



## RESEARCH ARTICLE

# Investigation of Educational Game-Playing Skills of Preschool Teachers

Serpil AKÇINAR<sup>1\*</sup> and Ramazan ARAK<sup>2</sup>

<sup>1</sup>İnönü Üniversitesi, Spor Bilimleri Fakültesi, Malatya / Türkiye

<sup>2</sup>İnönü Üniversitesi, Spor Bilimleri Fakültesi, Malatya / Türkiye

\*Corresponding author: stimurkaanakcinar@gmail.com

## Abstract

This study aims to assess the educational game-playing skill levels of preschool teachers. The survey method, a quantitative research approach, was employed in this study. The study involved 61 preschool teachers from official kindergartens and kindergartens affiliated with the Diyarbakır Provincial Directorate of National Education during the 2022-2023 education period. As the data collection tool, the "Educational Game Playing Skill Observation Scale" was used. The data were analyzed using the SPSS statistical software. Independent Samples T-Test and One-Way ANOVA were utilized for the analyses while the LSD test, a Post-Hoc test, was employed to identify which group contributed to significant differences. It was discovered that preschool teachers' educational game-playing skill levels ( $\bar{x}=100.47$ ) were at satisfactory levels. In terms of the subscales of the observation scale, preschool teachers demonstrated very good skills in the preparation ( $\bar{x}=3.60$ ) and game phases ( $\bar{x}=3.41$ ), while their skills in the evaluation phase ( $\bar{x}=2.66$ ) were sufficient. There was no significant difference in the game skill levels of preschool teachers based on gender and educational level ( $p>0.05$ ). The significant difference in skill levels among preschool teachers in the preparation phase, game phase, subscales, and evaluation phase subscale arises from participants with service periods between 21-31 years ( $p<0.05$ ). In the study, the educational game-playing skills of preschool teachers are considered sufficient. The "preparation phase" and "game phase" exhibit very good levels of skill, while the "evaluation phase" is at satisfactory levels.

## Keywords

Skill, Educational Game Play, Observation Scale, Preschool Teacher

## INTRODUCTION

Preschool education covers the period from the moment an individual is born until basic education. It is a period in which most of the cognitive, physical, social, emotional, linguistic, and psychomotor development is completed. This period is defined as the education process provided in institutions together with parents. When the developmental dimensions in question (cognitive, emotional, social, etc.) are examined, the first stage of systematic education is the preschool period (Gemici, 2023).

The preschool period is the period in childhood when learning is at its peak. All the acquisitions and habits acquired by the child in this

period are maintained similarly in the future life of the child. Moreover, it can be stated that games are one of the most effective techniques for children to communicate with their peers and spend quality time during this period.

Games are activities that are as old as the history of humankind and have a deep-rooted history. Especially in the preschool period, many skills, behaviors, and knowledge taught to individuals are gained through games (Koçyiğit et al. 2007). Game-based learning has become an effective teaching technique to facilitate the learning of preschool students. Games in the educational environment have two goals: being fun and being educational. Therefore, it is hoped that games in educational institutions have

Received: 13 September 2023 ; Accepted: .... October 2023; Online Published: 25 October 2023

<sup>1</sup>ORCID: 0000-0001-9454-0582 , <sup>2</sup>ORCID: 0009-0000-8440-3242

**How to cite this article:** Akçınar, S. And Arak, R. (2023). Investigation of Educational Game-Playing Skills of Preschool Teachers. *Int J Disabil Sports Health Sci*;2023;Special Issue 1:442-453. <https://doi.org/10.33438/ijdsHS.1359756>

developmentally appropriate content, are socially enriched, and provide a balance between the game world and the real world. Educational games have an important position among teaching techniques. Educational games constitute a sound technique for collaborative learning environments when they are planned correctly. Games provide an opportunity for learners to learn by practicing and to have experience. In general, they also ensure the participation of students who choose to remain silent or inactive in the classroom. They develop decision-making and problem-solving-oriented approach skills while motivating and encouraging students, as well as arousing curiosity and supporting the learning of many skills such as critical thinking, reading, discussion, and acting in coordination. Furthermore, games are effective techniques that can be applied to support the efforts of children who are not successful while motivating them (Demirtaş et al. 2021).

Educational games affect many developmental dimensions in terms of the development of young learners. Among the experimental studies in the literature, there are studies on the positive effects of educational games on different developmental dimensions such as cognitive, social, motor skills, physical development and the development in classes that include students with disabilities (Münüroğlu 1995; Akar 2013; Koç 2017; Özdenk 2007; Üstündağ 2017; Yılmaz 2017; Kekeç 2013; Gülsoy 2013; Alp 2015; Bektaş 2015).

Educational games shape the character, attitude, value judgments, and beliefs of individuals in adulthood based on the behaviors learned in childhood (Karaömerlioğlu, 2010; Tanrıverdi, 2012). As can be understood from this statement, educational games have the power and quality to affect the behaviors of individuals. Therefore, educational games are highly effective in learning behaviors and permanent learning (Ajibade et al. 2008; Yıldız et al. 2017). The permanence of the acquired knowledge is largely because the learning process is quite enjoyable as well as learning by doing and living (Michael and Chan, 2006). The learning-by-doing process enables abstract concepts to be rendered concrete and these concretized concepts to be shaped by experience. The concepts shaped by experience take place in the cognitive schema of children or students more than other learning techniques and gain permanence (Baki, 1999). The quality of

abstract thinking of a kindergarten student or a person who is still in childhood has not developed (Bilici, 2014). The most effective way to transfer abstract concepts to the student who lacks this ability and to help them make sense of these concepts is to facilitate the learning process with educational games (Çalışkan and Karadağ, 2005).

