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Student Views on Flipped Learning and Gamification in Social Studies Teaching[*]

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Abstract

Technological advancements have brought about certain changes in the competencies teachers need to possess. The use of technology in education, which began with the incorporation of technological tools and computers into the teaching-learning process, has continued in the form of e-learning, blended learning, and flipped learning. Flipped and gamification-based learning models enrich teaching environments, provide active participation experiences, feedback, motivation, and a fun learning environment. Within the scope of the research, a teaching process incorporating flipped learning and gamification-based learning implementations was designed for the social studies teaching course in the primary school teaching undergraduate program, and the opinions of teacher candidates were collected at the end of the implementation. A single-case embedded design was used in the study. The study group consisted of third-year students in the undergraduate program in primary school teaching at a state university in Izmir, Türkiye. The teaching model applied in the groups was determined by random assignment. The gamification-based flipped learning model was used in one group, and the gamification-based learning model was used in the other. A seven-week quasi-experimental process was carried out with a total of 85 teacher candidates. At the end of the process, the opinions of twelve teacher candidates, six from each experimental group, were collected. The collected data were analyzed using content analysis. The research results showed that in the social studies teaching course conducted with the flipped learning and gamification-based learning models, learners' success increased, lasting learning took place, and there were many positive effects on the learning processes.

Keywords: Flipped learning, gamification, teacher candidate, social studies teaching.

Introduction

Technological developments have brought about certain changes in the teaching profession, and the competencies teachers need to possess. The use of technology in education began with the incorporation of technological tools and computers into teaching-learning processes. Different learning approaches emerged, such as web and internet-based education, e-learning, mobile learning, blended learning, and flipped learning (Ünsal, 2018).

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Traditional educational paradigms are criticized for failing to meet the learning needs of new generations who have grown up immersed in technology (Bergmann & Sams, 2012). In the traditional approach, fundamental knowledge is conveyed through passive listening in the classroom. The deep understanding of knowledge and challenging tasks requiring complex application are left for home (Bergmann & Sams, 2012). The flipped learning model has emerged as an alternative approach to the traditional learning environment. This approach is an innovative model that falls under the blended learning approach, which combines online learning environments with face-to-face learning (Kim et al., 2014; Marshall, 2013).

Flipped learning is defined as the structuring of face-to-face instruction combined with digital and online learning (Castro, 2019). Learners save time, space, and money. Interaction increases during the learning process, immediate feedback is received, and different teaching methods and pedagogical approaches are used. It offers diversity in educational resources and easy access to materials (Anthony et al., 2020; Jost et al., 2021; Özdemir et al., 2021; Park & Shea, 2020).

In the traditional model, the basic transfer of knowledge that takes place in the classroom is moved to before the lesson in the flipped learning model through online materials (videos, audio recordings, texts, etc.) (Bergmann & Sams, 2012). Students learn basic concepts by reviewing video lessons or other learning materials before class. Classroom time is dedicated to application-based active learning activities that require students to assimilate knowledge and focus on problem solving and higher-order cognitive processes (Ağırman & Ercoşkun, 2022; Clark, 2015). Rather than lecturing on the subject, the teacher plans activities that allow students to be active in the classroom and interact with each other. During activities, immediate feedback and peer learning are provided for areas that are not understood or are difficult (Willey & Gardner, 2013). With these features, flipped learning is student-centered compared to the traditional teaching model. The teacher is in a guiding position, and the student is no longer a passive receiver but a constructor of learning (Gilboy et al., 2015). It offers students the opportunity to learn at their own pace and have greater access to materials [Flipped Learning Network (FLN), 2014].

Gamification can also be used to provide feedback to learners and create a fun learning environment. Gamification is the process of incorporating game elements into non-game situations designed to achieve a specific goal (Kapp, 2012). It aims to motivate participants to complete a goal or task, increase interaction, encourage learning, reward the achievement of goals, and make the teaching process enjoyable (Zichermann & Cunningham, 2011). Thanks to the elements it contains, it is widely used in areas such as health, marketing, and education with the aim of increasing individuals' participation, and commitment levels in their environment (Candel et al., 2024; Majuri et al., 2018).

When effectively designed in line with learning objectives, gamification can increase students' success, motivation, and active participation (Asiksoy & Canbolat, 2021; Xiao & Hew, 2024). Through gamification's reward systems and scoring mechanisms, students are motivated to learn (Tunga & Inceoglu, 2020). Learning goals that can be described as boring and challenging for students become fun (Deterding et al., 2011; Werbach & Hunter, 2012). The instant feedback provided by gamification allows students to make immediate corrections in their learning processes (Deterding et al., 2011); collaboration skills improve (Nicholson, 2015). It is one of the effective models that can be used for higher-level learning skills and addressing learning deficiencies (Dichev & Dicheva, 2017).

Incorporating gamification into online environments encourages students to engage in lasting learning by increasing interaction (Castro et al., 2018). Gamification can be used to motivate students to participate in out-of-class activities in the flipped learning model (Huang & Hew, 2018). Flipped learning ensures the continuity of learning by keeping students active outside the classroom (Taşpolat et al., 2021). Game elements used in gamification-based flipped learning environments increase student motivation and participation in the course and make learning attractive. They enhance the learning experience by using competition, collaboration, or in-game rewards (Hamari et al., 2014).

New pedagogical approaches are being sought to improve the quality of learning environments and teaching in higher education (Zhu & Xie, 2018). Considering the problems encountered in teacher training and expectations regarding the use of technology, there is a need to use new pedagogical approaches in teacher education as well. There is a need for teachers who can respond to the needs of the age and adapt to the digital world by taking advantage of the possibilities offered by technology (Kadıoğlu & Özyalçın Oskay, 2023). It is important for teacher candidates to be familiar with educational technologies, use them effectively in teaching-learning processes, and be able to select tools and methods appropriate to student needs (Demiraslan & Usluel, 2008).

