CBÜ Beden Eğitimi ve Spor Bilimleri Dergisi
CBU Journal of Physical Education and Sport Sciences
Volume: 18, Issue: 2, 2023
E-ISSN: 2149-1046
DOI: 10.33459/cbubesbd.1315576
URL: https://dergipark.org.tr/tr/pub/cbubesbd

The Effect of Microteaching on PETE Students' Preferences and Value Perceptions Regarding Teaching Styles*

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Research Article
Received: 16/06/2023 Accepted: 14/10/2023 Published: 31/12/2023

Abstract

The purpose of this study was to determine whether gaining experience through microteaching in an undergraduate course affects PETE students' preferences toward teaching styles and their value perceptions. PETE students (n=31) attending a state university and studying in the 'Physical Education and Sports Teaching' course participated in the study, which was conducted in a one-group pretest-posttest design. In data collection, "Physical Education Teachers' Perceptions of Teaching Styles" instrument was utilized. Wilcoxon signed-rank test was used to analyze the data. When the changes in pre-posttest teaching style preferences were analyzed, it was found that there was a statistically significant increase only in PETE students' preferences for the inclusion style ($p<.05$). In addition, it was determined that there was an increase in their perceptions that the inclusion (fun, learning, and motivation), the guided discovery (learning and motivation), and the command style (learning) were beneficial for students ($p<.05$). In conclusion, it was found that gaining practical experience regarding teaching styles through microteaching affected PETE students' use preferences and value perceptions towards certain teaching styles.
Keywords: Microteaching, PETE students, Spectrum of teaching styles

Mikro Öğretimin Beden Eğitimi Öğretmen Adaylarının Öğretim Stillerine Yönelik Tercihlerine ve Değer Algılarına Etkisi

Öz

Bu çalışmanın amacı, bir lisans dersinde mikro öğretim tekniği aracılığıyla deneyim kazanmanın, beden eğitimi öğretmen adaylarının öğretim stillerine yönelik tercihleri ile değer algılarına etkisi olup olmadığını belirlemektir. Tek grup ön test-son test deseninde yürütülen çalışmaya, bir devlet üniversitesinde öğrenim gören ve "Beden Eğitimi ve Spor Öğretimi" dersine kayıtlı beden eğitimi öğretmen adayları (n=31) katılmıştır. Verilerin toplanmasında, 'Beden Eğitimi Öğretmenleri Öğretim Stilleri Değer Algıları' ölçeğinden yararlanılmıştır. Verilerin analizinde ise Wilcoxon işaretli sıralar testi kullanılmıştır. Ön-son test öğretim stili tercihlerindeki değişmeler incelendiğinde, öğretmen adaylarının yalnızca katılım stiline yönelik tercihlerinde istatistiksel olarak anlamlı düzeyde artış meydana geldiği saptanmıştır ($p<.05$). Ek olarak, katılım (eğlence, öğrenme ve motivasyon), yönlendirilmiş buluş (öğrenme ve motivasyon) ve komut stilinin (öğrenme) öğrenciler için faydalı olduğuna yönelik algılarında artış olduğu tespit edilmiştir ($p<.05$). Sonuç olarak, mikro öğretim tekniği ile öğretim stillerine yönelik uygulama deneyimi kazanmanın beden eğitimi öğretmen adaylarının belirli öğretim stillerine yönelik kullanım tercihlerini ve değer algılarını etkilediği bulunmuştur.
Anahtar Kelimeler: Beden eğitimi öğretmen adayları, Mikro öğretim, Öğretim stilleri yelpazesi

* This study was presented as an oral presentation at the 15th National Sports Sciences Student Congress held at Gazi University on 8-10 May 2023.

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INTRODUCTION

Physical education (PE) lessons are recognized as one of the few subjects in schools where children can develop as whole (Garn & Byra, 2002). These lessons have the responsibility to address all learning domains: Psychomotor, including learning outcomes related to motor skills and fitness; cognitive, involving knowledge, strategies, tactics, and cognitive skills; and affective, such as feelings, values, social behaviors, and attitudes (Rink, 2014). In this perspective, Mosston and Ashworth's (2008) Spectrum of Teaching Styles is a useful pedagogical tool that provides PE teachers with 11 teaching-learning alternatives to achieve educational goals for psychomotor, affective/social and cognitive domains (Byra, 2019; Chatoupis, 2021; Goldberger et al., 2012; Sanchez et al., 2012), and that the use of reproduction and production teaching styles in the Spectrum of Teaching Styles can help PE teachers accomplish various learning outcomes and the standards of the NASPE (Garn & Byra, 2002).

