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Investigation of Teachers' Self-Efficacy of Educational Game-Playing

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Abstract
Educational games are activities that enable individuals of learning age to reinforce their knowledge by repeating what they have learned in an environment where they feel comfortable. Educational games contribute to the development of the individual in many areas as well as cognitive, affective, psycho-motor and social development. In this context, it is known that teachers have an undeniable importance in transferring educational games that have a direct effect on children's development. Therefore, this research was carried out to examine teachers' educational game playing self-efficacy. The research group consisted of a total of 300 teachers, including 100 physical education teachers, 100 preschool teachers and 100 classroom teachers. "Educational Game-Playing Self-Efficacy Scale" was used as a data collection tool in the research. In the analysis of the data, arithmetic mean and standard deviation techniques from descriptive statistics were used to determine the educational game playing self-efficacy of teachers. Then, the normality test of the data was carried out by applying the Kolmogorov-Smirnov technique and the Skewness-Kurtosis coefficients. In the study, t-test was used to determine whether teachers' educational game-playing self-efficacy differed in terms of gender, and one-way analysis of variance (Anova) technique was used to determine whether it differed in terms of branch. Tukey test was used to determine the source of variance. According to the results obtained in the study, while there was no significant difference in the level of educational game-playing self-efficacy of teachers in terms of gender, there was a significant difference in terms of branch. In the examination, it was concluded that the educational game self-efficacy of physical education teachers was higher than that of preschool and classroom teachers.

Keywords: Educational Game, Self-Efficacy and Teachers

1. Introduction

While the game is used as "play" and "game" in many western languages, the word play is generally used as a verb and the word game is used as a noun in English (Biricik & Atik, 2021). Although the game is generally practiced within certain rules and shaped individually or in groups according to the living conditions of each period, it has survived to the present day as the most important activities in terms of maintaining the existence of education, creativity, imagination, imitation and communication (Ayhan & Cavus, 2014; Demir & Cicioglu, 2020). When analyzed conceptually, it is very difficult to focus on a common definition of the game (Koka, 2018). However, when looking at its general lines, it is possible to express it as activities that give pleasure,

relax, entertain and develop (Gunes, Tugrul & Ozturk, 2020). The Turkish Language Association has defined the game as "Amusement that develops talent and intelligence, has certain rules and helps to have a good time" and "All kinds of competitions based on agility, which are held to develop physical and mental abilities." The game, which allows the child's inner world experiences and feelings to be reflected outside, is the whole of activities that allow the individual to learn by trying, without help, without any help, and without discrimination of language, religion, race, and gender (Yavuzer, 2012; Yildirim, 2015).

Huizinga (2010) defines the game as “an action that feels outside the ordinary life, is free and fictional, but still has the ability to completely absorb the player, and is performed in a certain time or place in order, in accordance with certain rules.” French sociologist Roger Caillois (2001) explains the game using 6 terms: free-free, separate-independent, ambiguous, unproductive, normative and persuasive. While Salen & Zimmerman (2003) define a game as a system in which players enter into an artificial conflict defined by rules and achieve measurable results when it ends, psychologist Jesper Juul (2011) defines a game as a game in which different outcomes are given different values, players strive to influence the outcome, the outcome is He defined it as a rule-based system with a variable and measurable outcome where the outcome of the activity is optional and negotiable, to which he feels dependent. Piaget (1964), on the other hand, describes all the movements made by children who have just opened their eyes to the world as play, and defines it as the process of recognizing and exploring the child's environment. While the game is defined as the activities that individuals discover by themselves, learn by experimenting in their life and contribute to the development of the individual's abstract thinking skills, educational games are seen as the whole of activities that ensure the permanence of the information acquired by the game and reach the goals in line with the previously determined purposes (Kilic, 2020).

Avedon & Smith (1971) argue that educational games have an important place in the fact that the game has been shaped according to different conditions, has a long history and has reached the present day, with the appearance of the game from the first ages. In the activities carried out as educational games, it is seen that the child experiences different emotional states together in the game, learns to share with others and obey the determined rules, and at the same time reveals his hidden individual abilities (Basal, 2020). In addition to all these, educational games are expressed as a method that is frequently used in learning environments in order to increase the interaction of students with each other and to provide more efficient learning (MacKenzie, 2014).