Studies using gamification and gamification-based flipped learning in social studies teaching have been examined. The research shows that the relevant models can be successfully applied in social studies lessons at different levels and in different learning areas. Studies conducted in the context of teacher training have revealed that flipped learning has positive effects on social studies teacher candidates' attitudes towards constructivist understanding and their understanding of learning and teaching, contributing to them professionally and academically (Gökdemir, 2018). It was found that the use of game-based videos and gamification in online teaching improved teacher candidates' assessments of their learning styles and motivation in social sciences, increased their active roles in learning processes, and improved the quality of learning (Candel et al., 2024). Gençer (2015) determined that this model increased teachers' workload, that students were satisfied with active teaching methods in the classroom, and that their perceptions of homework were positive. Alsobaie (2018) concluded that student achievement increased and teachers saved class time, but their

workload did not decrease; on the contrary, it increased. Smith states that the flipped learning model provides an opportunity to enhance teaching practice and the teaching profession as a whole (Tucker, 2012).

It is important for future teachers to be able to adapt to innovative educational processes and to have a detailed understanding of contemporary teaching models such as gamification and the flipped learning model. According to Doğan (2015), learners and course instructors should be knowledgeable and equipped regarding the responsibilities and tasks related to these learning models. This is crucial for the successful implementation of the model. Implementing social studies teaching in learning environments based on flipped learning and gamification can positively affect teacher candidates' motivation, success, learning level, and styles. Therefore, it may be one of the possible alternative and effective models in the online teaching-learning soon. It is believed that revealing teacher candidates' perceptions and opinions about these models and increasing their knowledge will contribute to the literature. In the study, a teaching process including flipped learning and gamification implementations was designed for the social studies teaching course in the primary school teaching undergraduate program. The views of teacher candidates on the teaching course conducted with flipped learning and gamification implementations were examined. The research sought to answer the question, *"What are the opinions of teacher candidates on the social studies teaching course conducted with gamification-based flipped learning (GbFL) and gamification-based learning (GbL) implementations?".* The research is expected to contribute to the literature and serve as an example for future studies.

Methodology

Research Design

The research aims to reveal teacher candidates' opinions on gamification-based flipped learning (GbFL) and gamification-based learning (GbL) implementations. The research is designed according to an embedded mixed-methods approach. This approach allows for a more thorough analysis of the study problem by including qualitative data into the research process to assess the efficacy of the experimental intervention (Creswell, 2019).

In the research, data was collected to thoroughly elucidate the participants' experiences regarding the experimental intervention in which gamification-based flipped learning (GBL) and gamification-based learning (GbL) applications were implemented. Within the context of the Social Studies Teaching course in the undergraduate primary school teacher training program, GbFL and GbL were treated as a single case. Since the experiences and opinions of the teacher candidates were examined under different dimensions within this case, the study was structured as a single-case embedded design (Yin, 2003).

Research Sample and Participants

The study group was determined using convenience sampling, one of the purposive sampling methods. Teacher candidates enrolled in the third year of the elementary education undergraduate program at a state university in Izmir, Türkiye participated in the intervention process. The instructional model applied in the groups was determined by random assignment. The gamification-based flipped learning model (GbFL) was applied to Group-A, and the gamification-based learning model (GbL) was applied to Group-B. Information about the experimental groups is presented in Table 1.

Table 1

Descriptive Information about Groups

	Gamification-Based Flipped Learning (GbFL)		Gamification-Based Learning (GbL)		Total	
	n	%	n	%	n	%
Female	34	70,83	29	78,38	63	100
Male	14	29,17	8	21,62	22	100
Total	48	100	37	100	85	100

Of the teacher candidates who participated in teaching course implementations conducted using the GbFL model 70.83% were female and 29.17% were male. In the GbL model, 78.38% of participants were female and 21.62% were male. A total of 85 teacher candidates participated in the implementations. The gender distribution of the groups was found to be similar.

Research Instruments

In the study, which collected teacher candidates' opinions on GbFL and GbL implementations, data were collected using a semi-structured interview form. The form was prepared by the researchers.

A literature review of the relevant field was conducted and existing studies were examined while preparing the interview form. Questions were formulated to reveal the effects of the models used on learning processes, their advantages/disadvantages, implementation difficulties, and opinions regarding the use of these models in teacher training. Care was taken to prepare questions that were clear, understandable, and did not contain leading elements, and a draft form with 11 questions was prepared. The draft form was submitted to three experts for their opinions. Following expert opinions, the form was finalized with eight questions. It was used to determine the opinions of teacher candidates. Examples of questions included in the interview form:

"Q2: What are your thoughts on GbFL/GbL implementations?"

Probes: What are the advantages/benefits of using this model?

What are the disadvantages/drawbacks of using this model?"

"Q4: In courses where GbFL/GbL was used, how did you apply the new knowledge you gained in other situations or other lessons?"

"Q7: What are your views on the use of GbFL/GbL in the training of primary school teachers?"

Data Collection

The implementations were carried out over a total of seven weeks during the fall semester of the 2024-2025 academic year, with six weeks of experimental procedures and one week of interviews with students to evaluate the models used. During the six weeks, course content was developed based on flipped learning and gamification, information about the process, concept teaching techniques (concept map, mind map, concept puzzle, concept cartoon), value teaching approaches, teaching literacy skills, and teaching social studies through mind and board games.

In the GbFL implementations, resources were shared via the DEU Distance Education Portal-Sakai before the lessons. The resources consisted of text files, visually supported presentations, activity examples, and videos created by the researchers. Within the scope of flipped learning, teacher candidates were asked to review the resources uploaded to the system and come to class prepared (Figure 1-2). The teacher candidates' review of the resources before class was monitored through the system. Assignments and assessments were carried out using gamification applications (Socrative, Blooket, Wordwall, etc.) related to the uploaded resources. At the end of the assignments, students were given pre-class scores and corresponding badges, and a leaderboard was created. At the beginning of the class, the leaderboard created for the activities carried out outside the classroom was shared. A summary of the topic was provided to address any gaps in knowledge. After the process was completed, student-centered and application-based activities were carried out (Figure 3-4).

In GbL implementations, theoretical knowledge of the subject was provided first. Existing examples were shared, and then the application part was moved on to. Different digital tools such as Blooket, Coggle, Mentimeter, Wordwall, Kahoot, and Socrative were used throughout the lesson. In group or individual activities, rankings were created by scoring student performance. Examples of photos taken in class during the application process and images of some of the materials used are provided (Figure 5-6-7).

Figure 1.
Gamification Based Flipped Learning Model (GbFL) DEU-Sakai Platform.