Between 2006 and 2018, a similar emphasis was placed in all national PE curriculum in Türkiye. Accordingly, in order for students to attain the learning outcomes in the curriculum, teachers are advised to make use of teaching styles that are suitable for a particular acquisition. Furthermore, it is stated that the curriculum includes high-level psychomotor, cognitive, and affective learning outcomes, and therefore, both production and reproduction clusters must be utilized (Ministry of National Education (MoNE), 2006; 2013; 2018). There is a demand for the use of student-centered teaching approaches in schools today (Byra et al., 2014; MoNE, 2018). However, the results of studies conducted in several countries have revealed that reproduction cluster styles in general and the practice and the command styles (focused primarily on psychomotor learning) in particular are favored and perceived to be more beneficial in PE classes (Cothran et al, 2005; Curtner-Smith et al., 2001; Jaakkola & Watt, 2011; Kulinna & Cothran, 2003; Salvara & Bironé, 2002; SueSee et al., 2018, 2019; SueSee & Barker, 2019; Syrmpas & Digelidis, 2014; Syrmpas et al., 2016, 2017; Wilkinson et al., 2019; Zeng, 2016). In parallel with the results conducted with participants from various countries, a similar tendency was reported in studies carried out in Türkiye (Cengiz & Serbes, 2014; İnce & Hünük, 2010; Parsak & Saraç, 2019; Saraç & Muştu, 2013; Saraç-Yılmaz et al., 2005; Serbes & Cengiz, 2015; Yıldızer et al., 2018). This situation is contrary to the implementing principles of the national curriculum (MoNE, 2018) regarding the teaching-learning process. Similarly, based on the results of their study, İnce and Hünük (2010) concluded that PE teachers primarily intended to improve sport-specific skills in the lessons and that there was a problem of congruence between the most commonly preferred teaching styles and the objectives of PE lessons.

The fact that PE teachers and physical education teacher education (PETE) program students prefer predominantly teacher-centered approaches for their lessons has been discussed in the relevant literature from several aspects. The first of these can be discussed within the framework of Lawson's Occupational Socialization Theory (Lawson, 1983a; 1983b; 1986). Lawson (1986) defined occupational socialization as any kind of socialization that influences individuals to get into the subject of PE and then is responsible for their perceptions and actions as PE teacher educators and PE teachers. It is suggested that the period prior to PETE, which

Lawson defines as acculturation, is the strongest type of socialization experienced by PE teachers and may have a greater impact than PETE program (Curtner-Smith et al., 2008). According to Moy et al. (2014), it is claimed that what is of primary importance in this socialization is the PETE students' K-12 school experiences, as well as their observations and interactions with PE teachers and coaches while experiencing PE and sports. Curtner-Smith (1999) contended that PE teachers' perceptions of teaching are strongly influenced by the PE lessons they experienced as students (K-12) and that one possible explanation for the more preferred for reproduction teaching styles is that PETE students have formed very strong and stable beliefs about reproduction teaching styles based on their experiences in prior school PE lessons. In this regard, the results of Syrmpas and Digelidis' (2014) study showed that PETE students' teaching style preferences are mostly based on their K-12 experiences in PE. The authors argue that the beliefs formed based on earlier experiences are very powerful and thus quite difficult to restructure during PETE program. Similarly, the results of Syrmpas et al.'s (2017) study showed that PE teachers' prior experiences influence their teaching preferences. Richards et al.'s (2014) review has indicated that those who experienced high-quality PE lessons may be teaching-oriented, whereas those who experienced more traditional PE may be coaching-oriented. Based on the results of the current studies, PE teachers' and PETE students' reliance on the reproduction cluster in general, and the practice and command style in particular, stems from the fact that they have primarily experienced these teaching styles in K-12 lessons and in in-school and out-of-school athletic activities.

Regarding the higher preference for reproduction cluster styles, studies have also reported that PE teachers were apprehensive that they would lose control of their students if they used any teaching way other than direct methods and that they believed that was the most effective way in terms of time management and the most efficient way to deliver their knowledge to students (Cothran & Kulinna, 2008). It was stated that the incentive to keep students under control in PE classes could be another potential interpretation of the relatively low use of production styles (Cothran et al., 2005). Curtner-Smith et al., (2001) also found that keeping students under control was an environmental factor affecting the use of teaching style.