Demirel (2010) explained educational games as activities that enable individuals of learning age to reinforce their knowledge by repeating what they have learned in an environment where they feel comfortable. It is the whole of planned, regular and purposeful activities created as a result of the acquisitions aimed at the individual in line with the predetermined goals (Cangir, 2008). Aksoy (2014) defined educational games as activities that can be played individually and in groups, enabling the learner to progress in an affective and cognitive sense and to transform the determined goals into behavior by considering the educational purposes. Educational games are extremely important activities in terms of helping the individual's cognitive, affective and psychomotor development as well as helping the development of behaviors such as creativity, problem-solving skills, self-confidence, self-expression, correct behavior habits, fairness, empathy and school/course belonging (Dede, 2020; Kaya, 2013; Kilic, 2020; Koc, 2020; Khudhur, 2016; Samur, 2016; Savas & Gulum, 2014).

Therefore, educational games are very important for children in terms of contributing to physical and mental development, enabling the emergence of hidden potentials, connecting them with the real world and enabling them to apply new information concretely (Biricik & Atik, 2021). It is known that learning while playing is important because of the experiences experienced through games and the reflection of these experiences in real life (Park, 2019; Yalcin, Demirdag, & Kazak, 2017). In addition, games contribute greatly to the individual's showing different developmental characteristics and learning to cooperate and starting to socialize (Biricik & Atik, 2021; Dede, 2020). The importance of games increases even more because children can think creatively, gain various skills and have a direct impact on their development areas (Karatas, 2021).

As can be seen from the explanations made, educational games are extremely important in terms of contributing to the development of cognitive, affective, physical and creativity characteristics of children, gaining an

enjoyable and effective learning skill throughout their education life, acquiring social skills, and changing wrong attitudes and behaviors (Celik & Sahin 2013; Kilic, 2020; Ozgun, Yasarturk, Ayhan & Bozkus, 2017). In this context, it is thought that teachers have an undeniable importance in transferring educational games that have a direct effect on children's development. Therefore, it is considered important to examine the competencies of teachers in this regard. For this reason, in this study, it is aimed to examine teachers' educational game playing self-efficacy.

2. Method

2.1 Research Model

The research was designed in the scanning model in order to examine the teachers' educational game playing self-efficacy. Karasar (2013) defined the scanning model as a model that aims to describe a situation that existed in the past or that is still ongoing, in terms of its existence.

2.2 Research Group

The research group consisted of a total of 300 teachers, 159 (53%) female and 141 (47%) male, working in schools in Aksaray, Turkey. When the distribution of the teachers participating in the research according to the branch was examined, it was seen that 100 (33.3%) worked as physical education teacher, 100 (33.3%) as pre-school teacher and 100 (33.3%) as classroom teacher. The distribution of teachers according to independent variables is shown in Table 1.

Table 1: Distribution of the Research Group According to Independent Variables

Gender	***f***	***%***
Female	159	53
Male	141	47
Total	**300**	**100**
Branch	***f***	***%***
Physical education teacher	100	33.3
Pre-school teacher	100	33.3
Classroom teacher	100	33.3
Total	**300**	**100**

2.3 Data Collection Tools

The personal information form developed by the researcher was used in collecting the data in order to determine the gender and branches of the teachers. In addition, "Educational Game-Playing Self-Efficacy Scale" was used as a data collection tool in the research.

2.3.1 Personal Information Form

Your gender and branch questions were asked in the personal information form, which includes the variables that are thought to affect the teachers' self-efficacy in playing educational games. In addition, the personal information form was created by the researcher in order to determine the characteristics such as gender and branch of the teachers in the research group.

2.3.2 Educational Game-Playing Self-Efficacy Scale

In the study, the Educational Playing Self-Efficacy Scale was used to determine the teachers' educational game playing self-efficacy. The scale was developed by Altinkok & Yilmaz (2018) and consists of 11 items. The scale in which I strongly disagree (1), disagree (2), undecided (3), agree (4) and strongly agree (5) is a 5-point Likert

type scale. In the study, the total Cronbach's alpha reliability coefficient for the scale was calculated as 0.86. High scores that can be obtained from the scale indicate that the person perceives herself/himself as highly competent, and low scores indicate that she/he perceives herself/himself as lowly sufficient.