When the Council of Higher Education (CoHE) preschool teaching undergraduate program is examined, it is seen that the course "Game Development and Education in Early Childhood" is provided in the 4<sup>th</sup> semester (2<sup>nd</sup> grade) with 3 theoretical courses and that there is no course called "game" or "educational game" in the program (CoHE, 2023). When the preschool education program of the Ministry of National Education (MoNE) is examined, it is emphasized that the lessons should be game-based. Furthermore, within the framework of the program, there is a "game and movement activity" hour in preschool education institutions. However, there is no course called "educational game" (MoNE, 2023). Additionally, when the central and local in-service training of MoNE were examined, no in-service training activities under the name of "game" or "educational game" were found (MoNE, 2023).

Although educational games are the subject of countless studies, the fact that they are included as a course in education plans reveals the importance of educational games in terms of education. Over time, the educational game, whose importance in educational activities has become more apparent, has become even more imperative to be implemented by individuals who can implement educational games (Akçınar, 2018). In this context, preschool teachers can play educational games.

Competent education and training institutions are needed for a competent human profile. One of the remarkable elements that determine the quality of education is teachers. The behaviors expected from teachers who will fulfill their duties in educational environments should be acquired by prospective teachers before they start their duties. For this purpose, it is important to determine the program criteria for the objectives and the desired level of competence in teacher education programs. Program criteria in teacher education programs include teacher abilities such as being conscious and behaving appropriately in all conditions that prospective teachers may

encounter during their teaching duties, working with children with different personal qualities and backgrounds in educational environments, and being more active in the classroom environment (Adıgüzel, 2008).

In this kind of process, it will be beneficial for teachers to build the competencies and skills they will learn for practice more effectively. With the development of education, a person's competence largely reflects the competence of the teacher. Learners' competencies are the same as teacher competencies. The competence of the teacher plays an important role in the functioning and success of the education system (Aydın, 2008).

Considering the master's and doctoral studies on preschool games conducted in Turkey between 1986 and 2013, 45% of these studies consisted of experimental research. When these studies were analyzed, it was determined that they mainly focused on the effects of educational games on development (Kaytez & Durualp, 2014). Additionally, similar studies continued in the following years. However, research on whether the individuals who implement educational games have the ability, experience, and expertise to implement these games is very rare. Among these studies, the "playfulness scale" (Hazar, 2014), "children's perceptions of games scale" (Kaşkaya et al. 2017), and "preschool teachers' self-efficacy scale for teaching games" (Kadim, 2012) were used to test the importance of games. Research in the literature in the field of preschool education has remained in the mental or emotional dimension. Within this framework, there are no studies that can test the expertise and experience of individuals who implement educational games based on practice and test whether they can implement educational games.

The achievement of the goals of preschool education, as desired at all levels of education, is directly linked to the competence of teachers. The results of many studies on the competence of teachers identify the link between the competence of teachers and the achievement of students (Biçer, 2021). The ability, practice, and experience of preschool teachers are very important in determining the extent to which children learn and how children grow in the educational institution (Chakravarthi, 2009).

Since preschool children are not yet in the abstract thinking period, their education and

training are generally based on games. Moreover, the fact that educational games benefit the child's physical, cognitive, social, emotional, and linguistic development dimensions makes the educational game course essential for children. For the educational game course to achieve its purpose, there is a need for preschool teachers who have been scientifically trained, adopted, and employed correctly.

In this study, the levels of educational game-playing skills of preschool teachers who spend their working life intertwined with games are investigated. Accordingly, the current study aims to reach the following aims and answers by applying the Educational Game Playing Skill Observation Scale to preschool teachers.

- What is the level of educational game-playing skills of preschool teachers?
- Is there a difference between preschool teachers' skill levels of educational game playing in terms of gender?
- Is there a difference between preschool teachers' skill levels of educational game playing in terms of years of service?
- Is there a difference between preschool teachers' skill levels of educational game playing in terms of their educational level?

In terms of the significance of the study, the place of educational games in education has reached almost indisputable points. After the importance of the game, the importance of the player is a candidate to be a new topic in the literature. As in every level of education, getting efficiency from educational games, which is one of the effective education and training tools in preschool, largely depends on the game-playing skills of the preschool teacher. Playing qualified educational games by qualified people will provide the opportunity to complete the trivet for an efficient and effective education (Akçınar, 2018). To make strong use of games in the game environment, the theoretical and practical details specific to the play of games should be known to the teacher (Akçınar, 2018).

In this study, the skill levels of preschool teachers who are involved in games in their professional lives are examined. When the literature was examined, there were no studies that measured the educational game skill levels of preschool teachers. Accordingly, the current study is thought to be a significant study both in terms of providing feedback to preschool teachers who

continue their professional lives and providing data to faculty members in preschool teaching departments of universities, CoHE and MoNE.

The study assumes that the "Educational Game Playing Skill Observation Scale" measures the educational game-playing skill levels of preschool teachers. On the other hand, the study was limited to preschool teachers working in official kindergartens and nursery schools in Diyarbakır province in the 2022-2023 academic year.

Certain definitions related to the subject of the study were presented as the following:

**Preschool education:** Preschool education is the education process provided in families and institutions where the individual's developmental dimensions and self-care skills are supported, rich environmental opportunities conducive to his/her interest and development are offered, his/her character and personality are shaped, and he/she is prepared for primary school in line with the culture of the society (Hayiroğlu, 2017).

**Preschool teacher:** Preschool teachers are individuals who provide the necessary physical, cognitive, social, and emotional education to students in the 0-6 age group (Yılmaz, 2015).

**Games:** Games are a part of real life and an effective learning process, which is the basis of physical, mental, language, social, and emotional development. Games are played with or without a goal, with or without rules; however, the individuals are voluntarily and willingly involved under all circumstances (Bekmezci, 2015).