Another possible reason why the command and the practice styles are the most popular teaching styles is that PE teachers prioritize teaching psychomotor skills over social or cognitive ones and hence prefer teaching styles that regard teaching sport-related movement skills (Jaakkola & Watt, 2011). Similarly, Demirhan et al., (2008) reported that the psychomotor-dominant and coaching-oriented teaching of PE lessons may be one of the reasons that prompt teachers to use the command and the practice styles. In a similar vein, İnce and Hünük (2010) noted that PE teachers mostly use the practice and the command styles because they give priority to developing sport-specific abilities in their lessons.

Finally, the lack of understanding and experience of PE teachers and PETE students regarding learning-teaching methods when PETE program stands out as an important factor in determining whether they prefer alternative teaching styles in their lessons. Demirhan et al., (2008) stated that teachers either prefer the teaching styles they are most familiar with or the ones they think they can use more comfortably in their lessons. Furthermore, it has been revealed that PE teachers' perceived level of competency in the use of a particular teaching

style may affect their use of related teaching styles (Syrmpas et al., 2016). The results of Jaakkola and Watt's (2011) study showed that PE teachers who perceived themselves as competent in terms of their ability to employ teaching styles tended to prefer production cluster styles more frequently. Several authors have stated that a lack of knowledge or experience with various teaching styles influences the prefer of those styles. Authors have especially emphasized the lack of knowledge and experience with production cluster styles and asserted that this affects the use of diverse teaching styles (Cothran et al., 2005; Jaakkola & Watt, 2011; Kulinna & Cothran, 2003; Wilkinson et al., 2019). Zeng (2016) suggested that it is challenging for PETE students to alter their beliefs about and preferences for the use of production teaching styles unless they are equally exposed to production teaching styles as well as reproduction. Syrmpas and Digelidis (2014) reported that innovative teaching methods should be adopted by all instructors to provide a learning-teaching context that encourages the use of various teaching styles for PETE students.

In the literature, it has been determined that the use of microteaching is effective in improving the level of understanding and the skills in implementing teaching styles (Balcı & Yanık, 2022). In addition, based on the results of previous studies, it is thought that PETE students' gaining practical skills about various teaching styles during PETE may contribute to their preference for more teaching styles for their lessons in the future, and in addition, gaining experience by practicing or observing each teaching style may lead to changes in their value perceptions regarding teaching styles. From this point of view, the current study attempted to determine whether the use of microteaching affects PETE students' preferences for teaching styles and their value perceptions.

The Spectrum of Teaching Styles

On a worldwide scale, the Spectrum of Teaching Styles (Spectrum) has provided a significant contribution to the pedagogy of PE (Cothran et al., 2005). The Spectrum has served for over 50 years as a framework for teaching PE to K-12 students, designing PETE programs, and conducting studies regarding teaching styles (Byra, 2018). The spectrum advocates a "non-versus" stance. Namely, each teaching style in the Spectrum is considered equally valuable. Each style has the opportunity to attain only specific learning outcomes and developmental effects due to its distinctive structure (Mosston & Ashworth, 2008).

At the center of the Spectrum Theory is the concept that the teaching-learning process consists of a chain of "decision-making". For each teaching episode, there are three sets of decisions that need to be taken (the pre-impact or planning/preparation, the impact or implementation and the post-impact or feedback/assessment). These decisions constitute the structure of a certain teaching style. Depending on the individuals (learners or teachers) who make these decisions, distinct teaching styles have emerged. Each style has its own decision structure, a specific name, and a letter in the alphabet. These are the teaching styles: Command [A], Practice [B], Reciprocal [C], Self-Check [D], Inclusion [E], Guided Discovery [F], Convergent Discovery [G], Divergent Discovery [H], Learner-Designed Individual Program (I.P.) Style [I], Learner Initiated [J], and Self-Teaching [K]. In the A Style of the Spectrum, the learner makes decisions at the minimum level and the teacher at the maximum level in the learning-teaching process. Conversely, in the K Style, the learner makes decisions at the

maximum level and the teacher makes decisions at the minimum level (Mosston & Ashworth, 2008).

