



Investigation of Teachers' Self Efficiency of Educational Game Teaching: Case of Alanya

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Conflicts of Interest: The author(s) has no conflict of interest to declare.

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Ethical Statement: It is declared that scientific and ethical principles have been followed while carrying out and writing this study and that all the sources used have been properly cited.

(Date Of Received): 08/06/2023 (Date of Acceptance): 22.08.2023 (Date of Publication): 3108.2023

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Abstract

In this study, it was aimed (i) to compare teachers' educational game teaching self-efficacy in terms of gender, age, marital status, educational status, seniority, different branches and (ii) to examine educational game teaching self-efficacy levels. General survey method was used in the research. The sample group of the study consisted of 50 physical education and sports, 50 preschool and 50 classroom teachers, total 150 teachers working in Alanya district. In data collection, the 'Educational Play Self-Efficacy Scale' and the demographic information form were applied online via Google® forms to the individuals who voluntarily participated in the study. The data obtained from the study were using IBM SPSS 25.0 statistical package programme. Since the data showed normal distribution as a result of the kurtosis and skewness test, Independents Sample T test was used for binary variables and One Way Anova test was used for three or more variables. As a result of the findings, it was determined that there was a significant difference in the participants' educational game playing competences in terms of age, seniority and branch variables. However, no significant difference was found in terms of gender and educational status variables. In addition, while physical education and sports teachers' self-efficacy in teaching educational games is better than other branch teachers, pre-school teachers' efficacy levels in the application dimension are lower than other branches. As a result, it was determined that teachers' self-efficacy in educational game teaching was at a high level, but there were differences in age, professional seniority, branch and application competence in game teaching. By providing in-service training to improve the implementation dimension, pre-school teachers' self-efficacy level in educational game teaching can be increased to a high level.

Keywords: Educational game, Teacher, Physical education and sport teacher, Self-efficacy.

Özet

Öğretmenlerin Eğitsel Oyun Oynatma Öz Yeterliliklerinin İncelenmesi: Alanya Örneği

Bu çalışmanın amacı (i) öğretmenlerin eğitsel oyun oynatma öz-yeterliliklerinin cinsiyet, medeni durum, eğitim durumu, yaş, kıdem, farklı öğretmenlik branşları açısından karşılaştırılması ve (ii) eğitsel oyun oynama öz-yeterlilik düzeylerinin incelenmesidir. Araştırmada genel tarama yöntemi kullanılmıştır. Araştırmanın örneklem

grubunu Alanya ilçesinde görev yapan 50 beden eğitimi ve spor, 50 okul öncesi ve 50 sınıf öğretmeni olmak üzere toplam 150 öğretmen oluşturmaktadır. Verilerin toplanmasında 'Eğitsel Oyun Öz-Yeterlik Ölçeği' ve demografik bilgi formu, çalışmaya gönüllü olarak katılan bireylere Google® formları aracılığıyla çevrimiçi olarak uygulanmıştır. Çalışmadan elde edilen veriler IBM SPSS 25.0 istatistik paket programı kullanılarak analiz edilmiştir. Veriler basıklık ve çarpıklık testi sonucunda normal dağılım gösterdiğinden ikili değişkenler için bağımsız örneklem T testi, üç ve daha fazla değişken için tek yönlü varyans analiz testi kullanılmıştır. Bulgular sonucunda katılımcıların eğitsel oyun oynatma yeterliliklerinde yaş, mesleki kıdem ve öğretmenlik yaptığı branş değişkenleri açısından anlamlı bir farklılık olduğu tespit edilmiştir ($p<0,05$). Ancak cinsiyet ve eğitim durumu değişkeni açısından anlamlı bir farklılık bulunmamıştır ($p>0,05$). Ayrıca beden eğitimi ve spor öğretmenlerinin eğitsel oyun oynatma öz-yeterliliklerinin puan ortalaması diğer branş öğretmenlerine göre daha iyi olduğu görülürken, okul öncesi öğretmenlerinin uygulama boyutundaki yeterlilik düzeylerine ilişkin puan ortalaması ise diğer branşlara göre daha düşüktür. Sonuç olarak öğretmenlerin eğitsel oyun oynatma öz-yeterliliklerinin yüksek düzeyde olduğu ancak yaş, mesleki kıdem, branş ve oyun oynatmadaki uygulama yeterliliğinde farklılıklar olduğu belirlenmiştir. Uygulama boyutunun iyileştirilmesine yönelik hizmet içi eğitim verilerek okul öncesi öğretmenlerin eğitsel oyun oynatma öz-yeterlilik seviyesi yüksek düzeye çıkarılabilir.