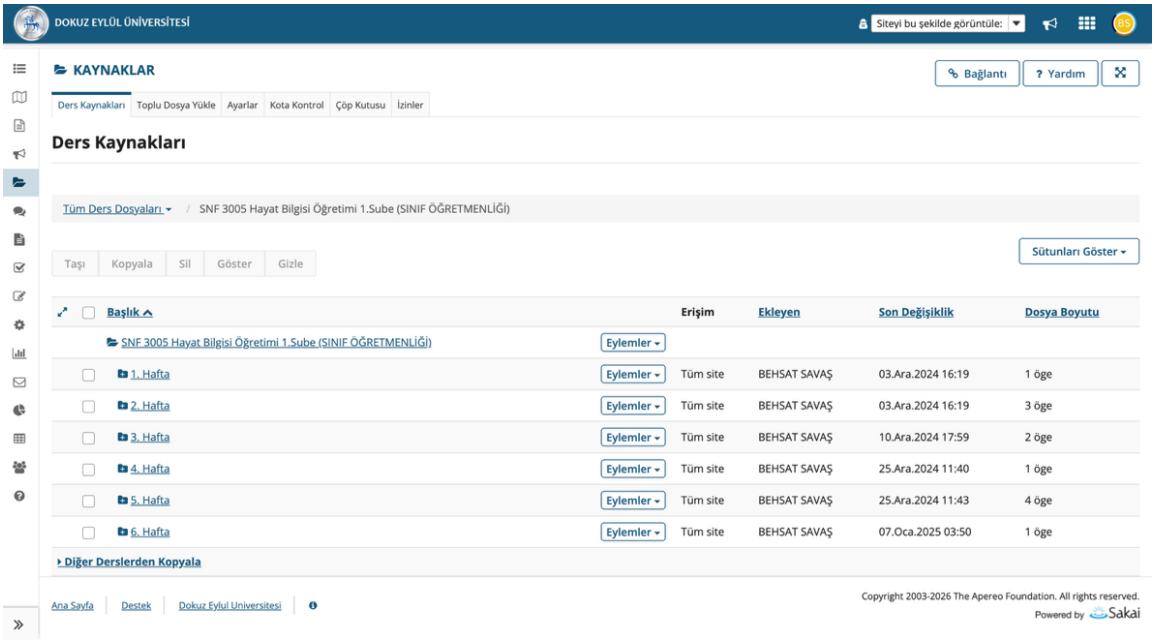


Figure 2.
Gamification Based Flipped Learning Model (GbFL) 2nd Week Pre-Lesson Resources.

Figure 3.
"Concept Map and Mind Map" GbFL Implementation Process.

Figure 4.
Example of a Concept Map and Mind Map Prepared by Participants within the Scope of the GbFL.

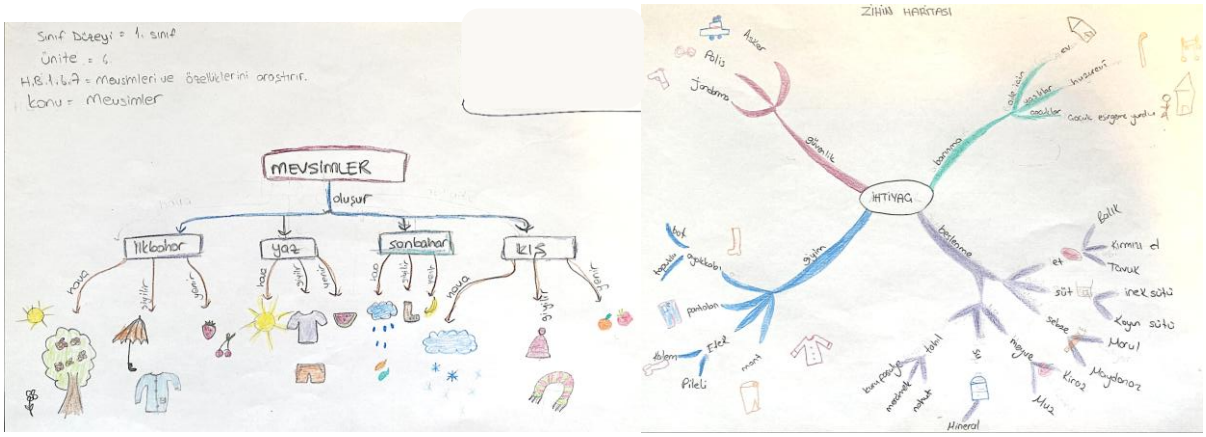
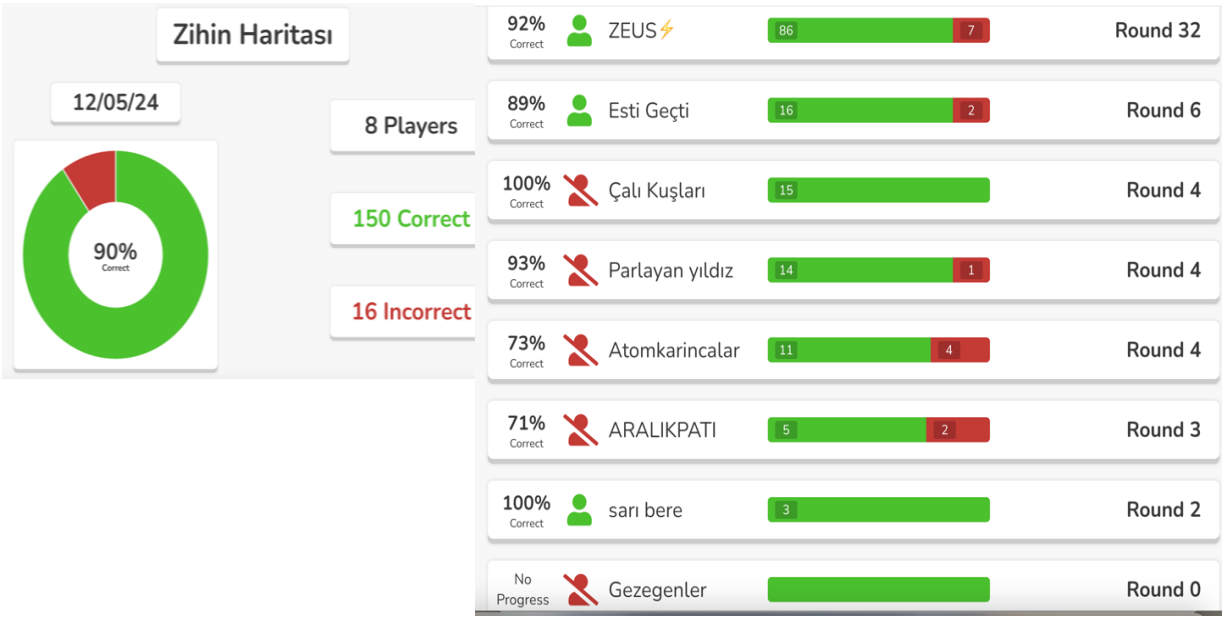


Figure 5.
"Concept Map and Mind Map" GbL Implementation Process.