2.4 Analysis of Data

First of all, the measurement tool used in the study was examined and the missing or incorrectly filled questionnaires were not included in the analysis. SPSS 21 package program was used in the analysis of the data and the significance level was accepted as 0.05. In order to test normality, Kolmogorov-Smirnov *(K-S)* test was used and Skewness-Kurtosis *(S-K)* coefficients were applied. Tabachnick & Fidell (2013) stated that if the *S-K* coefficients are between -1.5, +1.5, and George & Mallery (2010) are between -2,+2, it can be assumed that the data are normally distributed. As a result of the examinations, it was seen that the data were normally distributed ($p>0.05$), and it was determined that the *S-K* coefficients were within the specified ranges for the proficiency of playing educational games (1.113; 1.050). Arithmetic mean and standard deviation techniques from descriptive statistics were used to determine teachers' educational game playing self-efficacy. One-way analysis of variance (Anova) technique was used to determine whether teachers' educational game-playing self-efficacy differed significantly in terms of branch, and t-test was used to determine whether they differed in terms of gender. Tukey test was used to examine the source of variance.

3. Results

In this part of the study, the findings and the tables with the interpretations of these findings are included. The mean scores obtained by the teachers from the educational game-playing self-efficacy scale are shown in Table 2.

Table 2: Teachers' Educational Game-Playing Self-Efficacy Levels

		N	M	S*
Educational Game-Playing Self-Efficacy	Physical Education Teacher	100	52.09	2.609
	Pre-School Teacher	100	42.56	1.929
	Classroom Teacher	100	43.76	0.653
	Total	300	46.13	4.652

**Standard Deviation*

In Table 2, the results of the teachers' educational game playing self-efficacy level are given. Accordingly, the self-efficacy levels of physical education teachers were calculated as $M=52.09\pm2.60$, preschool teachers' $M=42.56\pm1.92$, and classroom teachers' $M=43.76\pm0.65$.

Table 3: Educational Game-Playing Self-Efficacy Levels of Teachers in Terms of Gender

E.G.P.S.E.*	Gender	N	M	S	t	sd	p
Physical Education Teacher	Female	43	52.32	2.52	0.783	98	0.436
	Male	57	51.91	2.68			
Pre-School Teacher	Female	56	42.92	1.78	2.196	98	0.302
	Male	44	42.09	2.02			
Classroom Teacher	Female	55	43.95	1.88	5.020	98	0.298
	Male	45	43.32	2.02			
General	Female	159	45.87	4.30	1.038	298	0.305
	Male	141	46.43	5.01			

**Educational Game-Playing Self-Efficacy*

In Table 3, t-test was applied to examine whether there is a significant difference in educational game playing self-efficacy levels in terms of gender variable of the teachers in the research group. In the examination, it was

determined that there was no significant difference in the educational game self-efficacy levels of the teachers in terms of gender (p>0.05).

Table 4: Educational Game-Playing Self-Efficacy Levels of Teachers in Terms of Branch

	Branch	N	M	S	F	sd	p	Tukey
E.G.P.S.E.	Physical Education Teacher	100	52.09	2.609	737.43	2 297 299	0.005	I-II I-III II-III
	Pre-School Teacher	100	42.56	1.929				
	Classroom Teacher	100	43.76	0.653				
	Total	300	46.13	4.652				

In Table 4, one-way analysis of variance (Anova) technique was applied in order to examine whether there is a significant difference in the educational game-playing self-efficacy levels of teachers in terms of branch. As a result of the examinations, it was observed that there was a significant difference in educational game playing self-efficacy levels in terms of branch (p<0.05). It was determined that physical education teachers' (M=52.09±2.60) educational game play self-efficacy levels were higher than preschool (M=42.56±1.92) and classroom teachers (M=43.76±0.65) (Table 4).

4. Discussion and Conclusion

In the study, teachers' educational game playing self-efficacy levels were examined. In addition, the educational game playing self-efficacy levels of the teachers participating in the research were discussed according to the branch.

