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PEDAGOGY

Effect of a Physical Education Training Program on the Physical Education Teaching Efficacy of Classroom Teacher Candidates

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Abstract

This study investigated the effectiveness of a 1-week physical education training program (PETP) on the physical education teaching efficacy (PE teaching efficacy) of classroom teacher candidates (CTCs). A quasi-experimental design with pretest–posttest experimental and control groups was used. The study included two groups: (a) an experimental group of CTCs (n = 24) enrolled in a PETP and (b) a control group of CTCs (n=30) not enrolled in a PETP. Subjects were tested via a PE teaching efficacy scale (Humphries, Hebert, Daigle, & Martin, 2012). A Wilcoxon signed-rank test determined differences between each group from pretest to posttest. The data analysis showed no significant differences between pretest and posttest in the control group; however, it found significant differences in favor of posttest in the experimental group. Finally, the PETP affected the PE teaching efficacy of CTCs.

An increasing amount of scientific evidence points to the positive effects of physical activity (PA; Strong et al., 2005), and regular participation in PA is essential to the optimal health and development of

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any child (World Health Organization [WHO], 2011). During childhood, PA prevents disease and improves health outcomes (Neufer et al., 2015) and it is necessary to increase physical activities in all age groups (Cvejić & Buišić, 2012). National and international public health authorities suggest that all children and adolescents should perform that at least 60 min of moderate- to vigorous-intensity physical activity daily (Türkiye Halk Sağlığı Kurumu, 2014; U.S. Department of Health and Human Services, 2018; WHO, 2011).

However the PA levels of many children are insufficient (Cvejić, & Ostojić, 2018; Hardy, King, Espinel, Cosgrove, & Bauman, 2016). Decreased PA levels may play an important role increasing childhood obesity (Butte, Christiansen, & Sørensen, 2007). It has been reported that between 1980 and 2014 the worldwide prevalence of obesity nearly doubled with 11% of men and 15% of women (i.e., more than half a billion adults) being classified as obese. In 2013, an estimated 42 million children aged under 5 years (6.3%) were overweight, an increase from around 5% in 2000, to 6% in 2010, to 6.3% in 2013, with the highest rates of increase being observed in Africa and Asia (WHO, 2015). The rate of obesity in adolescents has nearly quadrupled (from 5% to 21%) over the past 30 years in the United States (CDC, 2012). The prevalence of obesity in Turkey increased from 0.6% to 7.3% with an 11.6-fold increase between 1990–1995 and 2011–2015. The prevalence of obesity increased in both genders (T. C. Sağlık Bakanlığı, , Temel Sağlık Hizmetleri Genel Müdürlüğü, 2010; T. C. Sağlık Bakanlığı, Türkiye Beslenme ve Sağlık Araştırması, 2011). Unfortunately, obesity rates are the problem of not only Africa, Asia, and the United States but also the world. Considering the low levels of PA typically observed among youth (Ekelund, Tomkinson, & Armstrong, 2011; Hardy et al., 2016) and declining fitness levels of children (Boddy, Fairclough, Hackett, & Stratton, 2012; Tremblay et al., 2010), there is an urgent need to develop and evaluate interventions that promote moderate- to vigorous-intensity physical activity (Kohl & Murray, 2012; WHO, 2011).

Today, children spend a significant part of their time at school (Synder & Dillow, 2012), and schools are the most important places for PA intervention (CDC, 2013; Rink, Hall, & Williams, 2010). However, the PA levels of children are constantly decreasing (Bornstein, Beets, Byun, & McIver, 2011; Konstabel et al., 2014), and

unfortunately, research findings suggest that the majority of students are spending more time in sedentary behaviors (Abbott, Straker, & Mathiassen, 2013; Lou, 2014; Morton, Atkin, Corder, Suhrcke, & Sluijs, 2016).