Anahtar Kelimeler: Eğitsel oyun, Öğretmen, Beden eğitimi ve spor öğretmeni, Öz-yeterlilik.

INTRODUCTION

Although it is not known when and where the game was first played in the historical process, it is stated in written sources that children's games played with stones and vaccine bones are generally known as the oldest games. Historians have discovered in their research that these games were carved on ancient reliefs. In ancient Egypt, various game figures were found on wall paintings. Traces of children's games were also found in some tombs belonging to ancient civilizations living in Anatolia. In some of his works, Kashgarli Mahmut mentions the game of tepük, which is similar to today's football played in Central Asia. Children's games are also found in Dede Korkut stories (9). Although it is known that some of these games are played for entertainment and some are played for the purpose of preparing for life, it is generally known that all games have an important contribution in preparing children for life. Although the game has an important place in preparing for life and having a good time for living beings in all areas of life, it is clearly stated in many studies that educational games adapted to the field of education of children are one of the most important components of the educational process (10).

Education is an important factor in preparing people for life, which is present at every stage of life and is tried to be given to living beings in different ways. In order to provide effective education, a number of different methods and auxiliary supports should be used. In this context, the place of games in education has been evident since the beginning of human history. It is seen in the literature that not only humans but also all living creatures benefit from games in preparing for life, utilizing their free time, and staying healthy. As Huizinga (16). revealed in his *Homo Ludens*, the first people developed self-defense tactics through games, and in the following periods, people resorted to games in every field (4).

When the game is examined conceptually, there is no single definition of the game. The reason is that it is too comprehensive to be expressed with a single definition. According to Dönmez (13), play is explained as a part of real life, and one of the most effective learning processes for children, which is the basis of physical, cognitive, emotional and social development, which is a part of real life and which is the basis of physical, cognitive, emotional and social development, which is carried out with or without rules, with or without rules, in which the child voluntarily takes part under all circumstances. Play can sometimes be a whole with strict rules that make it difficult for children to adapt to the game. However, even though children have difficulty in complying with these rules, they do not prefer to attempt to disrupt this whole by bending the rules (18).

Games are activities that provide social harmony, affect the level of intelligence, attention, and skill, affect the level of intelligence, attention, and skill, have no material benefit, give pleasure with physical and mental abilities, in a classified place and time, have their own rules, are made through voluntary participation, and can also be done with groups, provide social harmony, and affect the level of intelligence, attention, and skill

(15). Through play, children come together not only with their own age group but also with different age groups and begin to ensure their social adaptation (21).

Although the games used in the educational environment are similar to other types of games, they are called educational games. Educational games are a process and experience that allows children to reinforce the information they learn in the classroom, allows them to have fun and relax while using their cognitive abilities, adds activity to the classroom environment, attracts the attention of all students to the lesson, concretizes the student's learning experience, provides intrinsic motivation, and draws the student in (22).

It is undoubtedly a fact that educational games are one of the most important teaching techniques that allow the student to participate directly in the educational activity and appeal to all developmental areas in the student-oriented education system we are in. Teachers can make students learn more easily by creating an active learning environment while playing educational games and teaching students to dream. In this respect, teachers' educational game self-efficacy level may have an effect on student achievements.