**Educational games:** Educational games are purposeful activities that make the learning process fun and benefit the physical, linguistic, cognitive, social, and emotional skills of individuals (Erol et al. 2021).

**Skill:** Skills are the abilities to apply acquired knowledge, solve problems, and complete tasks (Güneş, 2012).

## MATERIALS AND METHODS

### *Research Design*

In this study, the research method was designed in two stages.

In the first stage, the survey model, one of the quantitative research methods, was used to determine the skill levels of preschool teachers in playing educational games. The survey design provides a quantitative or numerical description of

attitudes, tendencies, or opinions in the population through research conducted on a sample determined from a population (Creswell, 2017).

In the second stage, a causal comparison was used to determine whether there was a difference according to the educational level, years of service, and gender of preschool teachers. Causal comparison studies are investigations carried out to examine the level or existence of connections between two or more variables, reach clues related to cause and effect, and comprehend the phenomena examined more accurately (Büyükoztürk et al. 2015). Ethical Approval was received by İnönü University Scientific Research and Ethics Committee on 09.06.2022 with decision number 2022/12-9.

### *Population and Sample*

#### *Research Population*

The study population consisted of 1319 female and 329 male preschool teachers, totaling 1648 preschool teachers (1319 female and 329 male) working in official kindergartens and preschool education institutions affiliated to Diyarbakır Provincial Directorate of National Education in the 2022-2023 education period.

#### *Sample of the Study*

In the power analysis performed while creating the sample, when the effect size was equal to 0.5, alpha to 0.05, and beta (power) to 0.95, it was concluded that the sample size should consist of at least 47 preschool teachers. Considering the above criteria, the sample of the study consists of 61 preschool teachers who work in the official kindergartens and preschool education institutions affiliated with the Diyarbakır Provincial Directorate of National Education and who voluntarily participated in the study.

#### *Demographic Information*

The demographic information of the 61 preschool teachers constituting the sample of the study is presented below.

Percentage distributions and frequency distributions of preschool teachers who participated in the study according to demographic variables are presented above. In this context, 75.4% (n=46) of the preschool teachers in the study were female and 24.6% (n=15) were male. In terms of years of service, 62.3% (n=38) of the participant preschool teachers had 1-10 years of service, 29.5% (n=18) had 11-20 years of service, and 8.2% (n=5) had 21-31 years of service. In terms of the educational level of the participant



preschool teachers, 90.2% (n=55) of them completed undergraduate degrees, and 9.8% (n=6) completed master's degrees.

**Table 1.** Distribution of Preschool Teachers' Demographic Information

Variable	n	%	
Gender	Male	15	24.6
	Female	46	75.4
	<b>Total</b>	<b>61</b>	<b>100</b>
Years of Experience	1-10 year	38	62.3
	11-20 year	18	29.5
	21-31 year	5	8.2
	<b>Total</b>	<b>61</b>	<b>100</b>
Educational Level	Undergraduate	55	90.2
	Master Degree	6	9.8
	<b>Total</b>	<b>61</b>	<b>100</b>

### Data Collection Tool

In the collection of the data for this study, the "Educational Game Playing Skill Observation Scale" designed by Akçınar 2018 in her doctoral thesis was used (Akçınar, 2018).

### Educational Game Play Skill Observation Scale

The educational game-playing skill observation scale used in this study consists of three subscales: preparation, game, and evaluation. The preparation stage consists of 5 items, the game stage consists of 21 items and the evaluation stage consists of 4 items, totaling 30 items. This scale evaluates the skill level of the educational game player as very appropriate (4), sufficiently appropriate (3), less appropriate (2), and not appropriate at all (1). When the scale is evaluated according to its subscales, 1.00-1.75 points is a very poor level, 1.76-2.50 points is an inadequate level, 2.51-3.25 points is an adequate level, and 3.26-4.00 points is a very good level. When the observation scale is evaluated as a whole, a score between 30-120 is obtained. As the score increases, the skill level of playing games also increases. A score range of 30-45 means very poor level, a score range of 46-75 means inadequate level, a score range of 76-105 means adequate level, score range of 106-120 means very good level. The Cronbach Alpha value for the scale is 0.94, indicating high internal consistency.

### Data Analysis

Descriptive statistics were used to analyze the percentages and frequencies of the data. The results obtained as a result of the statistical analyses are presented in the "demographic

information" table. Before analyzing the data, skewness, and kurtosis values were reviewed, and a normality test was performed. According to Table 2, since the skewness and kurtosis values were between +1.5 and -1.5, the data were found to have a normal distribution (Tabachnick & Fidell, 2007). For these normally distributed data, the One-Way ANOVA test was used for three or more comparisons, and the Independent Samples T-Test was used for pairwise comparisons. Apart from this, the LSD test, one of the Post-Hoc tests, was used to determine which group the difference originated from among the significant results.

## RESULTS

**Table 2.** Educational Game Play Skill Levels of Preschool Teachers

Subscale	n	$\bar{x}$	sd	Skewness	Kurtosis
<b>1. Preparation Phase</b>	61	3.60	0.30	-1.379	0.999
<b>2. Game Phase</b>	61	3.41	0.31	-0.439	-1.174
<b>2.1. Introduction to Educational Game</b>	61	3.13	0.29	0.034	-1.330
<b>2.2. Educational Game Play</b>	61	3.55	0.35	-0.597	-1.063
<b>3. Evaluation Phase</b>	61	2.66	0.26	0.034	-0.052
<b>Total</b>	61	100.47	8.30	-0.498	-0.897

Table 2 shows the skill levels of the teachers in playing educational games. The preparation stage has a mean of  $\bar{x} = 3.60$  at a very good skill level. The game phase has a mean of  $\bar{x} = 3.41$  at a very good skill level. Again, the introduction to the game, one of the subscales of the game phase, has a mean of  $\bar{x} = 3.13$  at the adequate skill level. Another subscale of the game stage, game playing subscale has a mean of  $\bar{x} = 3.55$  at a very good skill level. The evaluation phase has a mean score of  $\bar{x} = 2.66$  at the adequate skill level. In total, game-playing skill has a mean score of  $\bar{x} = 100.47$  at the adequate skill level.