In this process, schools play a key role and provide a unique opportunity in promoting children's PA and increasing children's daily PA (CDC, 2013; Hills, Dengel, & Lubans, 2015; Janssen & LeBlanc, 2010) because children have to attend school—it is compulsory—and PE is a necessary component of the elementary school curriculum (Motta et al., 2012; T. C. Milli Eğitim Bakanlığı, 2017;). In addition to encouraging students to be active, schools can facilitate increased PA during the school day by providing space, facilities, equipment, and supplies that make participating in activity appealing and by providing organized times and structured physical activities for interested students (CDC, 2013).

With the increasing attention on the PA levels of children in schools (Donnelly & Lambourne, 2011; Gråstén, Watt, Hagger, Jaakkola, & Liukkonen, 2015), factors related to the PA promotion behaviors of teacher are important (Berei, Karp, & Kauffman, 2018; CDC, 2012, 2013; Heidorn & Centeio, 2012). In elementary schools (Grades 1–4) with children aged 7–11, generalist classroom teachers (Hardman, 2008) teach PE.

Classroom teachers are a primary PE contributor (Sherman, Tran, & Alves, 2010), and beyond the possibility of having to teach PE, elementary classroom teachers are called upon to be an important participant in Comprehensive School Physical Activity Programs (CSPAPs; CDC, 2013). However, classroom teacher education programs provide little or no training in PE (Telford et al., 2016) and those who graduate may have low levels of teaching efficacy and a lack of content and pedagogical knowledge in PE (Dyson, 2014; Petrie, 2010; Sinelnikov, Kim, Ward, Curtner-Smith, & Li, 2016). Evidently, generalist classroom teachers are in need of assistance (Miller et al., 2016) and more PE professional development (Miller et al., 2016; Morgan & Hansen, 2007; Sloan, 2010).

While we did review the literature, there was limited research investigating the effect of the programs on the PE and PA efficacy of classroom teachers. Miller et al. (2016) evaluated the efficacy of a professional development intervention in producing changes in PE

teaching practice and PE teaching quality by generalist classroom teachers. They found that intervention was efficacious in improving the quality of PE teaching among the classroom teachers. In an another study, Kulinna, Cothran, and Kloeppel (2011) investigated classroom teachers' self-efficacy changes related to teaching healthy behavior content after participating in workshops. Results of the study showed increased teacher efficacy.

As the role and/or potential of teacher education in preparing CTCs for involvement in CSPAPs has received little investigative attention (Webster, 2011; Webster, Monsma, & Erwin, 2010), and as a review of the literature did not turn up any studies that focused on CTCs and their efficacy of teaching PE, the primary purpose of this study was to determine if professional PETP in PE-related contents (e.g., Teaching PE, Games and Physical Activities, Gymnastics, Educational Games, Track and Field, Foundations Physical Education and Sports) would enhance the PE teaching efficacy of CTCs. So this study carried out a PETP for the CTCs and investigated the effect of the PETP on the PE teaching efficacy of the CTCs.

Relationship Between Classroom Teachers' Physical Education Teaching Efficacy

Classroom teachers who provide instruction in core academic areas such as mathematics, science, reading, writing, and social sciences are also intentionally embedding PA throughout the school day (Dinkel, Schaffer, Snyder, & Lee, 2017). In most elementary schools around the world, classroom teachers, rather than PE specialists, most often have the responsibility for teaching PE (Hardman & Marshall, 2009).

The majority of classroom teachers believe that PE is an important part of the curriculum (DeCorby, Halas, Dixon, Wintrup, & Janzen, 2005). It has been suggested that classroom teachers recognize the importance of increasing PA and are willing to find ways for students to be physically active during normally sedentary classroom activities (Cothran, Kulinna, & Garn, 2010; Heidorn & Centeio, 2012; Parks, Solmon, & Lee, 2007). However, most classroom teachers consider PE a valuable part of the curriculum, yet they find it one of the more difficult subjects to teach (DeCorby et al., 2005), and evidence suggests that classroom teachers also have nega-

tive dispositions relative to teaching PE and PA content (Armour & Duncombe, 2004; Faucette, Nugent, Sallis, & McKenzie, 2002) and are reluctant to implement PA or feel they do not have the instructional autonomy to do so (Cothran et al., 2010; Gately et al., 2013).

