotic attitudes of the experimental group (F = 6.211, p > 0.5) and the patriotic attitudes of the control group (F = 6.105, p > 0.5) in terms of the gender variable. According to the post-test results, no significant difference was found in the patriotic attitudes of the experimental group (F = 6.571, p > 0.5) and the patriotic

attitudes of the control group ($F = 6.220, p > 0.5$) in terms of the gender variable.

Table 4. T-test results of independent variables according to gender variable

	Group	Gender	*n*	*M*	*SD*	*F*	*p*
Pretest results	Experimental Group	Female	16	3.72	0.677	6.211	0.230
		Male	14	3.67	0.681		
	Control Group	Female	16	3.75	0.645	6.105	0.206
		Male	14	3.71	0.651		
Posttest results	**Group**	**Gender**	***n***	***M***	***SD***	***F***	***p***
	Experimental Group	Female	16	4.20	0.691	6.571	0.280
		Male	14	4.25	0.680		
	Control Group	Female	16	3.80	0.694	6.220	0.210
		Male	14	3.67	0.677		

n= Sample size, *M*= Mean, *SD*= Standard Deviation, *F*= Test of equality of variances, *p* = Null hypothesis

B. Findings Obtained from the Teacher Interview Form

Table 5 categorizes the responses of the teachers who participated in the study to the question "How do you evaluate the effect of gamification on students' patriotic attitudes?"

Table 5. How do you evaluate the effect of gamification on students' patriotic attitudes?

Category	n	%
Very effective	12	60
Effective	5	25
Slightly effective	3	15
Ineffective	-	20
Very ineffective	-	12
Total	20	100

n = Sample size, %= Percentage

Table 5 evaluates the responses of the teachers who participated in the research to the question, "How do you evaluate the effect of gamification on students' patriotic attitudes?" 60% of the teachers who participated in the research answered very effective, 25% effective, and 15% slightly effective. There were no teachers who answered ineffective or very ineffective among the teachers who participated in the research.

Table 6 evaluates the responses of the teachers who participated in the study to the question "Have you ever used the gamification method in developing students' patriotic attitudes?"

Table 6. Have you ever used gamification to develop students' patriotic attitudes?

Teachers' Comments	n	%
I benefited	5	25
I partially benefited from it	11	55
I didn't benefit from it	4	20
Total	20	100

n = Sample size, %= Percentage

Table 6 categorizes the responses of the teachers who participated in the study to the question, "Have you ever used the gamification method in developing students' patriotic attitudes?" 25% of the teachers who participated in the study responded, "I used it," 55% responded, "I used it partially," and 20% responded, "I did not use it." Table 7 evaluates the responses of the teachers who participated in the study to the question "Will you use gamification in developing students' patriotic attitudes in the future?

Table 7 categorizes the responses of the teachers who participated in the study to the question, "Will you use gamification in developing students' patriotic attitudes in the future?" 20% of the teachers answered always, 60% often, 15% sometimes, and 5% rarely. No teacher answered never among the teachers who participated in the study.

Table 7. Will you use gamification to develop students' patriotic attitudes in the future?

Teachers' Comments	n	%
Always	4	20
Often	12	60
Sometimes	3	15
Rarely	1	5
Never	-	-
Total	20	100

n = Sample size, %= Percentage

IV. Discussion

When the research findings were evaluated according to the pretest results, it was determined that the patriotic attitude scale scores of the experimental and control groups were similarly high. The scale was repeated after the students were given patriotism education through gamification. According to the post-test results, while the patriotic attitudes of the control group students were found to be high, the patriotic attitudes of the experimental group students were found to be very high. This result is similar to the results of previous related studies. A review of the studies conducted in the field reveals that gamification has a positive effect on students' learning effectiveness [37, 38]. In their study, Ak and Oruç [39] aimed to reveal the effect of the use of gamification in social studies education on students' motivation toward the course, academic success, and retention. A significant difference emerged between the pretest and posttest scores of the experimental group students' academic achievement test. Similarly, Zainuddin *et al.* [40] demonstrated that gamification contributes to the positive development of student motivation and learning, emphasizing that this approach enhances the effectiveness of the learning process.