Table 3 shows teachers' skill levels in educational game playing in terms of the gender variable. In the preparation stage, the male gender variable had a score of  $\bar{x} = 3.44$  and no significant difference was found ( $p > 0.05$ ). The preparation stage female gender variable was  $\bar{x} = 3.66$  and no significant difference was found ( $p > 0.05$ ).

In the game phase, the male gender variable had a mean of  $\bar{x} = 3.34$  and no significant difference was found ( $p > 0.05$ ). In the game phase subscale, the female gender variable was  $\bar{x} = 3.44$  and no significant difference was found ( $p > 0.05$ ). In the subscales of the game stage, in terms of the game introduction, the male gender variable had a mean of  $\bar{x} = 3.06$  and the female gender variable had a mean of  $\bar{x} = 3.15$  and no significant difference was found ( $p > 0.05$ ). In the game stage,

in the subscale of starting the game, the male gender variable was  $\bar{x} = 3.48$ , the female gender variable was  $\bar{x} = 3.58$  and no significant difference was found ( $p > 0.05$ ). In the evaluation phase, the male gender variable was  $\bar{x} = 2.68$ , the female gender variable was  $\bar{x} = 2.66$  and no significant difference was found ( $p > 0.05$ ). In terms of the game-playing skill, the male gender variable was  $\bar{x} = 98.13$ , the female gender variable was  $\bar{x} = 101.23$ , and no significant difference was found ( $p > 0.05$ ).

**Table 3.** T-Test Results of Preschool Teachers' Educational Game Playing Skill Levels According to Gender

Subscale	Gender	n	$\bar{x}$	sd	t	p
1. Preparation Phase	Male	15	3.44	0.40	-2.016	0.059
	Female	46	3.66	0.24		
2. Game Phase	Male	15	3.34	0.32	-1.057	0.295
	Female	46	3.44	0.30		
2.1. Introduction to Educational Game	Male	15	3.06	0.32	-0.958	0.342
	Female	46	3.15	0.29		
2.2. Educational Game Play	Male	15	3.48	0.35	-1.003	0.320
	Female	46	3.58	0.34		
3. Evaluation Phase	Male	15	2.68	0.30	0.252	0.802
	Female	46	2.66	0.25		
Total	Male	15	98.13	9.30	-1.264	0.211
	Female	46	101.23	7.91		

**Table 4.** One-Way ANOVA Results of Educational Game Playing Skill Levels of Preschool Teachers According to Years of Service

Subscale	Years of Service	n	$\bar{x}$	sd	F	p	d	LSD
1. Preparation Phase	1-10 years (a)	38	3.52	0.34	4.822	0.012	0.14	c>a c>b
	11-20 years (b)	18	3.71	0.15				
	21-31 years (c)	5	3.88	0.10				
	<b>Total</b>	61	3.60	0.30				
2. Game Phase	1-10 years (a)	38	3.35	0.30	3.698	0.031	0.11	c>a
	11-20 years (b)	18	3.45	0.31				
	21-31 years (c)	5	3.73	0.07				
	<b>Total</b>	61	3.41	0.31				
2.1. Introduction to Educational Game	1-10 years (a)	38	3.07	0.29	3.252	0.046	0.10	c>a
	11-20 years (b)	18	3.18	0.30				
	21-31 years (c)	5	3.40	0.15				
	<b>Total</b>	61	3.13	0.29				
2.2. Educational Game Play	1-10 years (a)	38	3.50	0.34	3.205	0.048	0.09	c>a
	11-20 years (b)	18	3.59	0.34				
	21-31 years (c)	5	3.90	0.08				
	<b>Total</b>	61	3.55	0.35				
3. Evaluation Phase	1-10 years (a)	38	2.61	0.23	6.786	0.002	0.18	c>a c>b
	11-20 years (b)	18	2.66	0.25				
	21-31 years (c)	5	3.05	0.27				
	<b>Total</b>	61	2.66	0.26				
Total	1-10 years (a)	38	98.60	8.06	5.077	0.009	0.14	c>a c>b
	11-20 years (b)	18	101.77	7.98				
	21-31 years (c)	5	110.00	2.91				
	<b>Total</b>	61	100.47	8.30				

Table 4 shows teachers' skill levels in educational game playing in terms of years of service. In terms of the variable of years of service in the preparation stage, teachers with 1-10 years of service had a mean of  $\bar{x}=3.52$ , teachers with 11-20 years of service had a mean of  $\bar{x}=3.71$ , teachers with 21-31 years of service had a mean of  $\bar{x}=3.88$  and a significant difference was observed ( $p<0.05$ ; Table 4). In terms of the years of service variable for the game phase, the scores were  $\bar{x}=3.35$  with 1-10 years of service,  $\bar{x}=3.45$  with 11-20 years of service,  $\bar{x}=3.45$  with 21-31 years of service, and  $\bar{x}=3.73$  with a significant difference. In the game phase, in terms of the game introduction subscale, the scores were  $\bar{x}=3.07$  with 1-10 years of service,  $\bar{x}=3.18$  with 11-20 years of service,  $\bar{x}=3.18$  with 21-31 years of service and  $\bar{x}=3.40$  with a significant difference ( $p<0.05$ ; Table 4). In the subscale of the game stage, in terms of the years of service variable in the subscale of game implementation, those with 1-10 years of service have a mean of  $\bar{x}=3.50$ , those with 11-20 years of service have a mean of  $\bar{x}=3.59$ , and those with 21-31 years of service have a mean of  $\bar{x}=3.90$  and a

significant difference is observed ( $p<0.05$ ; Table 4). In terms of the variable of years of service for the evaluation phase, the mean scores were  $\bar{x}=2.61$  for those with 1-10 years of service,  $\bar{x}=2.66$  for those with 11-20 years of service, and  $\bar{x}=3.05$  for those with 21-31 years of service, and there is a significant difference ( $p<0.05$ ; Table 4). In terms of the years of service variable for the skill of playing games, the scores were  $\bar{x}=98.60$  with 1-10 years of service,  $\bar{x}=101.77$  with 11-20 years of service,  $\bar{x}=110$  with 21-31 years of service and there is significant difference ( $p<0.05$ ; Table 4)