There are important issues to be considered in the process of preparing and implementing educational games. As long as these issues are taken into consideration, the best efficiency will be obtained from educational games. If it is necessary to mention these issues that need to be paid attention in general, the achievements, deciding at which stage of the lesson the game will be used, taking into account the characteristics of the group to be played, the duration of the educational game, the necessary materials, the appropriate physical conditions, the rules should be clearly and clearly stated in advance and flexibility in the rules should be made in case of need. In addition, how evaluation and reward will be done should be determined in advance (1, 20).

In this study, it was aimed to examine teachers' self-efficacy in educational games. For this purpose, (i) the comparison of teachers' self-efficacy of educational game teaching in terms of gender, marital status, educational status, age, seniority, different branches and (ii) self-efficacy levels of educational game teaching were examined.

METHOD

Research Design

The research was conducted in the survey model from the descriptive method. The general survey model is explained as a research method that aims to define an existing situation as it exists (17). A random sampling technique was used to determine the sample of the study.

Participants

The population of the study consisted of teachers working in Alanya district in the 2022-2023 academic year. The sample group consists of a total of 150 teachers, including 50 physical education and sports, 50 preschool (kindergarten) and 50 primary school classroom teachers working in the same district. Participants were informed about the content of the research before the study and voluntarily participated in the study.

Variable	Group	N	%
Gender	Woman	93	62
	Man	57	38
	Total	150	100
Age (year)	21-30	49	32,7
	31-40	56	37,3
	41-50	39	26
	51 and over	6	4
	Total	150	100
Marital status	Married	95	63,3
	Single	55	36,7
	Total	150	100
Education Status	Bachelor	126	84
	Master	24	16
	Total	150	100
Seniority (year)	Between 2-6	27	18
	Between 7-11	47	31,3
	Between 12-16	56	37,3
	17 and over	20	13,3
	Total	150	100
Branch	Physical education and sport	50	33,3
	Pre-school	50	33,3
	Classroom teacher	50	33,3
	Total	150	100

Table 1 shows that 62% of the participants were female, 37.3% were between the ages of 31-50, 63.3% were married, 84% were bachelor's graduates, and 37.3% had 12-16 years of seniority.

Ethics

Ethical approval of the study was obtained from Alanya Alaaddin Keykubat University Social and Human Ethics Committee (with decision number 2023/02 and date 20.02.2022).

Data Collection Instrument

The data used consist of 2 parts: demographic information and scale questions. Demographic information includes questions about gender, age, marital status, branch, and seniority. Teachers' Self-Efficacy Scale for Educational Game Play developed by Altınkök and Yılmaz (6) was used in the study. The scale (Planning: Items 1, 2, 3, 4. Implementation: 5, 6, 7, 8. Evaluation: 9, 10, 11. items) consists of three sub-dimensions and 11 questions and is a 5-point Likert-type scale. The reliability coefficient of the scale was found to be 0.88 (6). In scale validity and reliability studies, it is stated that the sample size should be 5-10 times the number of scale items (24, 19). For this reason, since the scale consists of 11 items, the scale was applied to at least 50 teachers for each branch. The score ranges table given by Altınkök and Yılmaz (6) was used in the evaluation of game playing levels (Score ranges between 1-1,8 score; Very weak. Between 1,9-2,6 score; Weak. Between 2,7-3,4 score; Medium. Between 3,5-4,2 score; High. Between 4,3-5 score; Very High.).

Analysis of Data

Descriptive statistical information including frequency distribution, percentage, arithmetic mean, and standard deviation of the data of the participants were made with Spss 24 program. Skewness and kurtosis tests were applied to the data obtained from the research for the normality test. Skewness and kurtosis values between +1.5 and -1.5 were interpreted as normal distribution (25). Since the skewness and kurtosis values were between +1.5 and -1.5 as a result of the test, Independent Samples T test was performed for pairwise comparisons, One Way Anova test for multiple comparisons, and Tukey and LSD tests were performed to determine which groups the differences were between. The statistical significance level was accepted as $p < 0.05$.