Figure 6.
Example af a Concept Map and Mind Map Prepared by Participants within the Scope of a GbL.

Figure 7.
Blooket Example Leaderboard for Mind Maps in a GbL.



Analysis of Data

In the study, the data obtained from the interviews conducted with the students after the experimental implementations were used to explain the experimental process. The collected data were analyzed using content analysis technique. The main objective of content analysis is to identify concepts and relationships that can explain the obtained data, organize them in a way that the reader can understand, and interpret them (Yıldırım & Şimşek, 2016).

An inductive approach was adopted in the content analysis, and specific steps were followed. The analysis was conducted in five stages: preparation, coding of qualitative data, identifying themes, organizing the data, interpreting the qualitative findings, and reporting. At the end of the analysis, four themes were identified: *effects on learning processes, positive aspects of applied models, negative aspects of applied models,* and *reflections and transfer to the professional future.* When presenting the opinions of teacher candidates regarding the codes obtained: *P: Participant; F: Flipped Learning Group; G: Gamification Group* represented the abbreviations. For example, P4-F refers to the 4th participant whose opinion was obtained in GbFL; P7-G refers to 7th participant whose opinion was obtained GbL.

Validity and Reliability

The following measures were taken to ensure the validity and reliability of the study:

- In analyzing the data, care was taken to directly transcribe every word expressed by the students when converting the interview recordings into text.

- To enhance the credibility (internal reliability) of the research findings, participants' responses were used without any interpretation and described as they were. The data obtained are presented directly.
- The semi-structured interview form developed by the researchers was revised based on the opinions of three academics who are experts in qualitative research designs.
- To ensure the external validity of the research, the findings were established in relation to the literature to ensure they were consistent and coherent with the conceptual framework.

Results

The research sought to answer the question, *"What are the opinions of teacher candidates on the social studies teaching course conducted with gamification-based flipped learning (GbFL) and gamification-based learning (GbL) implementations?*" The analysis of the collected data revealed four themes: *effects on learning processes, positive aspects of applied models, negative aspects of applied models,* and *reflections and transfer to professional future.* Information about the themes and codes is provided in Table 2.

Table 2
Teacher Candidates' Opinions

Theme	Category	Code	GbFL *(f)*	GbL *(f)*	Total *(f)*
Effects on learning processes	Active and collaborative learning experience	Taking an active role in lesson	2	2	4
		Group work and collaboration	3	1	4
		Class activity-based learning	-	1	1
	Increased motivation and participation	Increased interest in the lesson	7	4	11
		Increased desire to attend the lesson	-	2	2
	Academic achievement and permanent learning	Understanding the subject and learning permanence	3	6	9
		Improvement in exam performance	1	1	2
		Development of high-level thinking skills	1	-	1
Positive aspects of models	Learning process	Instant feedback	1	2	3
		Enjoyable experience	1	1	2
		Technology integration	1	-	1
Negative aspects of models	Difficulties in implementation	Excessive competition	-	2	2
		Disagreement in group work	1	-	1
		Formation of misconceptions	1	-	1
	Difficulties in preparing for the lesson	Problems accessing technology	3	-	3
		Reading materials being boring	2	-	2
		Students' inability to study pre-class	1	-	1
	Difficulties faced by the teachers	Time management in crowded classrooms	1	2	3
		Preparation time for lesson	1	-	1
		Classroom management and noise level	-	1	1
Reflections and transfer to professional future		Intention to use in the future	7	4	11
		Transfer to different situations	5	2	7

Effects of Applied Teaching Models on Learning Processes

The effects of social studies teaching conducted with GbFL and GbL implementations on teacher candidates' learning processes were grouped into three categories: *active and collaborative learning experience, increased motivation and participation, academic achievement and permanent learning.*

Active and Collaborative Learning Experience

Teacher candidates who participated in GbFL and GbL implementations stated that they were active during the course and participated in collaborative activities. As a result of data analysis, active and collaborative learning experiences were listed under the codes of *taking an active role in lesson (f=4), group work and collaboration (f=4),* and *class activity-based learning (f=1).* Teacher candidates expressed their views on the applications as follows:

P4-F: "…Lessons where teachers just lecture us are generally very monotonous. But when done with these flipped applications, I think we are more active in this regard, and it increases our interest and curiosity in the lesson..."

K5-G: "...If you had just given a straightforward explanation, we would have just listened to it, and it wouldn't have been very effective because we weren't doing anything ourselves. But you explained it first. After explaining it, you had us do it too. You included us in the process, and we learned more efficiently. I think it was very effective…"

P2-F: "…There was communication and information exchange between people. We were constantly communicating with each other. There was interaction, and increased our social skills. We were able to express ourselves better…"

P3-F: "…Since we worked as a group, I think our language skills improved, and we socialized more..."

P7-G: "…I collaborated with my friends. For example, being in a group with people I hadn't met before facilitated my social interaction. I think it can be very effective for younger age groups too. I'm the type who is a bit shy in social situations. I don't like to express my own thoughts. But at that moment, we all get a point, and you feel like you have to say something. That's why I pushed myself harder and wanted to be more active..."

Student statements show that teacher candidates became active participants in the lesson conducted with both GbFL and GbL. Group work was carried out in-class activities, lessons were conducted in a spirit of collaboration and communication.

