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The Attitudes of Teacher Candidates towards the Gamification Process in Education

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Abstract: *In this study, pre-service teachers' attitudes towards the gamification process were discussed. Descriptive scanning method, one of the quantitative methods, was used in the study, and the data were analyzed and tabulated. The Gamification process scale developed by Baydaş and Çiçek was used to collect the data to be used. A total of 67 teacher candidates, including 42 special education and 25 classroom teachers, participated in the study. The data obtained from the pre-service teachers were taken online via Google Form due to the Covid 19 pandemic. The teacher candidates gave answers to the 6 dimensions of the scale regarding Competition, Fun, Busy, Outcome Expectation, Effect on Learning and Intention to Use in the Future.*

Keywords: *Education, gamification in education, e-learning, mobile learning.*

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1. Introduction

Technology is developing day by day and provides important convenience on the lives of individuals. With the development of technology, it is seen that there are important innovations in the field of education (Bicen & Demir, 2020). With the developments in which these innovations took place, the games on computers became very common and turned into a source of motivation. These games are not only for children, it has been determined that they attract the attention of people of all ages and they spend most of their days with these games (Gros, 2007). For these reasons, the use of games in different areas has been considered and one of these areas has been education (Deterding, 2012). As computer games accelerate learning, they have become one of the leading elements of cooperation, participation, problem solving and motivation enhancing tools that make education and training more effective and fun (Kebritchi et al., 2010). It has been observed that the games in the market generally contain violence. In order to provide learning more effectively in the education and training process, it is aimed to provide guidance to increase the participation of students in the course by adding elements of entertainment and motivation to the games and adding educational purposes (Kapp, 2012). It has been stated in various studies that the games used in education and training have positive contributions to students' learning processes and their participation in the course (Shin et al., 2012). However, despite these positive developments, finding or re-designing a game suitable for education and training purposes is one of the most important problems of game-based learning. It is not easy to design a game that will provide both entertainment and education. In addition, the transfer of the gains provided by games to real learning activities is one of the most important problems encountered in learning with computer games (Whitton, 2012). Based on these reasons, the idea of turning non-game structures into games has emerged, considering the time people spend on games and the pleasure they have received from games in the digital age, and this has been defined as gamification (Yildirim & Demir, 2014).

The term gamification was first used in 2003 by British game developer Nick Pelling. Gamification is making the activities more enjoyable and participatory by using game activities (Kim, 2010). Richter et al. (2015) defined gamification as applications that require using the motivation of games for success, continuity and participation. Study is a technology application that makes boring activities such as filling out a questionnaire or reading a document or data fun for individuals. Gamification is not a game,

it includes all the elements related to the game, that is, it refers to the use of game elements, not to design a game from scratch (Xu, 2012). Gamification is more flexible than games because it allows the user to master the entire duration of their presence (Werbach & Hunter, 2012). Because gamification contributes positively to individuals, it has attracted the attention of designers and educators, making environments such as work and school more enjoyable, and gamification can be used to increase participation in these environments (Deterding, 2012). The basis of gamification is based on technology and its main purpose is to increase the experience and participation between the system and the user. The common point of the definitions is that gamification will increase participation and motivation (Sailer et al., 2013). The basic logic in gamification is the use of games in areas such as education, health, trade that do not include games, which increase the peace and positive motivation that games provide to individuals. The positive increase and the increase of participation on students created by gamification on education is one of the most important factors for the increase of gamification. However, in order to increase the effect of gamification on education, teachers should have knowledge on gamification studies.Teachers' attitude on gamification is extremely important. Teachers should also have a positive place in the relationship between education and technology, and they should be able to master the requirements of the age, so teachers should be acquainted with gamification activities and acquire knowledge while they are still a teacher candidate (Tunga & İnceoğlu, 2016). In this study, it was aimed to address the attitudes of teacher candidates towards the gamification process and to examine these attitudes in the light of the findings.

2. Purpose of the research

The general purpose of this study is to determine the attitudes of pre-service teachers towards the gamification process used during their lessons. The sub-problems determined to achieve this general purpose are as follows;

1) What are the attitudes of the teacher candidates towards interpersonal competition in the lessons made with gamification?

2) Are the lessons made with gamification fun for individuals?

3) What are their attitudes towards result expectancy in activities performed with gamification?

4) What is the level of attitudes of students towards the level of engagement in activities with gamification

5) What is the effect of the lessons made with gamification on learning?

6) What are the pre-service teachers' opinions about using gamification-related activities in the future?

3.Method

3.1. Research Model

The scanning model, one of the descriptive research methods, was used in the study. The scanning model is a model that aims to describe the facts that existed in the past or occurred about a current situation as they are (Karasar, 2020).