Many barriers inhibit teaching PE well (Fletcher, Mandigo, & Kosnik, 2013). These barriers fall into two main categories: *institutional factors* (e.g., professional development, instructional time, opportunities, financial and human resources, class sizes, and facilities and equipment) and *teacher-related factors* (e.g., confidence to teach PE, teacher preparation, and personal school experiences related to PE; Morgan & Hansen, 2007). Classroom teachers who had positive past experiences in school PE and/or sports were more likely to have higher perceived competence in and more favorable attitudes toward teaching physical education (PE; Morgan & Bourke, 2008; Morgan, Bourke, & Thompson, 2001; Webster, Monsma, & Erwin, 2010), and this can affect their efficacy for implementing PE (Parks et al., 2007; Webster, Russ, Vazou, Goh, & Erwin, 2015).

According to the Morgan and Hansen (2007), perceived barriers related to institutional factors that were mostly beyond the classroom teachers' control. However, teacher-related factors may provide the most effective means to improve classroom teachers' programs, because teachers feel that they have more control over these factors (Hargreaves & Fullan, 1992). Based on the results of research cited, teacher-related factors included teachers' self-efficacy to overcome barriers to teaching PE (Faulkner, Reeves, & Chedzoy, 2004; Fletcher et al., 2013).

Based on social cognitive theory, self-efficacy is a person's confidence in his or her capacity to execute behaviors or achieve a specific outcome (Bandura, 1997). Research regarding teacher efficacy has primarily focused on the association with positive teaching behaviors (e.g., trying new instructional ideas and/or better classroom management) and student achievement (Goddard, Hoy, & Hoy, 2004; Ross, 1998). Pan, Chou, Hsu, Li, and Hu (2013) stated that teachers' self-efficacy could have a direct influence on their commitment to teach health and PE curricula in elementary schools. Gorozidis and Papaioannou (2011) found that highly self-efficacious teachers had a positive attitude toward the PE curriculum and intended to continue their current efforts in the future. Additionally, teachers' efficacy

beliefs would seem particularly important to meeting CSPAP goals (Webster, Erwin, & Parks, 2013).

The literature review suggests that teachers' self-efficacy directly and indirectly influences students' satisfaction. Students feel satisfaction when participating in PE activities during school. Efficient classroom teachers provide a quality PE program; this also improves students' willingness to actively participate in PE. Positive and satisfying PE and/or sports participation experiences foster students' physical and mental development as well as significantly motivate the establishment of long-term exercise habits (Chen & Stotlar, 2012). Also, classroom teachers' self-efficacy has a positive effect on learning motivation, learning atmosphere, and learning satisfaction, respectively. Teachers with high self-efficacy may be able to use a variety of methods to stimulate students' motivation and create a quality learning atmosphere, both of which could promote students' satisfaction (Pan, 2014).

The literature shows that the classroom teachers' efficacy in the subject of PE and promotion of PA is important. It has been suggested that during the classroom teachers' training period, the education of the CTCs was insufficient to carry out the courses related to PE and sports (McMullen, Kulinna, & Cothran, 2014; Goh, Hannon, Newton, Webster, Podlog, & Pillow, 2013; Stylianou, Kulinna, & Naiman, 2016). For the lack of training, PETP should be organized for the CTCs to acquire efficacy in teaching PE. A training program was organized for CTCs, and this study tried to find the effect of the PETP on the CTCs. The following research questions were asked:

1. How is the PE teaching efficacy of the CTCs in the control and experimental groups?
2. What are the effects of the PETP on the teaching efficacy of the CTCs?