Increased Motivation and Participation

Teacher candidates who participated in the applications reported their views on the teaching models used in relation to their motivation for the course. The category of increased motivation and participation is explained by the codes of *increased interest in the lesson (f=11)* and *increased desire to attend the course (f=2).* The views of the teacher candidates are as follows:

P1-F: "I work in the evenings, leaving work at 2 am. I can get up early to come to this class in the morning. Yes, I can say that it positively affected my motivation and interest..."

P2-F: "The activities increased my participation in the course, my interest increased. Because I enjoyed the activities."

P5-G: "...We played many games and did activities to reinforce the topic. I came to class willingly. Some classes are monotonous with straightforward explanations. I don't think it should be like that; it distracts us. But this way, we have a lot of fun and participate in class as a group; it was very effective. I never missed a class. We can say that it had a positive effect on interest and motivation."

P6-G: "The gamified learning process was great because we learned through games, it was digital, it drew us into the lesson, and it was very productive. Gamification directly draws us into the lesson..."

P12-F: "The activities we did in class and the materials we used increased my interest in the class even more."

P8-G: "After the first week, I was thinking of using my right to be absent and not coming. Then I came for a week or two. As the applications increased and gamification-based teaching was applied to us, I tried not to miss any classes. So, for me, it was a very exciting and effective teaching model... It increased my participation in the class."

It is stated that the teaching models applied increased the motivation of teacher candidates, increased their interest in the course, and made them more eager to attend lessons. It is noteworthy that the views included in the code of increased desire to attend lesson were provided by students in the group where the GbL was applied.

Academic Achievement and Permanent Learning

The effects of the applied teaching models on teacher candidates' learning are listed under the codes of understanding the subject and learning permanence (f=9), improvement in exam performance (f=2), and development of high-level thinking skills (f=1). The statements are as follows:

P3-F: "I believe that teaching lessons through activities rather than verbally makes learning more lasting. That's why I think flipped learning provides more lasting learning because the classroom activities are activity- based rather than just lecture-based...This way, we created a brainstorming session in the class. This also developed my critical thinking skills. At the same time, we solved problems on the activities, and I felt that our problem-solving skills had also developed."

P7-G: "I think it made learning more permanent. I feel that all the work we did has fully settled in my mind, with no details missing..."

P9-G: "The retention of information was very good. I didn't even feel the need to study for the exam. Even now, if someone asked me, I think I could explain the topics clearly; I know it, I mean."

P10-G: "It showed us what we could adapt and what we could do in which areas. We learned these things in a concrete way, such as "you should use this in class" or "you should do this." I think I have become stronger academically."

P5-F: "We learned by doing and experiencing. For example, if you had just explained it and I hadn't practiced it in class, I wouldn't have done very well on the exam. Because we did activities in class, I can recall them and apply them during the exam. That's why I honestly think it's more effective."

P3-F: "We hadn't done this kind of exercise until the midterm. I think there's a huge difference between my midterm exam result and my final exam result. I studied harder for the midterm. I didn't feel the need to study as much for the final because the information stuck better. I think positivity has an effect on success."

It is stated that in-class activities encourage teacher candidates to brainstorm, discuss, and solve problems, providing a learning experience through doing and experiencing. Active participation in permanent learning has been reflected in teacher candidates' exam grades and academic achievements, having a positive effect. It is noteworthy that most of the views (f=6) in the code of understanding the subject and permanent learning relate to GbL.

Positive Aspects of the Applied Teaching Models

The positive effects of the social studies teaching course conducted with GbFL and GbL on the learning processes of teacher candidates were listed under three codes: *instant feedback (f=3), enjoyable experience (f=2), and technology integration (f=1).* Teacher candidates expressed their views on the applications as follows:

P7-G: "I believe that your instant feedback prevents the formation of incorrect information in learning. Because when different concepts came to mind, we might have thought that way, but thanks to your instant feedback, we noticed our mistake right away and achieved meaningful, lasting learning."

P1-F: "I think that because they are used in an integrated way with technology, they prepare us for future periods, and it is easy for students to get used to them...Because instant feedback can be given, it ensures that mistakes are easily and quickly corrected..."

P5-G: "First, we made the learning process fun. We became motivated by having fun when coming to class. As we became motivated, our desire to participate in class increased. That's why I think it's useful."

P11-F: "I think these apps are really fun, and when they fit the lesson content, they'll be useful for students too. The apps were great..."

Teacher candidates stated that receiving instant feedback in lessons conducted with GbFL and GbL increases the efficiency and retention of the lesson. With the use of gamification elements, lessons have become fun and interesting.

Negative Aspects of the Applied Teaching Models

The social studies teaching course conducted using GbFL and GbL implementations have been found to have negative effects on the learning processes of teacher candidates. These were grouped into three categories: *difficulties in implementation, difficulties in preparing for the lesson,* and *difficulties faced by the teachers.*

Difficulties in Implementation

Teacher candidates' views on the difficulties in implementing GbFL and GbL were listed with the codes *excessive competition (f=2), disagreement in group work (f=1),* and *formation of misconception (f=1)*. Their statements are as follows:

P5-G: "Teacher, there might be competition. When there are winners and losers among younger children, sometimes they can't bear to lose. So maybe that could undermine cooperation. If there is competition and excessive grouping, that could be the only problem. Other than that, I don't think there would be any disadvantages."

P4-F: "So, there weren't many difficulties. There were just differences of opinion among our friends sometimes about whether to do this or that. But if we consider these differences of opinion as a richness, there were no difficulties."

P11-F: "Since the topics are given to the students beforehand, they may experience misconceptions when encountering a topic for the first time. We didn't have this, but small groups of students may have difficulties with the concepts. Since they are exposed to it for the first time, they may have difficulties in the process of structuring the information."

Teacher candidates in the experimental group, where the GbL was applied, stated that competition occurred during the activities and that if this was not controlled, it would negatively affect the lesson process. It was stated that sometimes there were problems reaching consensus in group work activities.

Difficulties in Preparing for the Lesson

The problems experienced by teacher candidates in preparing for lessons conducted using the GbFL were listed under three codes: *problems accessing technology (f=3), reading materials being boring (f=2),* and *students' inability to study pre-class (f=1).* Student statements are as follows:

P1-F: "I think the biggest disadvantage is that not all students have equal access to technology and other resources. This could be a challenge."