Furthermore, according to the Spectrum theory, the 11 teaching styles are divided into two clusters: Reproduction [A-E] and production [F-K] teaching styles. When Styles A-E are used, the purpose of the teaching episode in general is the repetition or reproduction by the learners of the certain concepts and skills presented. The content of the teaching episode is based on the repetition by the learners of the model provided by the teacher and the reduction of mistakes in performance. F-K styles encourage students to discover previously unknowable concepts and skills. In particular, certain styles in this cluster (e.g., H style), the new ideas or actions produced may be unfamiliar even to the teacher. In F-K styles, students engage in cognitive processes such as problem solving, inventing the new, comparing, contrasting, and synthesizing. The classroom climate supports cognitive and emotional differences through patience and tolerance (Mosston & Ashworth, 2008).

Microteaching

Microteaching is defined as a controlled practice system that facilitates focusing on a specific teaching behavior and teaching under controlled conditions (Allen & Eve, 1968). According to another definition, microteaching refers to practices that enable students to teach a group of their peers in order to acquire experience in lesson planning and teaching in method lessons (Bell, 2007). In microteaching, the number of students, teaching skills and teaching time are restricted to simplify the teaching environment (Bilen, 2015). The intention is to provide pre-service teachers with the desired teaching skills by controlling these factors (Çakır, 2000) or to ensure that they focus on teaching skills (Görgen, 2003).

A general microteaching practice refers to a four to twenty-minute teaching practice to a peer group of about three to ten individuals (Allen & Clark, 1967). During the implementation, an observer/supervisor monitors the performance of the pre-service teacher performing the microteaching. During the process, the implementation is not interrupted, but mistakes are noted, and feedback is provided after the practice in order to inform and correct the pre-service teacher. In microteaching practices, the peer group is also permitted to provide feedback. After the teaching practice, feedback is given to the practicing pre-service teacher through the analysis of the teaching video and the assessments of peers and the instructor. The feedback focuses on whether the pre-service teacher exhibits behaviors appropriate to the desired teaching skill in line with the criteria in a checklist (Cruickshank & Metcalf, 1993; Kpanja, 2001). In sum, the microteaching technique consists of the steps of (1) preparing a lesson plan as required, (2) teaching a group of peers in alignment with the lesson plan, (3) providing feedback on the teaching activity, (4) preparing a new lesson plan in consideration of the feedback, (5) re-teaching activity, and (5) providing feedback again (Demirel, 2017).

Purpose of the Study

The study aimed to determine whether the use of microteaching affects PETE students' preferences and value perceptions of teaching styles. In accordance with this purpose, answers to the following questions were addressed:

1) Is there a statistically significant difference in PETE students' preferred teaching styles between pre-test and post-test?

2) Is there a statistically significant difference in PETE students' value perceptions (fun, learning, motivation) of teaching styles between the pre-test and post-test?

METHOD

Study Design

A single-group pretest-posttest design was used in the present study. Measurements relating to the dependent variable are acquired in this design with the same subjects and measuring tools as the pretest before the intervention and the posttest after the intervention (Büyüköztürk et al., 2019; Karasar, 2017). Since the study aimed to determine the effect of microteaching on preferences for teaching styles and value perceptions, a one-group pretest-posttest design was used in the study.

Participants

PETE students enrolled in the "PE and Sports Teaching" course at a state university in the 2022-2023 academic year who had not previously taken a theoretical or practical course on the Spectrum were included in the study (n=31). Convenience sampling was used when choosing the sample group. Table 1 presents details about the participants.

Table 1. Information for PETE students

Variable	Group	Frequency (f)	Percentage (%)
Gender	Male	20	64.5
	Female	11	35.5
Age range	20	15	48.4
	21	10	32.3
	≥22	6	19.4
Athletic background	Non-athlete	2	6.5
	Amateur athlete	23	74.2
	Professional athlete	6	19.4
Total		31	100

As shown in Table 1, 64.5% (n=20) of the PETE students were male, 35.5% (n=11) were female, 48.4% (n=15) were 20 years old, 32.3% (n=10) were 21 years old, and 19.4% (n=6) were 22 years old or older. Furthermore, 74.2% (n=23) of the participants had an amateur sports background (amateur leagues, regional leagues, youth leagues, etc.), 19.4% (n=6) had a professional sports background (first and second leagues, national athletes, etc.), and 6.5% did not have any sports background.