RESULTS

Table 2. Comparison of participants' educational game teaching self-efficacy according to gender

	Gender	N	Mean±SD	t	df	p
Planning	Woman	93	4,301±0,456	0,452	148	0,652
	Man	57	4,258±0,689			
Application	Woman	93	4,115±0,639	-0,315	148	0,753
	Man	57	4,149±0,621			
Assessment	Woman	93	4,369±0,446	-1,602	148	0,111
	Man	57	4,491±0,463			

In Table 2, no significant difference was found in the sub-dimensions of the game teaching self-efficacy scale in terms of gender variable ($p>0.005$).

Table 3. Comparison of participants' educational game teaching self-efficacy according to marital status

	Marital status	N	Mean±SD	t	df	p
Planning	Married	95	4,231±0,562	-1,557	148	0,122
	Single	55	4,377±0,533			
Application	Married	95	4,073±0,599	-1,400	148	0,164
	Single	55	4,222±0,676			
Assessment	Married	95	4,340±0,458	-2,716	148	0,007
	Single	55	4,545±0,422			

In Table 3, when the sub-dimensions of the game teaching self-efficacy scale were examined according to the marital status of the participants, no significant difference was found in the planning and implementation dimensions ($p>0.005$). However, a significant difference was found in the evaluation sub-dimension ($p<0.005$). At this level of significance, it was determined that singles were at a better level.

Table 4. Comparison of participants' educational game teaching self-efficacy according to their educational status

	Educational Status	N	Mean±SD	t	df	p
Planning	Bachelor	126	4,252±0,575	-1,680	148	0,095
	Master	24	4,4583±0,394			
Application	Bachelor	126	4,127±0,625	-0,06	148	0,952
	Master	24	4,135±0,667			
Assessment	Bachelor	126	4,444±0,436	1,794	148	0,075
	Master	24	4,263±0,529			

In Table 4, no significant difference was found in the sub-dimensions of the game teaching self-efficacy scale of the participants in terms of educational status ($p>0.005$).

Table 5. Comparison of participants' educational game teaching self-efficacy according to age

	Age	Mean±SD	F	p	Tukey, LSD
Planning	21-30 years (1)	4,316±0,581	0,808	0,491	
	31-40 years (2)	4,196±0,611			
	41-50 years (3)	4,359±0,439			
	51 and over years (4)	4,375±0,440			
Application	21-30 years (1)	4,362±0,530	5,470	0,001	1-2 1-3
	31-40 years (2)	4,102±0,626			
	41-50 years (3)	3,846±0,680			
	51 and over years (4)	4,291±0,332			
Assessment	21-30 years (1)	4,523±0,435	1,532	0,209	1-2
	31-40 years (2)	4,339±0,419			
	41-50 years (3)	4,384±0,521			
	51 and over years (4)	4,444±0,403			

In Table 5, when the sub-dimensions of the participants' self-efficacy scale for teaching games according to age were analyzed, no significant difference was found in the planning and evaluation dimensions ($p>0.005$). However, a significant difference was found in the implementation sub-dimension ($p<0.005$). This

significance was found to be the highest in the 21-30 age group and the lowest in the 41-50 age group at the mean level.

Table 6. Comparison of participants' educational game playing self-efficacy according to years of seniority

	Seniority	Mean±SD	F	p	Tukey, LSD
Planning	Between 2-6 years (1)	4,388±0,581	2,785	0,043	1-2
	Between 7-11 years (2)	4,095±0,700			
	Between 12-16 years (3)	4,375±0,393			
	17 years and over (4)	4,337±0,431			
Application	Between 2-6 years (1)	4,398±0,564	2,540	0,059	
	Between 7-11 years (2)	4,133±0,607			
	Between 12-16 years (3)	4,062±0,627			
	17 years and over (4)	3,937±0,701			
Assessment	Between 2-6 years (1)	4,567±0,390	1,267	0,288	
	Between 7-11 years (2)	4,390±0,473			
	Between 12-16 years (3)	4,369±0,448			
	17 years and over (4)	4,400±0,502			

In Table 6, no significant difference was found in the implementation and evaluation sub-dimensions of the participants according to the game teaching self-efficacy scale ($p>0.005$). However, a slight difference was found in the planning sub-dimension ($p<0.005$).

