


Online practice of physical activity cards: A study with physical education and sports teacher candidates

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Online Practice of Physical Activity Cards: A Study with Physical Education and Sports Teacher Candidates

Abstract

This study aims to demonstrate how physical activity cards (PAC) can be taught to physical education and sports teacher candidates through distance education, and to test the effectiveness of the teaching process. Due to the lack of open access materials that provide detailed explanations on how to apply PAC cards, the study seeks to fill an important gap in physical education and sports education. Teacher candidates were provided with access to video lessons on the practice of PAC cards, and their knowledge levels were tested using the PAC Knowledge test before and after the instruction. A total of 30 teacher candidates, including 15 females and 15 males studying in the physical education and sports teaching program, were included in the research. A control group consisting of 15 female and 15 male teacher candidates was included in the research. The data collected was analyzed using the SPSS program. The study results show that PAC cards can be effectively applied through online education, and that a scientifically tested digital environment can provide teachers and teacher candidates with continuous access to these materials.

Keywords: Physical education and sports teacher candidates, PAC cards, Sufficiency

Fiziksel Etkinlik Kartlarının Çevrimiçi Ortamda Uygulanması: Beden Eğitimi ve Spor Öğretmen Adaylarında Bir Çalışma

Özet

Bu araştırma, fiziksel etkinlik kartlarının (FEK) uzaktan öğretim yoluyla beden eğitimi ve spor öğretmen adaylarına nasıl aktarılacağını ve öğretim sürecinin etkililiğinin test edilmesini amaçlamaktadır. Araştırmada, FEK kartlarının uygulanışıyla ilgili detaylı anlatım içeren açık erişim materyallerinin eksikliği nedeniyle önemli bir açığı doldurmak hedeflenmektedir. Öğretmen adayları, FEK kartlarının uygulanışına yönelik ders videolarına erişim sağlamış ve FEK Bilgi testi uygulanarak öğretim öncesi ve sonrası bilgi düzeyleri karşılaştırılmıştır. Araştırmaya beden eğitimi ve spor öğretmenliği programında öğrenim gören 15 kadın ve 15 erkek olmak üzere toplam 30 öğretmen adayı dahil edilmiştir. Araştırmaya 15 kadın ve 15 erkek öğretmen adayından oluşan kontrol grubu alınmıştır. Toplanan veriler SPSS programında kayıt altına alınarak analiz edilmiştir. Araştırma sonuçları, çevrimiçi öğretim yoluyla FEK kartlarının etkili bir şekilde uygulanabileceğini ve öğretmenlere ve öğretmen adaylarına sürekli erişim sağlayabilecekleri bilimsel yöntemlerle test edilmiş dijital bir ortam sağlayabileceğini göstermektedir.

Anahtar Kelimeler: Beden eğitimi ve spor öğretmen adayları, FEK kartları, Yeterlilik

Introduction

Physical education and sports; physical education is the collection of movements done for the development of mental health. Sports are defined as physical activities played by individuals competing under official rules. Physical education and sports teachers organize game and sports activities that support physical activity among children and young people from kindergarten to high school. The aim is to develop motor skills and physical development among small children, and appropriate exercise and eating habits among older children.

The Physical Activity Cards consist of yellow and purple card groups. The yellow card group includes "Teacher Card", "Basic Movement Skills and Concepts Card", "Combined Movement Cards", "Health Understanding Cards", "Sports Unrestricted Card", "Movement Competency Card", and "Physical Activity and Nutrition Pyramid Card". The purple card group includes "Teacher Card", "Net and Racket Games", "Offensive Games", "Hitting and Catching Games", "Active Participation", "Health Understanding", and "Sports Unrestricted" cards.

The Physical Activity Cards (PAC) "Offensive Games Group" are designed to develop skills necessary for sports such as basketball, football, handball, hockey, and korfbal among children. The activities present the skills used in offensive games in a game setting.

Physical education lessons are implemented as games, especially in the first level of primary education, for eight years in elementary school. The basic concept of the game is to gain movement skills. To sustain human life in a healthier and more qualitative way, movement is necessary (Temel and Avşar, 2009).

"Games and physical activities" are conscious and planned activities aimed at the physical, mental, emotional, and social development of the growing generations. They are considered complementary and integral parts of general education (Demirci and Demirci, 2014). Gray and Judy (2003) stated that children who participate in play activities during their childhood are more successful in acquiring movement skills in elementary school. Additionally, Ishee (2003) stated that children will be healthier and more conscious in their later years.

The Ministry of National Education (MEB) Board of Education approved the Primary School Games and Physical Activities (OFE) curriculum for implementation starting from the first grade in the 2012-2013 academic year, gradually extending to upper grades. Within the scope of the International Inspiration Project, "Physical Activity Cards (PAC)" and "I'm Playing Games Compilation Booklet" were prepared, and it was stated that it would be appropriate to use them in grades 1-4 of primary schools (MEBa, MEBb, 2012).