Method

Research Design

This study used a quasi-experimental design with a pretest–posttest control group. Experimental design can be characterized as a research design that aims to explore causal relationships between variables (Fraenkel & Wallen, 2009). The pretest–posttest control group design is one of the widely used experimental designs. In this design,

participants are measured before and after the experimental procedure in relation to the dependent variable. Because the same people are measured twice on the dependent variable, however, the measurements of the experimental and control groups of different subjects are compared, and in this respect it is irrelevant. Therefore, the pretest–posttest control group pattern can be expressed as a mixed pattern (Howitt & Cramer, 2007). Table 1 shows the experimental pattern used in the research.

Table 1
Experimental Pattern Model Used in Research

Group	Pretest	Experimental process	Posttest
Experimental	$O_{1\,2}$	Implementation of the PETP	$O_{1\,2}$
Control	$O_{1\,2}$		$O_{1\,2}$

The pretest was carried out with the experimental and control groups. For preliminary evidence of PE teaching efficacy to be obtained, the scale was applied as a pretest to the students. At the end of the experimental process, the PE teaching efficacy scale was applied as a posttest to the groups. During the experimental process, the PETP was applied to the CTCs in the experimental group, and those in the control group did not participate in the PETP.

Study Groups

Participants were put in two groups, control and experimental. The experimental group consisted of 12 (50%) male and 12 (50%) female students, who participated in the activity "Physical Education Science Counseling for Classroom Teachers II" and were studying in the classroom teaching programs of 12 different universities in the Aksaray province during the 2016–2017 academic year semester term. Twenty-eight (M_{age} = 20.89 ± 1.333) students were enrolled in the course. Thirty-two (M_{age} = 19.96 ± 1.402) students were enrolled in the control group, 16 (50%) male and 16 (50%) female students attending the Aksaray University Faculty of Education Classroom Teacher Program.

The participants of the study were determined after some work. The experimental group was announced to the target population, CTCs, via social media, teachers, and school management. In total,

240 CTCs applied to the activity via the activity Web page. Based on participant selection criterion (being a freshmen, sophomore, or junior in the classroom teaching departments of universities; age; sexuality; GAP; interest in PE and sport, etc.), 28 were selected.

Both groups were chosen in consideration with the main purpose of the study, "enrolment in classroom teacher educating programs and comparable with regard to all demographic measures and their education." Both groups had the same prior experience with PE or sports participation. It was assumed that control and experimental groups were equal.

Procedure

Data were collected from the CTCs who participated in the "Physical Education Science Counselling for Classroom Teachers II" activity organized within the scope of TUBITAK 2229 scientific activities in February 2017. The activity includes a process for providing CTCs basic knowledge and skills necessary for PE and sports-related courses.

Lessons in the activity fall into three groups: applied lectures, theoretical lectures, and theoretical-applied. Activity continued for 6 days and consisted of a total of 46 hr. Courses started at 8:00 in the morning and continued until 17:00 in the evening. There was also a time for students to rest during and between classes. Each lesson lasted 50 min. Table 2 lists the courses and sample content knowledge.

Theoretical and practical knowledge and skills were taught in this process. This was aimed at increasing the efficiency of the CTCs. The activity courses were given by 11 instructors from different universities who have PhD degrees and are experts in their fields.

The group that participated in the activities organized for the CTCs were evaluated as the experimental group. The group formed for comparison purposes was determined as the control group. The PE teaching efficacy scale and semistructured questions were applied to the experimental group before and after the PETP. The application made before the training was evaluated as the posttest after the pretest training. In addition, the same measuring instrument was applied as a pretest and posttest to the control group on a 3-week basis.