The pretest and posttest results of the patriotic attitude scale scores of the students participating in the study were evaluated according to the gender variable before and after the gamification education. It was determined that there was no significant difference in the students' patriotic attitudes according to the gender variable. Similar to the findings of this study, Börü and Yılmaz [41] also revealed in their research that the gender variable did not create a significant difference in the patriotic attitudes of the students. Additionally, Harland and Pickering [42] argued that the effect of gender on students' adoption of social values is limited, emphasizing that the content and methodology of education play a more decisive role than gender.

The opinions of the primary school teachers who

participated in the study regarding the effect of gamification on students' patriotic attitudes were evaluated. The majority of teachers reported that gamification was highly effective in shaping students' patriotic attitudes. According to the study results, most primary school teachers indicated that they had previously utilized gamification to some extent in fostering students' patriotic values. Furthermore, a significant number of teachers expressed confidence that gamification would be beneficial in developing students' patriotic attitudes in the future. Upon reviewing existing research in the field, it is evident that several studies have focused on evaluating teachers' perceptions of gamification in education. For instance, Arslan *et al.* [43] assessed the views of primary school teachers regarding gamification. Their study found that classroom teachers were aware of the importance of integrating gamification into teaching practices. Similarly, Balint-Svella [44] conducted research with preschool and primary school teacher candidates and concluded that both teachers and teacher candidates held positive views on the use of gamification in education. Bozkurt [45] also found that teacher candidates had favorable opinions about gamification, noting its positive impact on students' motivation.

The findings of this study suggest that gamification is an influential tool for enhancing students' patriotic attitudes. The significant improvement in the patriotic attitudes of the experimental group underscores the potential of gamification as an innovative and effective pedagogical method for value education. Moreover, the absence of a significant gender-based difference indicates that gamification is equally effective for all students. Teachers' positive attitudes toward the incorporation of gamification into the curriculum suggest that this approach has the potential for broader application in the future.

These results are consistent with findings from previous studies in the literature, which emphasize the role of gamification in improving not only learning outcomes but also value education. In conclusion, the evidence presented in this study highlights gamification as both an effective and practical method for teaching abstract concepts such as patriotism, particularly at the primary school level.

V. Conclusion

Patriotism is regarded as a crucial value that primary school students are expected to develop through social studies courses. The increasing use of gamification in educational activities in recent years, along with the integration of gamified methods into various lessons and subjects, has contributed to enhancing the quality of education. This study aimed to investigate the impact of gamification on fostering patriotic behaviors in primary school social studies courses.

The findings revealed a significant and positive increase in the patriotic attitudes of the experimental group students who received patriotism education through gamification. In contrast, no change was observed in the patriotism attitude scale scores of the control group, which continued with their regular curriculum over four weeks. Moreover, no significant differences in patriotic attitudes were found between male and female students participating in the study.

The majority of primary school teachers reported that gamification had a highly positive effect on students' patriotic attitudes. While many teachers indicated that they had previously used gamification to some extent in cultivating their students' patriotic values, they also expressed a desire to further incorporate gamification in the future to enhance its impact.

The following suggestions were developed in line with the findings obtained from the research and teachers' opinions.

1) It has been understood that gamification is effective in teaching the value of patriotism. Based on this, it will be effective to use gamification in the education of all values targeted to be taught in social studies classes.
2) In-service training should be organized for teachers to enable them to use gamification applications in education professionally.
3) It is thought that working with student groups from different classes to gain students' patriotic attitudes through gamification will contribute to the field.

Conflict of Interest

The authors declare no conflict of interest.

Author Contributions

ZT design the proposal of the research; KN managed the project; SN conducted the research; DS entered data into SSPS and commented the results; NK analyzed the data; SA and ZT and NK wrote the paper and corrected referees' revision requests. All authors had approved the final version.

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