The use of PAC cards is reported to positively affect the cognitive, affective, and psychomotor development of children (Lapointe, 2016; Bozkurt et al., 2016; Saygılı et al., 2015; Yin and Moore, 2004; Hürmeriç, 2003). İrez et al. (2013) also stated that PAC cards are a highly useful material for skill development in physical education classes.

In this study, the aim is to teach the Yellow Physical Activity Cards, which have been developed for the acquisition of basic movement skills, to teacher candidates through distance education. The Yellow PAC cards provide a basis for mastering complex movements as they include basic movement skills. Therefore, in this study, Yellow PAC cards were selected.

Method

Ethical approval was obtained from the ethics committee of a higher education institution with protocol number 210036/28 before starting the research. An experimental design with a control group was adopted as the research model.

Yellow Physical Activity Cards

The Physical Activity Cards (PAC) yellow cards group was prepared activity and game-based to develop movements that constitute the Movement Competency sub-learning area (basic movement skills, basic movement concepts, game strategies/tactics) in the Primary School "Games and Physical Activities" course program. Yellow cards have been created under headings such as movement patterns suitable for the developmental characteristics of primary school children (walking, running, jumping, sliding, etc.), balancing movements (rotation, oscillation, stance, sitting, etc.), movements requiring object control (throwing, catching, hitting, etc.), and combined movements (relay race, target games, etc.).

Participants

A total of 30 teacher candidates, including 15 females and 15 males studying in the physical education and sports teaching program, were included in the research.

Control Group

A control group consisting of 15 female and 15 male teacher candidates was included in the research. The PAC knowledge test was also applied to this group. The control group was not included in the distance learning process.

Measurement

PAC Knowledge Test was developed to measure the knowledge levels of teacher candidates regarding Yellow PAC cards included in the research. The test, developed by taking expert opinions, was applied to teacher candidates before and after distance learning. Pre-test and post-test results were compared.

Pre-Test

Prior to participating in remote education, prospective teachers were administered the PAC test online.

Post-Test

After participating in remote education, prospective teachers were administered the PAC test online.

Practice Test

Prospective teachers who participated in remote education randomly selected and applied one of the activities included in the Yellow PAC card. The practice performances of the teacher candidates were evaluated by preparing the PAC Practice Evaluation Form, which was created in line with expert opinions. Each candidate who participated in the practice test has a practice evaluation score.

Data Collection Process

Training videos on how to apply Physical Activity Cards were created by the researcher and uploaded to the website to be created. Prospective teachers who wished to participate in the study voluntarily were given free membership to the website. Prospective teachers who applied the PAC Information test online followed a PAC practice for one day each week for two days. After the lessons were completed, the teacher candidates applied the PAC information test again. The videos length ranged between 4 minutes to 10 minutes. The post-test was applied right after the videos were completed. After the instructional process was completed, the candidates explained how they applied a randomly selected activity. This practice was evaluated by the researcher according to the PAC Practice Evaluation Form criteria. If necessary, support was obtained from assistant staff during the explanation and video recording of the PAC card. These staff members participated in the lesson as a student role during the class.

Data Analysis

The data obtained during the study was recorded in a computer environment. The pre and post-test results and PAC Practice Evaluation scores were entered into the SPSS 22 program (IBM Corp. Released 2013. IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.) Normal distribution was determined by skewness and kurtosis values. Paired t-test was used to compare differences between dependent groups.

Results

In the study, Skewness and Kurtosis values were calculated to determine the normal distribution of the data. The Skewness test result for participants' pre-test scores is 0.204, while the result for post-test scores is -0.173. The Kurtosis value for the pre-test is 0.070, and for the post-test, it is -1.190. Based on these results, it is concluded that the Skewness and Kurtosis values are between -1.5 and +1.5, indicating that the data follows a normal distribution. Therefore, parametric tests like paired t-test were used for analysis.

Table 1. Comparison of Control and Experimental Groups.

		Mean	n	sd	p
Pair 1	Control Pre-test	40.41	30	12.26	.635
	Experimental Pre-test	42.22	30	18.10	
Pair 2	Experimental Pre-test	40.9	30	19.31	.000*
	Experimental Post-test	68.68	30	10.87	
Pair 3	Control Pre-test	40.41	30	12.26	.397
	Control Post-test	39.16	30	10.73	
Pair 4	Control Post-test	39.16	30	10.73	.000
	Experimental Post-test	68.64	30	11.05	

* $p < 0.01$

Table 1 presents the pre-test and post-test comparisons of the Control and Experimental groups. There was no statistically significant difference between the pre-test means of the Control and Experimental groups ($p > 0.05$). Therefore, both groups had similar levels of knowledge regarding physical activity cards. A statistically significant difference was found between the pre-test and post-test results of the Experimental group ($p < 0.05$). After participating in the online education about physical activity cards, the knowledge level of the Experimental group increased. However, there was no statistically significant difference between the pre-test and post-test comparisons of the Control group. Therefore, there was no change in the knowledge level of the teacher candidates who did not participate in the physical activity card education. This indicates that the prepared education influenced the knowledge level regarding physical activity cards.