Table 2
Content Knowledge Intervention

Course	Sample content
Applied courses The courses: Games and Physical Activities in Childhood, Gymnastics, Educational Games, Track and Field, Volleyball, Handball, Basketball *Each course is 4 hours*	When we look at the content of these courses, for example, the aim of "Basketball" is to teach the basic knowledge and skills of basic techniques in basketball, basic posture and ball holding, ball driving, passing types, turnstile and shooting techniques, defense and offensive positions, body use and deception techniques. It is also aimed to teach the steps and teaching methods and techniques to be used in the teaching of these techniques.
The courses both theoretically and practically The courses: Special Teaching Methods in Physical Education and Sport, and Current Approaches in Physical Education and Sports Teaching *Each course is 4 hours*	Contents of the courses: for example, "Current Approaches in Physical Education and Sport Teaching" aims for students to gain knowledge and skills related to current teaching models and approaches such as sport education model, tactical games approach, and cooperative learning model, which are used together with the constructivist approach in physical education and sport education.
Theoretical course Foundations of Physical Education and Sports, Sports Education, Sports Injuries and First Aid, Lifelong Sports, and Children and Sports *Each courses is 2 hours*	Contents of the courses: for example, "Child and Sports" aims for students to gain the basic knowledge and skills to make healthy exercise applications in childhood, and also gives basic information about the principles of exercise and exercising in childhood.

Data Collection Tool

The Physical Education Teaching Efficacy Scale (PETES), which was developed by Humphries et al. (2012), was used as the data collection instrument in the research. The PETES was adapted to the Turkish done by Erbaş, Kalemoğlu-Varol, & Ünlü (2011). The scale consists of 35 items and has seven subscales. Table 3 shows the names of the subscales and example items.

Table 3
Names of the Subscales and Example Items

Name of the subscale	Number of items	Sample item
1. Efficacy about PE content knowledge	5	"I know a lot about fitness and I can teach"
2. Efficacy for applying scientific knowledge in teaching PE	4	"I know a lot about fundamental motor skills (manipulative and locomotor) and can teach them effectively"
3. Efficacy about accommodating skill level differences	5	"If one of my students was having trouble with a drill, I know ways to change it to make it easier for them"
4. Efficacy for teaching students with special needs	5	"I know how to effectively teach students with emotional or behavioral problems who are in my PE class"
5. Efficacy about instruction	6	"I can demonstrate and explain a skill/drill so that the class understands what to do"
6. Efficacy for using assessment	5	"I can make up rubrics to assess student learning of skills or game play"
7. Efficacy for using technology	5	"I am aware of technology-based equipment and computer programs for PE, even if I don't have it"

Test–retest method and Cronbach's alpha internal consistency parameters were used in calculating the reliability of the scale. Cronbach's alpha for the internal consistency of the items was calculated and determined as .94 for the scale. Cronbach's alpha for the internal consistency of the subdimensions was calculated as .73 for "Efficacy for physical education content knowledge," .70 for "Efficacy for applying scientific knowledge in teaching PE," .76 for "Efficacy for accommodating skill level differences," .77 for "Efficacy for teaching students with special needs," .82 for "Efficacy about instruction," .76 for "Efficacy for using assessment," and .84 for "Efficacy for using technology." Confirmatory factor analysis was performed for the construct validity of the PETES, and the results demonstrated that the scale preserved that seven-dimension structure as the original form. Finally, it can be concluded that the PETES is a reliable and valid scale that meets research criteria for validity and reliability.

Analysis of Data

Before the techniques for the data analysis in the survey were chosen, the distribution of the data was examined. A Shapiro–Wilk test was performed and the distributions of the data were normal. As a result of the analysis, it was decided that the data did not show normal distribution ($p = .000–.001$; $df = 28$; $p < 0.05$).

Nonparametric tests were decided to be appropriate in the analysis of data in the study. From there, the Wilcoxon signed-rank test determined the difference between the pretest and posttest averages. To examine the practical significance of differences, effect sizes were calculated, as recommended by Cohen (2013). In this regard, Cohen proposed that an effect size of 0.2 represents a small effect; 0.5, a medium effect; and 0.8, a large effect. For all statistical analyses, a probability level of 0.05 or less indicated significance.