In the study, the teachers' self-efficacy levels in playing educational games were examined in terms of gender, and it was determined that there was no significant difference between men and women (p>0.05). Polatcan (2021) reached a similar conclusion in her/his research in which she/he examined the educational game-playing skills of physical education and sports teachers and stated that there was no difference between gender and educational game-playing skills of physical education and sports teachers. Yilmaz et al. (2019) also concluded that there was no significant difference in terms of gender in their study examining the self-efficacy of physical education and classroom teachers in playing educational games. According to the results obtained in the study, it was thought that the fact that women and men had similar education about educational games was effective in the absence of any difference in terms of gender in the levels of educational game playing self-efficacy of teachers.

In the study, educational game playing self-efficacy levels of the teachers were examined according to their branches, and it was observed that there was a significant difference between the branches (p<0.05). According to this result, it was determined that physical education teachers' educational game playing self-efficacy levels were higher than preschool teachers and classroom teachers. A similar result was seen in Cintesun's (2020) study in which physical education and sports teacher candidates examined educational game playing self-efficacy and it was concluded that physical education teacher candidates' educational game playing self-efficacy was high. Akcinar (2018) also found that physical education teachers' game teaching skills were at a very good level in her/his study in which she/he examined the educational game playing skills of physical education teachers. However, in another study, Yilmaz, Kirmizioglu, & Yamanyurt (2019) obtained a different result and stated that classroom teachers had higher self-efficacy than physical education teachers in the planning sub-dimension of educational game playing self-efficacy scale. On the other hand, when the studies in the literature are examined, it is seen that the studies comparing the educational game playing self-efficacy levels of the teachers according to their branches are limited. In this context, it is thought that there is a need for more research findings on the game-playing self-efficacy of teachers in different branches.

As a result, this research was carried out to examine teachers' educational game playing self-efficacy levels. In the study, it was seen that physical education teachers had a high level of self-efficacy. From this point of view, it was concluded that physical education teachers are more competent than preschool and classroom teachers in

terms of playing educational games. It is recommended to support the development of preschool and classroom teachers, who have deficiencies in educational game playing self-efficacy, with in-service courses.

References

Akcinar, S. (2018). *Examination of physical education teachers' educational game playing skills*. Doctoral Thesis, İnönü University, Institute of Health Sciences, Malatya.

Altinkok, M., & Yilmaz, A. (2018). *Validity and reliability study of educational game playing self-efficacy scale*. Ankara: Gece Academy.

Avedon, E.M, & Sutton-Smith, B. (1971). *Thestudy of games*. London: John Wiley&Sons.

Ayhan, B., & Cavus, S. (2014). *Computer game addiction: A Field Study On Adolescents*. 12. International Symposium Communication in The Millennium. 15-18 June, Eskisehir.

Basal, V. (2020). *The effect of educational games on the development of physical characteristics of children aged 12-13*. Doctoral Thesis, Necmettin Erbakan University, Institute of Educational Sciences, Konya.

Biricik, Z., & Atik, A. (2021). The concept of game changing from traditional to digital and the digital game culture formed in children. *Gümüşhane University Faculty of Communication Electronic Journal, 9*(1), 445-469. DOI: https://doi.org/10.19145/e-gifder.818532

Caillois, R. (2001). *Man, play and games*. America: University of Illinois Press.

Cangir, M. (2008). *The application of the educational game method in primary education religious culture and moral knowledge lessons*. Unpublished Master's Thesis, Yeditepe University, Institute of Social Sciences, Istanbul.

Celik, A. & Sahin, M. (2013). Sports and child development. *International Journal of Social Science, 6*(1), 467-478. DOI: 10.9761/JASSS_454

Cintesun, T. (2020). Investigation of educational game self-efficacy of physical education and sports teacher candidates in terms of demographic variables. *Journal of Child Rights and Education, 1*(1), 36-44.

Dede, S.G. (2020). Examination of articles written on physical education and educational games. *Journal of Children's Rights and Education, 1*(1), 45-53. DOI: https://doi.org/10.29329/jcre.2020.287.4

Demir, G.T., & Cicioglu, H.I. (2020). Awareness scale of digital game addiction (DOBIFS): Validity and reliability study. *Eurasian Journal of Sport Sciences and Education, 2*(1), 1-17.