P2-F: "I think it being technology-based is a bit of a problem. Yes, we can access the resources, but since I live in a dormitory, sometimes I didn't have internet access, and since I didn't have a computer or tablet, I had problems accessing it from my phone. The parts that were more verbally focused were a bit boring. The reading sections were boring, but other than that, I thought the activities were quite good."

P3-F: "Since we studied on our own, there were times when we couldn't look at the materials, and weeks when we couldn't study. We couldn't read the uploaded resources.There was a bit too much reading and theoretical PDF material. It would have been better with more videos. Other than that, I didn't experience any other difficulties."

In teaching conducted with the GbFL, teacher candidates should review the resources uploaded before class and come to class prepared. The statements indicate that in some weeks they were unable to come to class prepared, and that the information and text-heavy nature of the uploaded resources made it difficult for them. Some teacher candidates experienced problems accessing technological resources. Such problems caused disruptions in the course process and prevented the necessary yield from being achieved. Despite technological inadequacies, most participants who did not have a personal computer were able to adapt to the process via their mobile phones. The participants' views are as follows:

P1-F: "I don't have a computer... Accessing it from my phone was not difficult. I was able to access all the documents; my phone was sufficient for accessing resources."

P3-F: "I generally downloaded and read it on my phone. Because I needed to read it. But when I wanted to take notes, I opened it on my tablet."

According to the findings, it appears that teacher candidates carry out their lesson preparation using their mobile phones and tablets.

Difficulties Faced by the Teachers

The difficulties that teachers who plan their lessons using a GbFL and GbL in their classrooms may encounter are listed with the codes *time management in crowded classrooms (f=3), preparation time for lesson (f=1), classroom management and noise level (f=1).* The statements of the teacher candidates are as follows:

P3-F: "Perhaps we could have increased the lesson time. Because our class is very crowded. I think we had trouble presenting the activities because the class was crowded."

P6-G: "As a disadvantage, if we cannot determine the duration of the gamification, the lesson may become scattered. Because there is a certain competition, a friendly competition. If the duration is too long, the competition within the class will also increase, so there may be disadvantages. That duration needs to be set well."

P1-F: "If the teacher is not competent, they may take longer than normal to prepare the resources, which would be a waste of time. They need to be knowledgeable, especially about technology, so that they can provide the necessary data and information to the students."

P8-G: "The negative aspects could be as follows. In a crowded classroom, there may be a lot of noise and sound. The teacher may not be able to prevent this. If each group makes a sound during gamification, noise will be created, the lesson will be prolonged, and lesson time will be wasted."

Teacher candidates believe that implementing GbFL and GbL in crowded classrooms can be challenging. They emphasize that teachers must have sufficient knowledge and equipment to plan an efficient lesson process.

Reflections and Transfer to Professional Future

At the end of the social studies teaching course conducted with GbFL and GbL implementations, teacher candidates were asked for their opinions regarding the use and transfer of what they had learned . The opinions received were listed under two codes: *intention to use in the future (f=11) and transfer to different situations (f=7).*

Intention to Use in the Future

The views of teacher candidates regarding the implementation of the models in their professional lives are as follows:

P3-F: "We did activities, and I realized that we could use these activities throughout our teaching careers.I saw various activities and can do them in the future."

P4-F: "I think it was nice for us to do something together, and I think it will be more beneficial to do activities like this with students in our future teaching process, so I will use it in the future."

P11-F: "I think it's a model that can be used in preparing for teaching, in graduate school, or in projects. Showing these types of educational models trains teachers both pedagogically and in terms of subject knowledge. In the future, instead of a straightforward, monotonous presentation, education can be provided through these types of applications."

P5-G: "I definitely think it should be used. I can apply it when I become a teacher in the future. Because we will be working with younger age groups, children's attention spans are short. It won't work if I just lecture. We can do these activities to keep the children engaged. By making the lesson fun, I will increase the children's motivation..."

P7-G: "Our internship is in fourth grade. I think I've learned very well which teaching approach to use for which subject when we are assigned or during our internships."

P9-G: "It changed my perspective on primary school teaching. After seeing the GbL, I think it will be useful for me academically and professionally. Because today's children really know nothing but games. They want to play everywhere. And using this model instead of old educational models will be better. Students will learn while having fun."

Teacher candidates who participated in learning applications based on GbFL and GbL generally have positive views about the applications. This indicates that they will be able to benefit from these models in their future professional lives. The views expressed support the idea that participants will use these models.

Transfer to Different Situations

The teacher candidates' views on applying the knowledge and skills they acquired during the experimental process to different situations or using them in other courses are as follows:

P1-F: "In the science teaching course, we prepared a puzzle related to the learning outcomes appropriate for that class from the puzzles we saw with you. I used it there."

P2-F: "I think it could be math. It could be science. I mean, I think it could be used in different courses."

P4-F: "We can integrate this model (GbFL) other courses. For example, it could be in a science course, or it could be for a math course. I think giving the student a topic beforehand and having them apply it in class is usable and very effective."

P6-G: "...I think gamification should be used in every subject... Because games draw people in. We can learn things through games."

P10-G: "I believe that games and gamification should be integrated with other subjects in both digital and traditional settings. I want games to be used in life science, math teaching, science teaching, Turkish teaching—in every area. Children are already at the age of play. Therefore, gamification should be integrated into other subjects and be connected."

P7-G: "I think it can be used in other subjects too. I am in favor of adapting it to the subject matter; it can be applied to any subject. We are in the age of technology. Our students are now tech-savvy. They constantly play digital games at home. I think the games here will attract their interest and they will actively participate in the lesson."

Teacher candidates in groups that applied the GbFL and GbL stated that these learning models can also be used in different subjects such as science, mathematics, life science, and Turkish. They believe that lessons designed with gamification processes will have a positive effect on students.

Discussion and Conclusions

Within the scope of the study, the views of primary school teacher candidates on social studies teaching lessons conducted using gamification-based flipped learning (GbFL) and gamification-based learning (GbL) implementations were examined. The results of the analysis revealed the effects of the applied models on the learning processes of teacher candidates, the positive and negative aspects of the models, and their implications for professional future and transfer.