The significant difference in the preparation phase, the game phase and its subscales, and the evaluation phase is due to the participants with 21-31 years of service. While the significant difference in the preparation phase ( $d=0.14$ ) and evaluation ( $d=0.18$ ) phases has a large effect size, the significant difference in the game phase ( $d=0.11$ ) has a medium effect size, and the significant difference in its subscales, introduction to the educational game ( $d=0.10$ ) and educational game ( $d=0.09$ ) have a medium effect size. In the total score, it is seen that it has a large effect size.

**Table 5.** T-Test Results of Educational Game Playing Skill Levels of Preschool Teachers According to Educational Level

Subscale	Educational Level	n	$\bar{x}$	sd	t	P
<b>1. Preparation Phase</b>	Undergraduate	55	3.62	0.29	1.201	0.234
	Master Degree	6	3.46	0.39		
<b>2. Game Phase</b>	Undergraduate	55	3.42	0.30	0.687	0.495
	Master Degree	6	3.33	0.36		
<b>2.1. Introduction to Educational Game</b>	Undergraduate	55	3.12	0.29	0.666	0.921
	Master Degree	6	3.14	0.36		
<b>2.2. Educational Game Play</b>	Undergraduate	55	3.57	0.34	0.907	0.338
	Master Degree	6	3.42	0.37		
<b>3. Evaluation Phase</b>	Undergraduate	55	2.67	0.28	0.134	0.683
	Master Degree	6	2.62	0.13		
<b>Total</b>	Undergraduate	55	100.76	8.21	0.818	0.417
	Master Degree	6	97.83	9.53		

Table 5 shows the skill levels of teachers' educational game-playing skills in terms of the educational level variable. In terms of the preparation stage educational level variable, those with undergraduate degrees had a mean of  $\bar{x}=3.62$ , master's degree graduates had a mean of  $\bar{x}=3.46$  and no significant difference was found ( $p>0.05$ ). In terms of the educational level variable, those with undergraduate degrees had a mean of  $\bar{x}=3.42$ , master's degree graduates had a mean of  $\bar{x}=3.33$

and no significant difference was found ( $p>0.05$ ). In the game phase, in terms of the game introduction subscale, those with undergraduate degrees had a mean of  $\bar{x}=3.12$ , master's degree graduates had a mean of  $\bar{x}=3.14$  and no significant difference was found ( $p>0.05$ ). In the game stage, in the subscale of game implementation, those with undergraduate degrees had a mean of  $\bar{x}=3.57$ , master's degree graduates had a mean of  $\bar{x}=3.42$  and no significant difference was found ( $p>0.05$ ).

In terms of the educational level variable, those with undergraduate degrees had a mean of  $\bar{x}=2.67$ , master's degree graduates had a mean of  $\bar{x}=2.62$  and no difference was found ( $p>0.05$ ). In terms of the educational level variable, those with undergraduate degrees had a mean of  $\bar{x}=100.76$ , master's degree graduates had a mean of  $\bar{x}=97.83$  and no difference was found ( $p>0.05$ ).

## DISCUSSION

In this study, the "Educational Play Skill Observation Scale" was applied to determine the educational game-playing skill levels of preschool teachers. To determine the educational game-playing skill levels of the teachers, the educational game-playing skill score was analyzed in terms of educational level, years of service, and gender, and certain comments were presented.

The skill level of preschool teachers in playing educational games was found to be at the level of adequate skill. In the undergraduate program of preschool teacher training departments of universities, the game course is given in the 4th semester (2nd grade) with 3 theoretical courses. In the 7th semester (4th grade) of their education, teaching practice is given as 1, 6 hours, and in the 8th semester (4th grade), teaching practice is given as 2, 6 hours. In addition, elective games or educational game courses may be offered, varying from university to university (CoHE, 2023). When MoNE's preschool education program is examined, the courses must be game-based (MoNE, 2023). Accordingly, it is thought to have a positive effect on the result both because they take a game course and a teaching practice course at university and because most of their courses are game-based in their professional lives. The game-based progress of preschool education is similar to the management and referral of educational games.

The skill level of preschool teachers in playing educational games was seen at a very good skill level at the "preparation stage". Preschool teachers teach their lessons following the daily plan within the scope of the annual plan. Accordingly, it can be said that the preparation of the daily plan, in which different preliminary preparations are essential for all lessons, through preschool teachers has a positive effect on this issue. Before the daily lesson plans are put into practice, preliminary preparation in the field is necessary. This structure of the game and

movement activity hour is parallel to the content of the preparation phase of the educational game.

The skill level of preschool teachers in educational game-playing was seen at a very good skill level in the "game phase". Among the subscale of the game phase, "introduction to the game" was seen at a sufficient skill level, while the subscale of "playing the game" was seen at a very good skill level. The "introduction to the game" subscale mainly consists of criteria specific to the explanation of the educational game, introduction of the game-playing field, and safety. Accordingly, it is thought that the reason why the "introduction to the game" subscale is seen at a sufficient skill level is that preschool teachers do not attach enough importance to this aspect and focus more on the "playing the game" aspect.