3.2. Sample

The universe of the research consists of 25 Classroom Teachers and 42 Special Education teacher candidates studying at universities in Nicosia, in the Turkish Republic of Northern Cyprus, in the 2019-2020 academic year. Participants; Classroom Teaching department consists of 3rd grade and Special education teaching 4th grade.

3.3. Data Collection Tools

Within the scope of the research, the Gamification Process Scale developed by Baydas and Cicek (2019) was used. The scale is in the 5-point Likert type and it is "1 - I do not agree at all", "2 - I do not agree," "3 - I do not agree", "4 - I agree," "5 - I completely agree". In line with the scale, the responses of the pre-service teachers to the sub-dimensions of gamification in the learning environment, competition, entertainment, engagement, result expectation, effect on learning and intention to use in the future were interpreted as a table.

3.4. Data Analysis

The data obtained in the study were analyzed with statistical program and reliability validity tests were performed. Pearson Correlation was used in the analysis of the data. Findings were presented in summary tables consisting of frequency (n) distribution, mean and standard deviation. The significance level was taken as 5% ($p = 0.05$) in all analyzes.

4.Findings

Table 1. Interpersonal Attitudes Towards Competition During Lessons With Gamification

	N	Min	Max	Mean	Std. Deviation
I get excited when I get degrees while playing on a mobile application (such as the Kahoot system).	67	3,00	5,00	4,2	,65
I look at the performance of others to feel better about my own performance on the mobile app (such as the Kahoot system).	67	2,00	5,00	4,4	,58
Announcing the scores at every step on the mobile application (such as the Kahoot system) increases my excitement.	67	1,00	5,00	3,7	,99
Valid N (listwise)	**67**				

Considering the answers given to the items related to the attitudes towards interpersonal competition in the gamification process, it is seen that the teacher candidates respond positively and above average towards competition. I look at the performance of others to feel better about my own performance on the mobile application (such as the Kahoot system) with a rate of 4.4 for the item with the most positive answers. It was determined to be.

Table 2. Prospective Teachers' Attitudes towards Entertainment in Lessons Made with Gamification

	N	Min	Max	Mean	Std. deviation
It's fun to play together in the same classroom on the mobile app (such as the Kahoot system)	67	2,00	5,00	4,1	,74
It's fun to play games on the mobile app (such as the Kahoot system).	67	2,00	5,00	4,2	,71
Applications (music, limited time excitement, visual design etc.) on the mobile application (such as the Kahoot system) are fun.	67	1,00	5,00	3,7	1,04
Valid N (listwise)	**67**				

Considering Table 2, it was determined that teacher candidates' attitudes towards the lessons made by gamification in the entertainment dimension were positive when the averages were considered. Accordingly, the highest average item was "It's fun to play games on a mobile application (such as Kahoot" with 4.2.

Table 3. Students' Attitudes Towards the Occupation Level in the Activities Made with Gamification

	N	**Min**	**Max**	**Mean**	**Std. Deviation**
Time flies when using the mobile app (such as the Kahoot system).	67	1,00	5,00	3,1	1,07
When playing on the mobile application (such as the Kahoot system) the focus is on the game.	67	2,00	5,00	4,0	,81
While playing on the mobile application (such as the Kahoot system), I get caught up in the game.	67	2,00	5,00	4,1	,79
Valid N (listwise)	**67**				

According to Table 3, when the attitudes of pre-service teachers, which is another sub-dimension, towards the level of engagement in the activities are examined, it is seen that the answers given to the items are above average with the highest rate of 4.1. It was concluded that the answers given to the item.

Table 4. Attitudes towards Result Expectations in Activities Made with Gamification

	N	**Min**	**Max**	**Mean**	**Std. Deviation**
Playing against other students on the mobile app (such as the Kahoot system) excites me.	67	1,00	5,00	3,4	1,18
It's fun to race against my other friends on the mobile app (such as the Kahoot system).	67	3,00	5,00	4,2	,61

I try to have my name in the platforms (social networks, board etc.) where the results of mobile applications (such as Kahoot system) are shared.	67	1,00	5,00	3,4	1,14
I try to achieve the success criteria (medal system, student of the week, etc.) on the mobile application (such as Kahoot system).	67	1,00	5,00	2,9	1,02
I try to have my name at the top in the rating of mobile applications (such as Kahoot system).	67	2,00	5,00	3,7	,88
Valid N (listwise)	**67**				

When Table 4 is examined, it is seen that the responses given by the teacher candidates regarding the result expectation in the courses where the gamification process takes place, according to this, it is fun to compete against my other friends on the mobile application (such as the Kahoot system ...) with the highest rate of 4.2 in the sub-dimension. While buying the item, I try to achieve the success criteria (medal system, student of the week, etc.) on the mobile application (such as the Kahoot system) with the lowest rate of 2.9. It has been determined that the article has taken.