Findings

This study included comparisons of the pretest and posttest of PE teaching efficacy of CTCs. The Wilcoxon signed-rank test was performed and the teaching efficacy levels of the CTC in the control group compared. Table 4 and Figure 1 show the results.

Table 4 compares the pretest and posttest of the control group according to PE teaching efficacy. Substantial differences were not

Table 4
PE Teaching Efficacy of CTCs in the Control Group by Pretest–Posttest Results/Values

Variable	Condition	$p^{(\text{Pre vs. Post})}$	Wilcoxon test		ES
			Z	*p*	
Efficacy about PE content knowledge	Pretest	8.15 ± 2.096	-.892[a]	.372	0.07
	Posttest	7.88 ± 2.136			
Efficacy for applying scientific knowledge in teaching PE	Pretest	7.50 ± 1.586	-.073[b]	.942	0
	Posttest	7.50 ± 1.244			
Efficacy about accommodating skill-level differences	Pretest	11.25 ± 2.26	-.402[b]	.688	-0.03
	Posttest	11.38 ± 2.498			
Efficacy for teaching students with special needs	Pretest	10.25 ± 1.665	-1.660[b]	.097	-0.16
	Posttest	10.81 ± 1.874			
Efficacy about instruction	Pretest	15.25 ± 2.502	-.462[b]	.644	-0.08
	Posttest	15.63 ± 1.963			
Efficacy for using assessment	Pretest	11.28 ± 1.955	-.144[a]	.886	0.01
	Posttest	11.25 ± 1.685			
Efficacy for using technology	Pretest	11.78 ± 2.151	-1.520[b]	.128	-0.15
	Posttest	12.28 ± 1.099			
PE teaching efficacy	Pretest	75.47 ± 8.875	-.093[b]	.926	-0.04
	Posttest	76.16 ± 6.773			

Note. ES = effect size.
[a]Small ≥ 0.1. [b]Medium ≥ 0.2. [c]Large ≥ 0.5.

found between pretest and posttest in the PE teaching efficacy scale and its subscales.

In the study, a Wilcoxon signed-rank test compared the teaching efficacy levels of the CTCs in the experimental group. Table 5 and Figure 2 show the results.

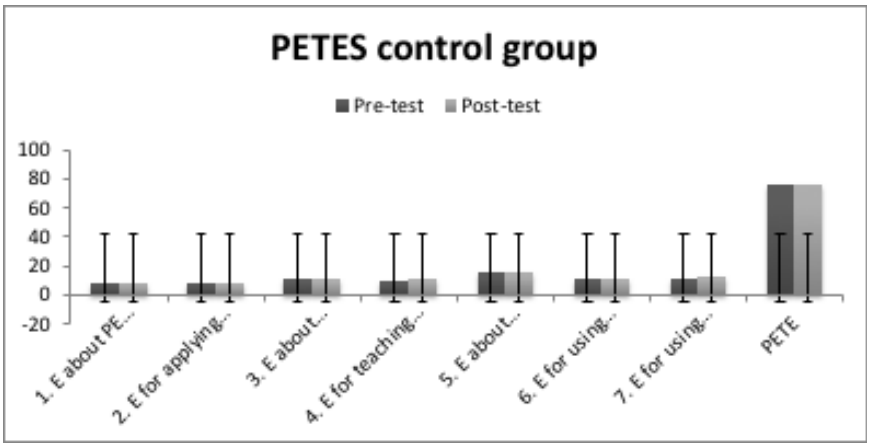

Figure 1. Pretest posttest values of PE teaching efficacy of the control group CTE.