It was concluded that social studies teaching course conducted using GbFL and GbL positively affected teacher candidates' learning processes. In both models, it was determined that learners took an active role in the lesson, participating in group work and collaboration. In the GbL, it was stated that a classroom activity-based learning experience was achieved. Bergmann and Sams (2012) state that the main purpose of the flipped classroom model is to create time to carry out active learning activities in the class. Research with similar conclusions to those reached in this study was found.

Ibrahim and Callaway (2022) stated that students preferred the flipped learning model because it provided active learning experiences through collaboration and practical activities. It was emphasized that the flipped learning model improves students' communication and collaboration skills (Korucuk, 2021; Ökmen, 2020; Çakır et al., 2019; Gökdemir, 2018; Murat, 2018). Debbağ (2018) states that, with the flipped classroom model, teacher candidates' teaching skills improve, and active

participation in lessons is ensured. Graziano (2017) indicates that teacher candidates are more productive and willing in the classroom and that peer learning occurs. In their study, Street et al. (2014) emphasized that the flipped classroom model enhances success because it allows for in-class active learning experiences, interactive materials, peer interaction, collaboration, question answering, and discussions. Sırakaya (2017) states that in the gamified flipped classroom model, students come to class prepared, are more active in the classroom, more willing to participate in activities, and learn through fun.

It was concluded that the applied models increased teacher candidates' interest and motivation towards the course, and that gamification applications aroused learners' desire to follow the course. Similar to this result, Akçayır and Akçayır (2018) stated in their study that the flipped learning approach increased learning motivation among teacher candidates and supported learner autonomy. Filiz (2018) concluded that teacher candidates felt the desire to actively participate in classroom activities in flipped learning and enjoyed these environments.

Aydın (2016) reported that teacher candidates found the flipped learning model to be different, interesting, fun, and effective. He emphasized that the gamification applications used increased their motivation to work and made the lesson fun by creating a competitive environment. GbL includes reward systems and scoring mechanisms such as badges, points, competitions, and leaderboards. These elements create an environment of competition and cooperation within the lesson. It is stated that gamification elements motivate individuals to learn and ensure their active participation in lessons (Ertan & Arkün Kocadere, 2022; Tunga & İnceoğlu, 2020); it also improves learning enjoyment and anxiety levels (Arsyad et al., 2024). In their study, Candel et al. (2024) concluded that the use of GbFL (Socrative and Quizizz) in the social studies course positively affected students' perceptions of teaching style, learning quality, and motivation.

It was determined that GbFL and GbL models have a positive effect on teacher candidates' understanding of the subject and ensuring the permanence of learning. It was determined that the retention of information increased in the social studies teaching course conducted with the GbL model. Aydın (2016) revealed that the flipped classroom model made classroom time more efficient, the lesson was student- centered, the information was more durable, and teacher candidates felt more comfortable. In line with the findings, Şahin et al. (2017) stated that the combined use of flipped learning and gamification played a positive role in increasing the continuity and efficiency of learning; Gökdemir (2018) stated that it contributed to the retention of what was learned and increased the self-confidence of learners. Akbulut (2019) revealed the positive effects of the flipped learning model on personal development skills such as technology use, learning transfer, and self-regulation, as well as on learning outcomes such as academic achievement, lasting learning, and motivation. Kılıç (2022)

concluded that using the flipped learning model in social studies classes makes abstract topics concrete, increases retention and interest in the lesson, ensures students come to class prepared, and facilitates experiential learning.

The models used in the research revealed that lasting learning achieved through active participation led to improvements in teacher candidates' exam performance and academic achievement. Studies indicate that the flipped classroom model increases teacher candidates' academic achievement, positively affects their interest and attitude toward the course, and reduces their cognitive load (Ibrahim & Callaway, 2022; Yurtlu, 2018; Turan, 2015). Aydın (2016) found that teacher candidates' academic performance improved in the Material Design and Use in Education course conducted with the flipped learning model; Aljaser (2017) found that their Classroom Management course success was higher than in the traditional model; Debbağ (2018) concluded that it positively affected academic achievement, motivation, self-efficacy beliefs, and attitudes toward the Instructional Principles and Methods course. It was stated that the combined use of flipped learning and gamification increased students' academic achievement and motivation (Zainuddin, 2018), and led to better learning outcomes (Özer et al., 2018; Tarhan, 2019). Contrary to these findings, Sailer and Sailer (2021) stated that using gamification elements in flipped classrooms did not make a significant difference in student achievement.

Based on the views of teacher candidates, it was concluded that GbL activities encourage brainstorming, discussion, and problem solving, providing a hands-on learning experience. Gelen and Özer (2010) also stated in their study that the gamification approach encourages the development of problem-solving skills in students.

The methods and techniques used in teaching processes have positive and negative aspects for both learners and teachers. Identifying these aspects and taking measures to address them is crucial for the effective implementation of methods and the improvement of education quality. Following GbFL and GbL implementations, teacher candidates' opinions on the positive and negative aspects of the models were collected. Teacher candidates expressed many positive views regarding the learning process.

One positive view is that incorporating gamification elements into the models used makes lessons more enjoyable and engaging. Miller (2012) stated that flipped learning increases interaction in lessons, making them more enjoyable and allowing for more productive classroom activities. Love et al. (2014) highlighted the positive impact of flipped education model applications, noting that teacher candidates found classroom activities enjoyable and intriguing, and that they were effective in helping them acquire skills. Aydın (2016) emphasized that teacher candidates found the flipped learning model different, interesting, and efficient, that gamification applications such as Kahoot

increased their motivation and encouraged them to work, and that competitions created a competitive environment, making the lesson enjoyable and fun.

Learners stated that they were able to receive instant feedback in social studies teaching lessons that used GbFL and GbL, and that this increased the efficiency and retention of the lesson. The rapid feedback provided by gamification helps students make immediate corrections in their learning processes and learn by recognizing their mistakes (Gee, 2003). Thanks to this feature, it can be used as an effective and efficient model.

It was concluded that the GbFL, with its technological elements, supports individuals' perspective and skill development regarding the use of technology in education. Similar to this conclusion, Akbaş (2025) revealed a positive and significant relationship between teacher candidates' flipped learning competence and their techno-pedagogical content knowledge (TPCK) levels. Hao and Lee (2016) found that the flipped learning experience improved teacher candidates' pedagogical knowledge, anxiety management skills, and TPCK levels; Öztürk (2017) concluded that technology knowledge, and TPCK self-confidence showed positive development. In her study, Filiz (2018) stated that flipped learning provided teacher candidates with the opportunity to learn about many digital tools and resources that they could use in their professional lives.