Table 2. Teaching styles experienced by PETE students in K-12 PE lessons

Teaching Styles	Frequency of experience in K-12 PE lessons (Sometimes to Always) f (%)
The Command Style-A	29 (93.5)
The Practice Style-B	17 (54.8)
The Reciprocal Style -C	12 (38.7)
The Inclusion Style-E	10 (32.3)
The Self-Teaching Style-K	6 (19.4)
The Self-Check Style-D	5 (16.1)
The Guided Discovery Style-F	5 (16.1)
The Convergent Discovery Style-G	5 (16.1)
The Divergent Discovery Style-H	5 (16.1)
The Learner Initiated Style-J	5 (16.1)
The Learner Designed I.P. Style-I	3 (9.7)

As shown in Table 2, it was determined that the teaching styles that PETE students stated to be used most by their teachers in K-12 PE lessons were the command (93.5%), the practice (54.8%) and the reciprocal style (38.7%), respectively.

Data Collection Tool

Physical Education Teachers' Perceptions of Teaching Styles: The instrument which was developed by Cothran et al., (2000) and Kulinna and Cothran (2003) and adapted into Turkish by İnce and Hünük (2010) with validity and reliability studies, was used as a data collection tool. The instrument includes 11 distinct scenarios related to 11 different teaching styles. There are 4 items related to each style scenario and these items are evaluated with a 5-point Likert-type scale (1=Never-5=Always). In the first item, PETE students were asked whether they would prefer the relevant teaching style when they become PE teacher or how often they would prefer it (Saraç & Muştu, 2013; Syrmpas & Digelidis, 2014). The second, third and fourth items were aimed at determining PE teachers' (or PETE students') value perceptions of the teaching style (fun, learning, motivation) [*"I think this way of teaching would make class fun for my students"* (Fun). *"I think this way of teaching would help students learn skills and concepts"* (Learning). *"I think this way of teaching would motivate students to learn"* (Motivation)]. İnce and Hünük (2010) reported that the internal consistency (Cronbach's Alpha) of the value perception dimension of each style was between .86 and .95. In this study, the internal consistency values were between .78—.95 for the pre-tests and .76—.91 for the post-tests.

Procedures

In this 14-week study, the value perceptions instrument was applied as a pre-test before the intervention and the theoretical instruction on the Spectrum was carried out in the first five weeks. Accordingly, in the first week of the study, introductory information about the Spectrum such as "non-versus" principle, clusters of cognition, the relationship between objectives-teaching behavior-learning behavior-outcomes (O-T-L-O), decision structure of teaching styles in general and feedback were introduced. In addition, in the first week, information about the descriptive characteristics, objectives, decision structure, implementation and lesson plan

preparation of the command style was given, sample lesson videos related to the command style were presented, and the course was completed by providing information about the current PE Curriculum (MoNE, 2018). In the second-fifth weeks of the study, subjects such as descriptive characteristics of B—K styles, objectives, decision structures, how to implement them and lesson plan preparation were introduced and exemplary lesson videos for the implementation of teaching styles were provided.

The first microteaching implementations for the command, the practice, the reciprocal, the self-check, the inclusion, the guided discovery, the convergent discovery, the divergent discovery, and the learner designed I.P. styles were performed in the 6th-9th weeks of the intervention. The learner initiated and self-teaching styles were not included in the implementation weeks as they are not suitable for the microteaching technique due to their decision structures. During the implementation weeks, an average of eight microteaching practices were completed each week in a manner that at least a PETE student from each teaching style (A—I) performed teaching in conformity with the teaching style.

During the microteaching implementation weeks, each PETE student prepared a lesson plan in accordance with the learning outcomes of MoNE (2018) and the structure of the assigned teaching style and performed approximately 10 minutes of teaching to a peer group in compliance with the plan. After the implementation was completed, each PETE student first evaluated herself/himself for her/his performance in the practice. Then, feedback was provided to the practicing by the peer group and the instructor. Further, each PETE student was provided with a video recording of the microteaching and an evaluation report by the instructor. After the first microteaching practice weeks were completed, the PETE students were requested to prepare a new lesson plan and re-teach in the 10th—13th weeks considering the revisions and suggestions provided to them. In the 14th week of the study, post-test measurements were obtained.

Ethical Approval

The authors adhered to ethical principles at all steps of the study. The required permission for the conduct of the study was obtained from Balıkesir University Social Sciences and Humanities Ethics Commission (Decision No: 2022/06).

Data Analysis

SPSS 26 program was used for data analysis. Before the data analysis, the assumption of normality distribution of the data set required for the implementation of parametric tests was examined through the Shapiro Wilk test. Accordingly, it was determined that the assumption of normal distribution was not satisfied. Descriptive statistics and Wilcoxon signed-rank test were used to analyze the data. In the study, the statistical significance level was taken as $p<.05$.