Table 5
Pretest–Posttest Values of Teaching Proficiency of the Experimental Group CTCs

			Wilcoxon test		
Variable	**Condition**	***p*** (Pre vs. Post)	***Z***	***p***	**ES**
Efficacy about PE content knowledge	Pretest Posttest	9.00 ± 1.999 11.54 ± 2.166	-4.042[a]	.000*	-0.52[c]
Efficacy for applying scientific knowledge in teaching PE	Pretest Posttest	8.42 ± 1.744 11.20 ± 1.062	-3.983[a]	.000*	-0.58[c]
Efficacy about accommodating skill-level differences	Pretest Posttest	12.63 ±1.974 14.50 ± .780	-3.642[a]	.000*	-0.53[c]
Efficacy for teaching students with special needs	Pretest Posttest	11.67 ± 1.903 11.70 ± 1.966	-.024[a]	.981	-0.01

Table 5 (cont.)

Variable	Condition	$p^{(\text{Pre vs. Post})}$	Wilcoxon test		
			Z	*p*	ES
Efficacy about instruction	Pretest	16.87 ± 1.361	-2.623[a]	.009*	-0.29[b]
	Posttest	17.54 ± .832			
Efficacy for using assessment	Pretest	12.92 ± 1.717	-2.527[a]	.012*	-0.28[b]
	Posttest	13.79 ± 1.215			
Efficacy for using technology	Pretest	13.17 ± 1.857	-2.305[a]	.021*	-0.34[b]
	Posttest	14.25 ± .989			
PE teaching efficacy	Pretest	84.63 ± 8.816	-4.247[a]	.000*	-0.57[c]
	Posttest	94.54 ± 5.047			

Note. ES = effect size.
[a]Small ≥ 0.1. [b]Medium ≥ 0.2. [c]Large ≥ 0.5.
*p = .05.

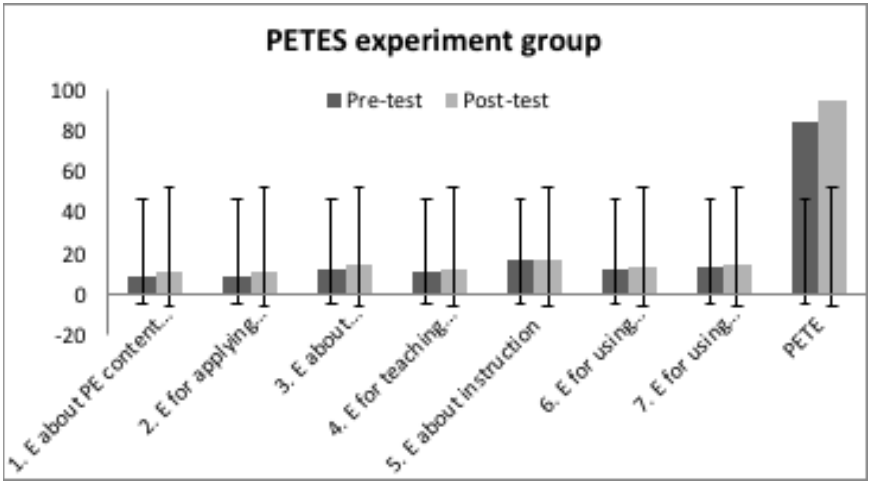

Figure 2. Pretest–posttest values of the PE teaching efficacy of experimental group CTCs.

Table 5 summarizes the effects of the PETP on PE teaching efficacy levels in the experimental group. Substantial differences were found between pretest and posttest in favor of posttest total of PE teaching efficacy (p = .000) and in the subscales of "Efficacy about PE content knowledge" (p = .000), "Efficacy for applying scientific

knowledge in teaching PE" (p = .000), "Efficacy about accommodating skill-level differences" (p = .000), "Efficacy about instruction" (p .009), "Efficacy for using assessment" (p = .012)," and "Efficacy for using technology" (p = .021), whereas no marked changes were observed in the subscale of "Efficacy for teaching students with special needs" (p = .981).