Table 7. Comparison of participants' self-efficacy in educational game teaching according to their branches

	Branches	Mean±SD	F	p	Tukey, LSD
Planning	Physical education and sport (1)	4,395±0,443	3,188	0,044	1-3 3-2
	Pre-school (2)	4,330±0,344			
	Classroom teacher (3)	4,130±0,763			
Application	Physical education and sport (1)	4,375±0,452	9,799	0,000	1-2 3-1
	Pre-school (2)	3,850±0,719			
	Classroom teacher (3)	4,160±0,586			
Assessment	Physical education and sport (1)	4,446±0,483	5,705	0,004	1-2 3-2
	Pre-school (2)	4,253±0,423			
	Classroom teacher (3)	4,546±0,413			

In Table 7, significant differences were found in the planning, implementation, and evaluation sub-dimensions of the participants in the game teaching self-efficacy scale ($p<0.005$). In the planning sub-dimension of this significance, it is seen that physical education and sports teachers' self-efficacy in educational game teaching is better in the planning sub-dimension compared to other branches. It is seen that physical education teachers are better than other branches in the application sub-dimension of educational game teaching. In the evaluation sub-dimension, it is seen that classroom teachers are better than other branches.

DISCUSSION

In this study, it was aimed to examine teachers' self-efficacy in educational games. For this purpose, (i) the comparison of teachers' self-efficacy of educational game teaching in terms of gender, marital status, educational status, age, seniority, different branches and (ii) self-efficacy levels of educational game teaching were examined. In this direction, in our study, when the participants were examined in terms of gender, no significant difference was found in the sub-dimensions of educational game teaching, which reveals that both male and female participants are good at educational game teaching self-efficacy and the importance they attach to educational games. In the study, there was no significant difference between the play skill levels of

physical education teachers according to their gender (2). In a study conducted by Yılmaz et al. (27), it was determined that the participants' self-efficacy in playing games did not differ significantly according to the gender variable. It was seen that there was no difference in the planning and implementation dimension of physical education and sports teacher candidates' educational game playing self-efficacy according to gender variable, but there was a difference in the evaluation sub-dimension according to gender variable (12). In Aslan's (7) study on the self-efficacy of preschool teachers regarding game teaching, while there was a significant difference in the planning and evaluation sub-dimension according to gender variable, there was no significant difference in the implementation sub-dimension. In another study examining the self-efficacy levels of special education teachers regarding game teaching, a significant difference was found in the sub-dimension of implementing game activities (4). It was stated that the play teaching self-efficacy levels of teachers working in preschool special education institutions differed according to the gender status of the teachers (11).

In our study, when the marital status of the participants was analyzed in terms of marital status, no significant difference was found in the sub-dimensions of educational game teaching and it was revealed that both married and single participants were good at educational game teaching self-efficacy. In this respect, it can be said that marital status has no effect on educational game playing self-efficacy. Yılmaz et al. (26) stated in their study that the teaching self-efficacy levels of physical education teachers differed in terms of marital status. However, in another study, it was determined that there was no significant difference. In addition, it was determined that the self-efficacy beliefs of married and single teachers were high (8).

In our study, no significant difference was found in the sub-dimensions of educational game teaching when analyzed in terms of the educational status of the participants. In this respect, it can be stated that educational status has no effect on educational play self-efficacy. There is no statistically significant difference in the self-efficacy of teachers working in preschool special education institutions regarding play teaching according to the educational status variable (7, 3). However, it was observed that special education teachers' self-efficacy related to play teaching differed according to their educational status (4).