Table 5. Attitudes Related to the Effect of Lessons Made with Gamification on Learning

	N	**Min**	**Max**	**Mean**	**Std. Deviation**
When I play games on a mobile application (such as the Kahoot system) I look more positively towards the subject content.	67	1,00	5,00	3,7	,99
I learn the subject content while playing games on a mobile application (such as the Kahoot system).	67	1,00	5,00	3,7	1,06
It helps me to achieve the goals of the course on the mobile application (such as the Kahoot system).	67	1,00	5,00	3,6	1,06
I feel that I am trying to learn on the mobile application (such as the Kahoot system).	67	1,00	5,00	4,1	,89

Providing instant feedback on every question on the mobile application (such as the Kahoot system) contributes positively to my learning.	67	1,00	5,00	3,3	1,23
Valid N (listwise)	**67**				

Considering the attitudes of the pre-service teachers towards the effect of gamification on learning, I feel that the answers given to the items are above average, but in the light of the answers given, the highest rate is 4.1 with the item "I am trying to learn on mobile application (such as Kahoot system)." The lowest rate is 3.3 with the item "Providing instant feedback on every question on a mobile application (such as the Kahoot system) makes a positive contribution to my learning."

Table 6. Attitudes Towards Using Gamification-Related Activities in the Future

	N	**Min**	**Max**	**Mean**	**Std. Deviation**
I would like other lecturers to use their mobile applications (such as the Kahoot system) by gamifying the lessons.	67	1,00	5,00	2,1	1,07
In the future, I intend to use mobile applications (such as the Kahoot system) by gamifying my own lessons.	67	1,00	5,00	3,5	,80
In the future, I plan to use mobile applications (such as the Kahoot system) by gamifying my own lessons.	67	1,00	5,00	3,3	1,08
In the future, I will suggest my fellow teachers to use mobile applications (such as the Kahoot system) by gamifying their lessons.	67	1,00	5,00	2,5	1,32
Valid N (listwise)	**67**				

Considering the attitudes of the teacher candidates towards using the activities related to gamification in the future, it is seen that the answers given according to the items differ. In light of this, the highest rate was 3.5, "I intend to use mobile applications (such as the Kahoot system) in the future by gamifying my own lessons". While receiving the answer given to the item, it is seen that "I would like other instructors to use mobile applications (such as the Kahoot system) by gamifying the lessons. "

4. Conclusion and Discussion

In parallel with the first sub-objective of the study, when examining the attitudes towards interpersonal competition in the gamification process, it was seen that the teacher candidates responded positively and above the average according to the findings, but the item with the most positive answers was above 3.0. It was determined to receive a rate of 4.4. Çağlar (2016), in his study titled Designing, Implementing and Examining a Gamified Learning Environment According to Various Variables, investigated the level of competition of individuals and stated that competition has an important place in gamification, as if supporting the results obtained in this study. According to the results obtained from the attitudes about entertainment towards the lessons, when the averages are considered, it is determined that it is in a positive way. Accordingly, it was concluded that the item with the highest average had a ratio of 4.2. Lee and Hammer (2011), in their study on gamification in education, stated that gamification made education more enjoyable and that fun learning created with participation and supported the result of this study. For the third sub-purpose of the study, when the attitudes of the teacher candidates towards the level of engagement in the activities were examined, it was found that the answers given to the items were above the average and the highest rate was found to be 4.1. Castro et al. (2018) evaluated the effects of gamification in the e-learning environment and determined that gamification increased the level of engagement in parallel with this research, according to the results of this research. Although it was concluded that the item with the highest rate was 4.2, the lowest rate was 2.9. Gündüz (2020) conducted a study on the Effects of Gamification of the Online Dimension of Transformed Learning on the Learning Lives of Pre-service Teachers.According to this, in parallel with the results obtained in this study, the motivation and results of gamification differed, but the results obtained in the experimental group increased positively and gamification was used in education. It was determined that positive results came together in the group. When looking at the attitudes towards the learning effect of the courses in which gamification is used, which is the fifth sub-objective of the study, it was concluded that the answers given to the items were above average, but in the light of the answers given, the highest rate was 4.1, and it was concluded that the teacher candidates generally had higher than average and positive attitudes. The effect of gamification on student participation in a transformed lesson was examined by Huang, Hew and Lo in 2018 (Huang et al., 2018). Accordingly, he stated that the participation in the courses in which gamification takes

place is extremely high and its effect on learning increased in a positive way in line with the result obtained in this study. Considering the attitudes of the teacher candidates towards using the activities related to gamification in the future, it is seen that the answers given according to the items differ. According to the answers given to the scale items, it was determined that the average of 3.5 was the highest and they had positive attitudes. According to the results of Baydas and Çiçek, in their study examining the gamification process in undergraduate education in 2019, it was observed that the prospective teachers had attitudes towards using gamification in the future, in support of the result of this study.

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