The skill level of the evaluation phase was at an adequate skill level. Although the skill levels of the preparation phase and the game phase were found to be at very good skill levels, the reason why the evaluation phase was found to be at the adequate skill level is thought to be that preschool teachers did not take the educational game course in their undergraduate education and were not aware of the scope of the course. Moreover, the fact that preschool teachers see games as enjoyment, warming up, and leisure time evaluation can be expressed as the fact that they may not have looked at the game to provide information, evaluation, and feedback at the end of the game. Accordingly, it can be said that this perspective will cause the evaluation phase to be insufficient.

No significant difference was found between the skill levels of preschool teachers' educational game in terms of the gender variable. No significant difference was found in terms of the gender variable in preparation, game, and evaluation extensions of educational game-playing skills. Gömleksiz and Serhatlıoğlu examined the views of preschool teachers on their self-efficacy beliefs and found no significant difference between gender and self-efficacy levels (Gömleksiz, 2013). Akçınar, in her study, did not find a significant difference between physical education teachers' skill levels of playing educational games in terms of gender in parallel with our study (Akçınar, 2018). Yılmaz, Kırımoğlu, and Yamanyurt examined the self-efficacy levels of physical education and sports teachers in educational game-playing in their study



and concluded that there was no significant relationship between gender variable and game-playing self-efficacy (Yılmaz et al. 2019). Genç did not find a statistically significant difference between gender and subscales in the study examining the self-efficacy of physical education and sports teaching and coaching department students to play educational games (Genç, 2021). Kaymaz, the study examining the self-efficacy of physical education teachers in educational game playing and their professional satisfaction, did not find a significant difference in terms of planning, implementation, and evaluation, which are subscales of educational game playing self-efficacy according to gender (Kaymaz, 2022). The results of these studies support our study.

In this context, it can be concluded that the reason why there is no significant difference between male and female teachers is that they have taken similar courses in their education life and that they are aware of the seriousness of the game as teachers.

A significant difference was found in terms of years of professional service in the preparation phase, game phase and its subscales, and evaluation phase of educational game-playing skill levels of preschool teachers. As the years of professional service increased, the level of educational game-playing skills also increased. Since preschool teachers' lessons are game-based, as the years of service in the profession increase, the experience increases in the same direction. This naturally led to an adequate level of skill in playing educational games. Akmeşe and Kayhan, in the study examining the self-efficacy levels of special education teachers regarding game teaching, observed that a significant difference was found between years of service and game self-efficacy levels (Akmeşe & Kayhan, 2017). Akçınar, in her study, found an increase in the skill level of physical education teachers in playing educational games as the years of service increased in the skill level of playing educational games (Akçınar, 2018). In a study conducted by Turhan, it was determined that teachers with 6-10 years of professional experience scored higher than teachers with 1-5 years of professional experience in their self-efficacy perceptions of educational game playing according to the variable of professional years (Turhan, 2021). The results of these studies support our study. In this context, we can say that as the skills are experienced, we

conclude that permanence and competence increase in the same direction.

No significant difference was found between the educational game-playing skill levels of preschool teachers in terms of their education level. In another study, Tortop did not find any difference in the formation levels of classroom teachers in terms of their education level in terms of educational game teaching and practice (Tortop, 2005). In a study with preschool teachers, Turak and Demir did not find a significant difference between the education levels of preschool teachers and their game-playing and teaching self-efficacy (Turak, 2019). In a study conducted by Gemici with preschool teachers, no significant difference was found between the game planning, implementation, and evaluation extensions of teachers' game-playing self-efficacy in terms of their educational level (Gemici, 2023). These studies support our study. Within this scope, it is thought that the reasons why the educational level does not change the results are the limited number of teachers who have a master's degree or are currently doing a master's degree, the fact that educational sciences have a wide range of fields of study, and the fact that the fields of study of preschool teachers who have a master's degree may be different.

The skill level of preschool teachers whose educational game-playing skills were measured with the educational game-playing scale was found to be adequate. "Preparation Phase" was seen at a very good skill level and "Game Phase" was seen at a very good skill level. "Introduction to the Game" subscales of the game phase were seen at an adequate skill level, and the "Game Play" subscale of the game phase was seen at a very good skill level. "Evaluation Phase" was seen at a sufficient skill level. There was no significant difference between the educational game-playing skill levels of preschool teachers in terms of gender. In the study, a significant difference was found between the educational game-playing skill levels of preschool teachers according to their years of service variable. At the end of the study, no significant difference was found between the educational game-playing skill levels of preschool teachers in terms of their educational level variable.

### **Suggestions**

As a result of our study, we propose the following recommendations:

Preschool teachers' skills in educational games were found to be at the level of adequate skill. Although the "preparation stage" was found to be at a very good skill level and the "game stage" was found to be at a very good skill level, the fact that the "evaluation stage" was found to be adequate and the total scale score remained at the adequate skill level can be considered as an issue that needs to be studied. In this context, it can be considered that the Council of Higher Education should make the "educational game" course compulsory in the preschool teaching undergraduate program. In addition, care should be taken in determining the instructors who will teach the course. More duties should be given to qualified individuals for the mentioned field.

It is thought that the purpose of educational games would be better served if the "game and movement activity" hour, which is compulsory in preschool education institutions, is separated into "free game" and "educational game" hours by the Ministry of National Education.

In the study, it was seen that the "evaluation phase" remained at the adequate skill level and was close to the border of the less adequate skill level. Preschool teachers should be given the perspective to use the educational game as a teaching technique in the main line of the lesson in addition to the goal of giving pleasure to the students, focusing on the lesson, and calming them down. Utilizing educational games as a technique can raise the awareness of preschool teachers by taking the evaluation phase seriously.