In our study, when the participants were analyzed in terms of age, a significant difference was found in the application sub-dimension of educational game teaching competencies. It can be said that this difference may be due to the fact that the frequency of playing educational games in the lessons of the participants in the middle age group is less than the participants in the other category and this may have affected their application skills. When we examined the studies, for example, in one study, when the sub-dimensions of the participants' game playing self-efficacy scale were examined, no significant difference was found in the implementation and evaluation dimensions. However, a significant difference was found in the planning sub-dimension. This significance was found to be higher in the 18-30 age group than in the 31 and over age group (27). It was found that the play teaching self-efficacy levels of teachers working in preschool special education institutions showed a significant difference according to age (11). In another study, it was observed that preschool teachers' self-efficacy for play teaching did not differ according to age variable (7). Similarly, in another study, it was observed that there was no significant difference in the educational play skill sub-dimension of teachers according to age variable (23).

In our study, when analyzed in terms of seniority years of the participants, there was a slight difference in the planning sub-dimension between the educational game playing skills, but no significant difference was found in the implementation and evaluation sub-dimensions. The excitement and experience of those who have just stepped into the teaching profession may have led to a difference in the planning dimension because they were more meticulous in preparing for the lesson. In another study from the literature, a significant difference was found between 11-20 years of service and 21-30 years of service in the dimensions of preparation phase, game phase, and introduction to the game and game playing skill level according to the years of service of physical education teachers (2). In the study examining the self-efficacy levels of special education teachers regarding play teaching, a significant difference was found in terms of gender in the sub-dimension of implementing play activities (4). However, in another study, no difference was found according to seniority (27). It was concluded that the play teaching self-efficacy levels of teachers working in preschool special education institutions showed a significant difference according to the professional seniority of the teachers (11). In another study on the self-efficacy of preschool teachers regarding play teaching, a significant

difference was observed in favor of teachers with 6-10 years of seniority according to the variable of professional seniority (7). It was stated that there was a significant difference in teachers' ability to play educational games according to the length of service variable (23).

In our research, when the participants were analyzed in terms of the branch, a difference was found between their educational game teaching skills. The fact that the physical education and sports course includes the acquisition of basic motor skills in terms of its content, branch-specific activities, and activities with games for this purpose may have influenced physical education and sports teachers to have a better level of educational game playing skills than other branch teachers. In the study conducted by Akçınar (2), it was determined that physical education teachers' skill level in playing educational games was at a very good level. In a study conducted on the self-efficacy of physical education and sports teachers and classroom teachers to play educational games, no significant difference was found in the implementation and evaluation sub-dimensions of the participants. However, a significant difference was found in the planning sub-dimension. It was determined that the mean self-efficacy score of classroom teachers was higher than that of physical education teachers (27). In another study, teachers' self-efficacy levels regarding planning, implementation, evaluation, and game teaching did not differ according to branch (7).

In addition to this, when the educational game teaching competence levels of the branches were examined according to the score ranges in Altınkök and Yılmaz (6), it was seen that the educational game playing competence levels of the participants working in physical education and sports and preschool teaching branches were at a very high level in terms of planning-implementation-evaluation, while the participants of the classroom teaching branch were at a high level in the planning and implementation sub-dimension. In a study conducted, physical education teachers' skills in the preparation phase and game play phase were found to be very good, while their skills in the evaluation phase were found to be poor (2). In another study, when the self-efficacy levels of physical education and sports teacher candidates in educational game playing were examined, it was determined that the teacher candidates had very high self-efficacy in the planning and evaluation dimension and high self-efficacy in the implementation dimension (12). While teachers working in preschool special education institutions see themselves as competent in terms of planning, evaluation, and professional in game teaching, they are not very competent in terms of implementation (7).

CONCLUSION

It was determined that there was a significant difference in the educational game teaching skills of the participants in terms of age, seniority, and branch characteristics. There was no statistically significant difference in terms of gender and educational status. It was seen that the self-efficacy levels of physical education and sports teachers in teaching educational games were higher than the teachers in other branches. However, it was determined that the efficacy levels of pre-school teachers in the application dimension were lower than the teachers in other branches. In addition, it was determined that teachers' self-efficacy for teaching educational games was at a high level. Pre-school teachers' self-efficacy levels for playing educational games can be increased to a high level by providing in-service trainings to improve the application dimension. A new study can be conducted by adding more samples and branches in the comparison of teachers' self-efficacy to teach educational games.

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