Table 2. Practice test results

Participants	PAC Choice	PAC post test	General Knowledge 30 Points	Practical Knowledge 70 Points	Total
Participant 1	Kicking	80	20	70	90
Participant 2	Stop-Control	70	25	60	85
Participant 3	Rolling	75	30	55	85
Participant 4	Hitting with Racket	80	30	65	95
Participant 5	Dribbling	78	20	60	80
Participant 6	Jumping-Hopping	75	15	70	85
Participant 7	Catching	80	20	60	80
Participant 8	Tail Tag - Ball Collecting Game	70	10	60	80
Participant 9	Target Games	60	20	70	90
Participant 10	Moving Target Hitting Games	60	15	70	85

**Ten participants among the experimental group were randomly selected for this session.*

It has been found that the teacher candidates randomly selected from the experimental group showed a very good level of performance by applying the selected activity from the physical activity cards. The results of the application test are presented in Table 2.

Discussion and Conclusion

This study provides an example of implementing physical activity cards in an online environment. According to the results of the study, the ability of teacher candidates to learn and test their application of yellow PAC cards has increased. The results of this study demonstrate that teaching physical activities through remote learning is an effective method.

Many teachers have had to adopt online teaching methods due to the pandemic. The results of this study can guide the development of online teaching materials for physical education and sports teachers. Presenting learning materials online, such as yellow PAC cards, can help teachers learn more effectively.

The use of video technology in physical education has been found to be an effective instructional tool in enhancing skill execution, technique, and knowledge learning, as well as improving physical fitness levels and increasing student engagement. Palao et al. (2015) reported that the ‘video and teacher feedback’ condition provided the most positive overall results, although the teacher felt overwhelmed by the demands of the technology. Weir and Connor (2009) examined the use of digital video technology in providing formative and summative assessment, allowing students to set their own learning goals and evaluate their own learning. O’Loughlin et al. (2013) found that digital video can enhance motivation, feedback, and performance in skill learning in primary physical education, and Mödinger et al. (2021) reported that video-based visual feedback is effective in enhancing motor learning. Al-Haliq et al. (2013) found that using video improved physical fitness levels more than traditional

methods, and Ningthoujam (2016) highlighted the use of self-made video models as teaching and feedback tools. Nowels and Hewit (2018) showed that immediate video feedback in addition to verbal feedback from instructors improved student learning and performance, and Casey and Jones (2011) reported that video technology enhanced students' engagement in Physical Education lessons. Laughlin et al. (2019) noted that teachers are finding creative ways to provide instant motor-performance feedback using video technology, which can be easily documented for assessment purposes. In summary, video technology has the potential to improve various aspects of physical education instruction, although it may require additional support and training for teachers to effectively integrate it into their teaching practice. The integration of technology in physical education has become increasingly important in recent years. One such technology, the Video Annotation Module (VAM), has been developed to enhance blended learning in physical education (Luo & Pang, 2010). Another technology, augmented reality, has also been explored as a means of improving instruction in physical education. In fact, studies have shown that augmented reality-assisted instruction is more effective than video-assisted instruction (Chang et al., 2020).

The COVID-19 pandemic has also brought attention to the importance of video-based instruction in physical education. Prior to the pandemic, video-based instruction was not utilized as a main teaching tool in physical education (Lee & Chang, 2020). However, the pandemic has forced educators to adapt and utilize technology to continue providing quality instruction to their students, including video-based instruction.

In conclusion, this research has tested the applicability of yellow PAC cards for online teaching. It has been found that the distance learning process has a positive impact on the learning abilities of teacher candidates. Researchers suggest that this method may be applicable for other learning materials as well.

This study has increased the ability of physical education and sports teacher candidates to learn and test the application of yellow PAC cards in an online environment. This method can help physical education teachers prepare online teaching materials and contribute to the learning process of students. The distance learning process has also accelerated the process of teacher candidates turning their theoretical knowledge into practice. As a result, this research has demonstrated the effective implementation of distance learning in the field of physical education and sports.

Author Contribution

The author designed, conducted, and concluded the study

Conflict of Interest

There is no conflict of interest.

Ethical Statement

Ethical approval was obtained from the ethics committee of a higher education institution with protocol number 210036/28 before starting the research.

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