Preschool teachers' perceptions of making the distinction between games and educational games can be determined. In this case, their perceptions of educational games may affect the preparation, implementation, and evaluation processes, which are the stages of educational games.

Suggestions for those who will carry out the same study are listed below:

This study was limited to Diyarbakır province and its districts. It may be advisable to study and research with a more comprehensive sample group. When similar studies are conducted regionally or nationwide, regional comparisons of the study can also be made and the literature can benefit more.

During the implementation of the educational game-playing skill observation scale in the research process, it was determined that some

teachers did not want to participate and some teachers were cautious about participating in the study. The reason for this is the perception of grading them or questioning their teaching. Explaining this situation to them and preventing misunderstandings will make it easier for the people who will conduct the study to manage the process.

#### Conflict of interest

There is no conflict of interest for the authors in this study. In addition, no financial support was received from any institution or organisation for the study.

#### Ethics Committee

Ethical Approval was received by İnönü University Scientific Research and Ethics Committee on 09.06.2022 with decision number 2022/12-9.

#### Author Contributions

Study Design, SA; Data Collection, SA and Statistical Analysis, RA; Data Interpretation, SA and R; MA anuscrypt Preparation, SA; Literature Search, SA and RA. All authors have read and agreed to the published version of the manuscript.

## REFERENCES

- Adıgüzel, A. (2008). *Realization level of teacher education program standards in education faculties* [Doctoral thesis]. Anadolu University, Türkiye.
- Ajibade, Y., Ndububa, K. (2008). Effects of word games, culturally relevant songs, and stories on students' motivation in a Nigerian English language class. *TESL Canada Journal*, 25(2):27-48. <https://doi.org/10.18806/tesl.v26i1.128>
- Akar, F. (2013). *The effect of skill and game-based training on the physical performance and technical skill development of adolescent male soccer players* [Master thesis]. Aksaray University, Türkiye.
- Akçınar, S. (2018). *Investigation of physical education teachers' educational game play skills* [Doctoral thesis]. İnönü University, Türkiye.
- Akmeşe, PP., Kayhan, N. (2017). Investigation of special education teachers' self-efficacy levels related to play teaching. *Ankara University Faculty of Educational Sciences Journal of Special Education*, 18: 1-26. <https://doi.org/10.37233/TRSPED.2019.0103>

- Alp, H., (2015). Çamlıyer, H. The effect of integrated extracurricular movement education and game activities on adaptive behaviors of children with social adjustment disorder. *Academic Overview International Refereed Journal of Social Sciences*, (49): 339-349. <https://dergipark.org.tr/en/pub/abuhsbd/issue/32942/366022>
- Aydın, R., Şahin, H., Topal, T. (2008). The search for quality in primary education classroom teacher training. *Turkish Journal of Social Research*, 2: 119-142.
- Baki, A. (1999). *Evaluation of algebra-related operations misconceptions*, pp. 46-55, III. Science Education Symposium. Trabzon, Türkiye.
- Bekmezci, H., Özkan, H. (2015). The effect of games and toys on child health. *Izmir Dr. Behçet Uz Journal of Pediatrics*, 5(2): 81-87. doi:10.5222/buchd.2015.081
- Beştaş, D. (2015). *Investigation of the effect of active game activities on social behaviors of 7-8-9 year old children* [Master thesis]. Marmara University, Türkiye.
- Biçer, D. (2021). *Determination of competencies of preschool teacher education undergraduate program and a program evaluation based on competencies* [Doctoral thesis]. Ankara University, Türkiye.
- Bilici, AB. (2014) 0-6 age group children's religious development process and religious education [Doctoral thesis]. Dokuz Eylül University, Türkiye.
- Büyüköztürk, Ş., Çakmak, E., Akgün, ÖE., Karadeniz, Ş., Demirel, F. (2015). *Scientific Research Methods*, Pegem A Publishing.
- Chakravarthi, S. (2009). Preschool teachers' beliefs and practices of outdoor games and outdoor environments [Doctoral thesis]. The University of North Carolina, ABD.
- Council of Higher Education (CoHE) 2023 New Teacher Training Program. <https://www.yok.gov.tr/kurumsal/idari-birimler/egitim-ogretim-dairesi/yeni-ogretmen-yetistirme-lisans-programlari> 12.04.2023
- Çalışkan, N., Karadağ, E. (2005). Body language in drama. *Journal of Ahi Evran University Kırşehir Faculty of Education*, 6(2): 103-113. <https://dergipark.org.tr/en/pub/kefad/issue/59538/856367>
- Demirtaş, Z., Çalık, M., Sarışık, S., Sarışık, S. (2021). Teachers' opinions on the use of educational games technique in the learning-teaching process. *Journal of Recep Tayyip Erdoğan University Faculty of Education*, 1(1): 16-28.
- Erol, S., Erdem, İ., Akkaya, A. (2021). The effect of using educational games on academic achievement, attitude and retention in teaching Turkish as a foreign language. *Bayburt Education Faculty Journal*, 16(Özel Sayı):166-183. <https://doi.org/10.35675/befdergi.850249>
- Gemici, A. (2023). *Investigation of preschool teachers' self-efficacy regarding game teaching* [Master thesis]. Aksaray University, Türkiye.
- Genç, ES. (2021). *Investigation of creative personality traits and educational game playing self-efficacy of physical education and sports teaching and coaching department students* [Master thesis]. Alparslan University, Türkiye.
- Gömleksiz, MN., Serhatlıoğlu, B. (2013). Preschool teachers' views on their self-efficacy beliefs. *Electronic Turkish Studies*, 8:201-221. <http://dx.doi.org/10.7827/TurkishStudies.5336>
- Gülsoy, T. (2013). *The effect of 6<sup>th</sup> grade students' vocabulary on the development of educational games* [Master thesis]. Niğde University, Türkiye.
- Güneş, F. (2012). Skills and competencies envisaged in higher education with the Bologna process. *Journal of Higher Education and Science*, (1): 1-9. doi: 10.5961/jhes.2012.026
- Hayroğlu, B. (2017). *The effect of game method in acquiring pattern skills for children attending preschool education institution* [Master thesis]. Istanbul University, Türkiye.
- Hazar, M. (2014). University students' attitudes towards playing games involving physical activity scale playfulness scale. *Journal of Physical Education and Sport Sciences*, 8(1): 166-172. <https://dergipark.org.tr/en/pub/bsd/issue/53528/712866>
- JW, C. (2017). *Qualitative, Quantitative and Mixed Method Approaches Research Design*. Demir SB (Translator). Ankara: Eğiten Kitap, 155.
- Kadim, M. (2013). ). Investigation of preschool teachers' self-efficacy related to play activities according to the type of school they work in. *Nevşehir Hacı Bektaş Veli University SBE Journal*, 2(1): 1-21. <https://dergipark.org.tr/en/pub/nevsosbilen/issue/19734/211128>
- Karaömerlioğlu, L. (2010). *Improvisation in preschool education* [Master thesis]. Çukurova University, Türkiye.