Demirel, O. (2010). *Education dictionary*. Ankara: Pegem Publications.

George, D., & Mallery, P. (2010). *SPSS for windows step by step: A simple guide and reference, 17.0 update*. 10th ed. Boston: Allyn & Bacon.

Gunes, G., Tugrul, B., & Ozturk, E.D. (2020). Development of game perception scale: Validity and reliability study. *Journal of Early Childhood Studies, 4*(1), 29-51. DOI: 10.24130/eccd-jecs.1967202041147

Huizinga, J. (2010). *Homo ludens: An essay on the social function of play*. Mehmet Ali Kilicbay (Ed.). Istanbul: Ayrinti Publications.

Juul, J. (2011). *Half real: Video games between real rules and fictional worlds*. ABD: The MIT Press.

Karasar, N. (2013). *Scientific research methods*. Ankara: Nobel Publishing.

Karatas, H. (2021). *Teachers' views on the use of educational games in social studies teaching*. Master's thesis, Nevsehir Haci Bektas Veli University, Institute of Social Sciences, Nevsehir.

Kaya, A.B. (2013). *Development of online game addiction scale: Validity and reliability study*. Master Thesis, Gaziosmanpaşa University, Institute of Educational Sciences, Tokat.

Khudhur, M. (2016). *An educational game-based model proposal in the teaching of morphemes: The sample of Kirkuk Turkmens*. Master Thesis, Gazi University, Institute of Educational Sciences, Ankara.

Kilic, K. (2020). *Examination of the effects of educational games on the behavior of individuals with intellectual disabilities*. Master's thesis, Erciyes University, Institute of Health Sciences, Kayseri.

Koc, V. (2020). Educational games in physical education. *Journal of Child Rights and Education, 1*(1), 68-79. DOI: https://doi.org/10.29329/jcre.2020.287.6

Koka, V. (2018). *The effect of computer-assisted educational games used in social studies lessons on students' academic success*. Unpublished Master's Thesis, İnönü University, Institute of Educational Sciences, Malatya.

MacKenzie, J.R. (2014). *Millennial interior design students' perceptions concerning gamebased learning in a lighting design course*. Master Thesis, Colorado State University, America.

Ozgun, A., Yasarturk, F., Ayhan, B., & Bozkus, T. (2017). Investigation of the relationship between sport-specific success motivation and happiness levels of handball players. *International Journal of Cultural and Social Studies, 3*(2), 83-94.

Park, J. (2019). The qualities criteria of constructive play and the teacher's role. *Turkish Online Journal of Educational Technology, 18*(1), 126-132.

Piaget, J. (1964). *The early growth of logic in the child*. London: Routledge & Kegan Paul Plc.

Polatcan, I. (2021). Determining the educational game playing skills of physical education and sports teachers. *Journal of Social Research and Behavioral Sciences, 7*(14), 181-193.

Salen, K. & Zimmerman, E. (2003). *Rules of play: Game design fundamentals*. ABD: MIT Press.

Samur, Y. (2016). *Digital game design*. Istanbul: Compass Technology and Publishing.

Savas, E., & Gulum, K. (2014). The effect of traditional games teaching method on success and permanence. *Trakya University Journal of Social Sciences, 16*(1), 183-202.

Tabachnick, B.G., & Fidell, L.S. (2013). *Using multivariate statistics*. 6th ed. Boston, MA: Pearson.

Yalcin, K.Y., Demirdag, M., & Kazak, O.O. (2017). *Sports high school educational games textbook*. MEB.

Yavuzer, H. (2012). *Child psychology*. Istanbul: Altin Kitaplar Publishing.

Yildirim, B. (2015). *The effect of educational game and feedback correction on learning level and retention*. Unpublished Master's Thesis, Necmettin Erbakan University, Institute of Educational Sciences, Konya.

Yilmaz, A., Kirmizioglu, H., & Yamanyurt, M. (2019). Examining the educational game-playing self-efficacy of physical education and classroom teachers in terms of equal variables (Van province sample). *Turkish Studies, 14*(7), 4131-4144.