In addition to positive views, the study also found that some difficulties were encountered in the implementation of the models. It was stated that disagreements arose during group work activities in the lessons. Karamert (2025) also revealed in his study, designed using a GbFL approach, that difficulties in teamwork during group activities had a negative impact on students.

It was stated that excessive competition occurred during activities in social studies lessons conducted with GbL, and that this could negatively affect the lesson process if not controlled. Particularly in younger age groups, lessons must be well planned, and care must be taken in the use of gamification elements.

In the flipped learning model, learners should come to class prepared using resources prepared in advance and provided through the system. Teacher candidates stated that they were unable to complete their tasks in the pre-class phase because they did not have a personal computer or could not connect to the internet. Problems with access to technological resources cause disruptions in the lesson process and prevent the necessary efficiency from being achieved. Therefore, it is crucial for all students to have equal access to technology for the methods to be successful. Fraga and Harmon (2014) revealed that some teacher candidates expressed negative views about the flipped learning model due to technical difficulties. Turan and Göktaş (2015) reported that teacher candidates considered the model's disadvantages to be the lack of technical tools, the time-consuming nature of the method, and the requirement to watch videos before class. Aydın (2016) stated that students

experienced problems, particularly regarding the internet resources required to watch videos; Akbulut (2019) stated that the model's effectiveness could decrease if students did not have technological resources and if the classroom was not adequate in terms of physical and technological tools.

Teacher candidates stated that they found the reading materials included in the resources uploaded to the system prior to class in the flipped learning model boring and requested that more video and visual-based materials be prepared. It was concluded that students preferred the interactive visual design features provided by videos over text-based content. Similarly, Moffett (2015) stated that presenting basic information to students through videos before class allows teachers to make free and effective choices in classroom activities. Schmidt and Ralph (2016) stated that short videos should be used in the learning process for the successful presentation of course material. However, Bergmann and Sams (2012) argued that the flipped learning model is not only about videos, but that materials such as books and documents can also be used alongside videos.

Views were presented that misconceptions may arise in learners while completing learning tasks in the pre-class phase of the GbFL. Parallel to these views, Kılıç (2022) believes that participants may be insufficiently prepared while learning at home, may have difficulty understanding the topics, and may learn incorrectly. Yiğit (2024), Sams and Bergmann (2013) stated that the emergence of misconceptions among teacher candidates is a difficulty that may be experienced in flipped learning.

Participants shared their views on the difficulties teachers might encounter during the process. It was stated that time management could be challenging in GbL conducted in crowded classrooms. It was stated that the gamification tools used in lessons would increase the noise level in the class and that classroom management could be difficult. Kılıç (2022) stated that when class sizes are large, using the model becomes difficult and teachers struggle to maintain classroom management.

It was stated that teachers have a heavy workload in the preparation phase of the flipped learning. It was concluded that teachers need to have sufficient knowledge and equipment to plan an efficient lesson process and that this situation will affect the lesson preparation time. For the flipped learning to work well, teachers need to have effective material preparation and technology use skills (FLN, 2014). Practitioners' lack of skills in using technology and preparing materials can negatively affect the implementation of the model (Gençer et al., 2014). Long et al. (2017), in their study examining the views of teaching staff, concluded that flipped learning is labor-intensive and time-consuming for instructors. Alsobie (2018) found that the flipped learning increased student success and saved teachers classroom time, but that their workload did not decrease; on the contrary, it increased. Akbulut (2019), in the academic opinions he received, stated that if teachers do not have sufficient theoretical and practical knowledge to implement the model and if the learning process inside and outside the classroom is not well planned, the effectiveness of the model may decrease. Kılıç (2022) also stated that in implementing the flipped learning, teachers must have the appropriate

level of proficiency in using technological tools and equipment, as well as the ability to prepare materials suitable for the content and students.

Teacher candidates generally hold positive views regarding social studies teaching conducted through GbFL and GbL. This is supported by their statements indicating they will use these models in their professional lives. Similarly, Aydın (2016) noted in their study that teacher candidates intended to use these models with their own students once they became teachers.

Statements were made regarding the use of GbFL and GbL, applied within the social studies teaching course, in different courses or situations. Teacher candidates stated that the models could also be used in different courses such as science, mathematics, life science, and Turkish. They stated that courses designed with gamification would have a positive effect on students. The teaching models used can be adapted to different subjects thanks to their elements and flexible structure. Indeed, Dill (2012) stated that when applied correctly, the flipped learning is an educational model that can be applied to all subjects, and that it is important to have the necessary technological features and flexibility. Aydın (2016) examined students' thoughts about the future and found that the vast majority wanted to use the model in their other courses. He emphasized that they could prefer the model especially in application-based courses that require reading and producing work, such as social sciences. Akbulut (2019) concluded that the flipped learning can be applied in all subjects when appropriate content design and effective lesson planning are implemented.

It has been understood that the GbFL and GbL applied in the Social Studies Teaching course have multidimensional effects on primary school teacher candidates. All the results obtained show that the models can be used at the higher education level and in teacher training programs. When used, they will have a positive impact on learners and provide flexibility to teachers and learners in organizing and planning the teaching environment. These models are powerful tools that shape teacher candidates' professional identities, pedagogical beliefs, and perspectives on technology, beyond being merely academic teaching techniques.

Based on the research findings, the following recommendations can be made:

- GbFL and GbL can be used in higher education settings.
- When preparing flipped learning materials, short, focused, and interactive videos and podcasts can be prepared instead of long reading texts.
- In-service training can be organized for teaching staff on topics such as digital content development, gamification design, and effective video lesson preparation.
- This study is limited to qualitative data and was conducted within the context of a specific course. Mixed-method research can be conducted.

- Longitudinal studies can be conducted to track how teacher candidates who have received training in this model use the models when they begin their careers.

Research and Publication Ethics

In this study, all rules specified in the "Directive on Scientific Research and Publication Ethics of Higher Education Institutions" were followed. None of the actions specified under the second section of the Directive, "Actions Contrary to Scientific Research and Publication Ethics", have been carried out.

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