- Kaşkaya, A., Ünlü, İ., Akar, MS., Sağrılı, ÖS. (2017). Turkish culture adaptation study of children's perceptions towards children's games scale (çoya). *The Journal of Academic Social Science Studies*, 4(57): 107-125. <http://dx.doi.org/10.9761/JASSS7060>
- Kaymaz U. (2022). *Investigation of physical education teachers' educational game play self-efficacy and professional satisfaction* [Master thesis]. Mersin University, Türkiye.
- Kaytez, N., Durualp, E. (2014). Investigation of postgraduate theses about play in preschool in Turkey. *International Journal of Turkish Educational Sciences*, 2014(2), 110-122. <https://dergipark.org.tr/en/pub/goputeb/issue/7322/95830>
- Kekeç, MA. (2013). *Investigation of the effect of regularly applied educational game program on problem solving skills in 11-12 age group children* [Master thesis]. Gazi University, Türkiye.
- Koç, MC. (2017). *The effect of educational games on the development of basic motor skills of primary school children* [Doctoral thesis]. Dumlupınar University, Türkiye.
- Koçyiğit, S., Tuğluk, M. N., Kök, M. (2007). Game as an educational activity in child development process. *Atatürk University Kazım Karabekir Education Faculty Journal*, (16): 324-342. <https://dergipark.org.tr/en/pub/ataunikkefd/issue/2777/37245>
- Michael, D., Chen, S. (2006). *Serious Games: Games that Educate, Train, and Inform*, 2<sup>nd</sup> Edition. Thomson Course Technology, 1-287.
- Ministry of National Education (MoNE) 2023 General Directorate of Basic Education Preschool Education Program. <https://www.yok.gov.tr/kurumsal/idari-birimler/egitim-ogretim-dairesi/yeni-ogretmen-yetistirme-lisans-programlari> 12.04.2023
- Ministry of National Education (MoNE) 2023 General Directorate of Personnel Training Plans. <https://personel.meb.gov.tr/www/egitim-planlari/icerik/108> 11.05.2023
- Müniroğlu, S. (1995). *A research on some factors affecting the motor development levels of four-five year old children attending kindergartens* [Doctoral thesis]. Ankara University, Türkiye.
- Özdenk, Ç. (2007). *6 age group students' psychomotor development in the provision of the place and importance of the game* [Master thesis]. Fırat University, Türkiye.
- Tabachnick, BG., Fidell, LS. (2007). *Experimental Designs Using Anova* (Vol. 724). Belmont, CA: Thomson/Brooks/Cole.
- Tanrıverdi, Ö. (2012). *The effect of education given with creative drama method on environmental awareness of preschool students* [Master thesis]. Muğla Sıtkı Koçman University, Türkiye.
- Tortop, Y. (2005). *Physical education course and educational game practices of classroom teachers* [Master thesis]. Kocatepe University, Türkiye.
- Turak, ET., Demir, MK. (2019). Evaluation of the competencies of teachers working in preschool education institutions for teaching with games. *Ihlara Journal of Educational Research*, 4: 274-287.
- Turhan, C. (2021). *Investigation of the relationship between physical education and classroom teachers' educational game play, self-efficacy and risk-taking behaviors* [Master thesis]. Alparslan University, Türkiye.
- Üstündağ, S. (2017). *The effect of educational games on the self-concept levels of inclusion students learning in secondary schools* [Master thesis]. Abant İzzet Baysal University, Türkiye.
- Yıldız, E., Şimşek, Ü., Aras, H. (2017). The effect of educational game method on students' social skills, attitudes towards school and science learning anxiety. *Necatibey Faculty of Education Electronic Journal of Science and Mathematics Education*, 11(1): 281-400. <https://doi.org/10.17522/balikesirnef.356305>
- Yılmaz, A., Kırınmoğlu, H., Yamanyurt, M. (2019). Investigation of physical education and classroom teachers' self-efficacy in playing educational games in terms of various variables. *Electronic Turkish Studies*, 14: 4131-4144. <http://dx.doi.org/10.7827/TurkishStudies>.
- Yılmaz, A. (2017). *The effect of physical education and game practices on physical fitness, educational performance and school social behaviors of children with mild mental disabilities* [Doctoral thesis]. Sakarya University, Türkiye.
- Yılmaz, N. (2022). *Investigation of preschool teachers' classroom management skills in terms of various variables*. [Master thesis]. Cumhuriyet University, Türkiye.



This work is distributed under <https://creativecommons.org/licenses/by-sa/4.0/>