PE teaching efficacy increased significantly in the experimental group between pretest and posttest measurements, with a large effect in general for PE teaching efficacy (ES = 57) and in the subscales of "Efficacy for applying scientific knowledge in teaching PE" (ES = 58), "Efficacy about accommodating skill-level differences" (ES = 53), and "Efficacy about PE content knowledge" (ES = 52); a medium effect for "Efficacy for using technology" (ES = 34), "Efficacy about instruction" (ES = 29), and "Efficacy for using assessment" (ES = 28); and a small effect size for "Efficacy for teaching students with special needs" (ES = 10).

Discussion

This study examined the effectiveness of a PETP organized for CTCs. Pretest and posttest scores of the control and experimental groups were compared and the effect of the applied PETP on PE teaching efficacy of CTCs was examined.

Significant differences were not found between pretest and posttest scores of CTCs in the control group. However, there were significant differences in favor of the posttests in terms of the average scores of CTCs in the experimental group on the general PE teaching efficacy scale and its subscales of "Efficacy about PE content knowledge," "Efficacy for applying scientific knowledge in teaching PE," "Efficacy about accommodating skill level differences," "Efficacy about instruction," "Efficacy for using assessment," and "Efficacy for using technology." This study did not find significant differences in the subscale of "Efficacy for teaching students with special needs." Based on these results, the PE teaching efficacy of CTCs increased.

Participation of students in PE classes in schools (Hallal et al., 2012) plays an important role in increasing the level of PA (Lonsdale et al., 2013) and in the development of basic motor skills (Lubans, Morgan, Cliff, Barnett, & Okely, 2010).

Most educators have a positive perspective of PA and can identify the physical, mental, and academic benefits of PA (Cothran et al.,

2010; Howie, Newman-Norlund, & Pate, 2014; Martin & Murtagh, 2015; Parks et al., 2007; Stylianou et al., 2016). Unless teachers can identify how PA supports academic standards or content areas, they may resist incorporating it into their lessons (Erwin, Beighle, Morgan, & Noland, 2011; Gately et al., 2013; McMullen et al., 2014; Sherman et al., 2010).

Parks et al. (2007) found that the efficacy of classroom teachers was positively correlated with willingness to integrate movement in the classroom. However, the majority of the classroom teachers lack the confidence and competence to implement quality PE programs (Barney & Deutsch, 2009; Miller et al., 2016). They also have low levels of teaching efficacy and content and pedagogical knowledge in PE (Dyson, 2014; Petrie, 2010; Sinelnikov et al., 2016; Goh et al., 2013; Ward & Ayvazo, 2016). Notably, teachers' past experience with integrating classroom PA can affect their efficacy for implementing PA (Parks et al., 2007; Webster et al., 2015). Miller et al. (2016) stated that generalist elementary school teachers need assistance in professional development. Cothran et al. (2010) interviewed classroom teachers and found that those who have positive experiences feel more competent to implement the PE program. Teachers who lack confidence in their ability to understand movement and the use of PA to promote learning may be reluctant to implement PA (Breslin, Morton, & Rudisill, 2008; Parks et al., 2007). It has been found that PE teaching programs organized for CTCs are important for CTCs to gain PE teaching efficacy.

Limitations

This study had several limitations. First, the number of participants was limited, with 56 CTCs, 24 in the experimental group and 32 in the control group. Second, data were collected via the PE teaching efficacy scale, and finally, data were collected for a 1-week PETP. The results show that CTCs need to develop their PE teaching efficacy. In addition, it is thought that classroom teacher education programs should be revised and courses related to PE and sport added. Future studies could use a larger research group, make qualitative inquiries related to the subject, and compare PE teachers and PE teacher candidates contributions to the field.

Conclusions and Recommendations

In childhood, where there are attitudes toward lifelong PE and participation in the sport, there are very important responsibilities for classroom teachers. In the study, it was seen that PE teaching efficacy was positively affected by the teaching program. In classroom teachers' ability to fulfill these responsibilities, the education they received was considered very important. From the results of the research, it is suggested more preservice and in-service training opportunities be offered to increase the qualifications of classroom teachers in PE. It is believed that these effects will persist for the near future.

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