RESULTS

In this section, the findings obtained from the study are provided. Within the context of the study, the effects of microteaching on preferences for teaching styles and value perceptions (fun, learning, motivation) were examined. The pre-test and post-test results obtained from the sub-dimensions of the value perceptions scale in relation to the study questions determined in accordance with the purpose of the study are given in the following tables.

Table 3. Comparison of PETE students' pre-test and post-test preferences regarding teaching styles with Wilcoxon signed rank test

Style Preferences	Measurements	M ± SD		N	Mean Rank	Sum of Rank	*z*	*Sig.*
The Command	Post-test	3.35 ± .80	Neg.	14	11.00	154.00	1.449	.147
	Pre-test	3.61 ± .84	Pos.	7	11.00	77.00		
			Ties	10				
The Practice	Post-test	3.87 ± .67	Neg.	8	6.00	48.00	-.188	.851
	Pre-test	3.87 ± .67	Pos.	5	8.60	43.00		
			Ties	18				
The Reciprocal	Post-test	3.65 ± .95	Neg.	6	9.50	57.00	-1.625	.104
	Pre-test	3.29 ± .90	Pos.	13	10.23	133.00		
			Ties	12				
The Self-Check	Post-test	2.90 ± 1.01	Neg.	5	10.50	52.50	-.447	.655
	Pre-test	2.81 ± 1.01	Pos.	10	6.75	67.50		
			Ties	16				
The Inclusion	Post-test	3.90 ± .94	Neg.	4	12.50	50.00	-2.147	.032
	Pre-test	3.45 ± .99	Pos.	16	10.00	160.00		
			Ties	11				
The Guided Discovery	Post-test	3.03 ± 1.11	Neg.	9	12.44	112.00	.276	.783
	Pre-test	3.06 ± 1.00	Pos.	11	8.91	98.00		
			Ties	11				
The Convergent Discovery	Post-test	2.77 ± .80	Neg.	10	11.35	113.50	.802	.423
	Pre-test	2.94 ± 1.06	Pos.	9	8.50	76.50		
			Ties	12				
The Divergent Discovery	Post-test	3.26 ± 1.09	Neg.	9	12.39	111.50	-.504	.615
	Pre-test	3.13 ± 1.09	Pos.	13	10.88	141.50		
			Ties	9				
The Learner Designed I.P.	Post-test	2.26 ± 1.03	Neg.	19	15.34	291.50	2.507	.012
	Pre-test	3.03 ± 1.30	Pos.	8	10.81	86.50		
			Ties	4				
The Learner Initiated	Post-test	2.35 ± 1.17	Neg.	16	15.06	241.00	2.162	.031
	Pre-test	2.90 ± 1.19	Pos.	9	9.33	84.00		
			Ties	6				
The Self-Teaching	Post-test	2.35 ± 1.23	Neg.	7	8.50	59.50	-.029	.977
	Pre-test	2.32 ± 1.11	Pos.	8	7.56	60.50		
			Ties	16				

Table 3 shows that there was a significant increase in the preference of PETE students regarding the inclusion style from pre-test to post-test (z=-2.147; p=.032). Whereas there was a decrease in preferences towards the learner designed I.P. (z=2.507; p=.012) and the learner-initiated styles (z=2.162; p=0.031).

Table 4. Comparison of PETE students' pre-test and post-test fun perceptions regarding teaching styles with Wilcoxon signed rank test

Fun Perceptions	Measurements	M ± SD		N	Mean Rank	Sum of Rank	*z*	*Sig.*
	Post-test	2.81 ± .70	Neg.	10	7.85	78.50		
The Command	Pre-test	2.84 ± 1.16	Pos.	7	10.64	74.50	.100	.920
			Ties	14				
	Post-test	3.77 ± .62	Neg.	7	6.43	45.00		
The Practice	Pre-test	3.77 ± .88	Pos.	6	7.67	46.00	-.037	.971
			Ties	18				
	Post-test	3.97 ± .91	Neg.	7	9.21	64.50		
The Reciprocal	Pre-test	3.77 ± .88	Pos.	11	9.68	106.50	-.982	.326
			Ties	13				
	Post-test	2.84 ± .97	Neg.	8	10.38	83.00		
The Self-Check	Pre-test	2.71 ± 1.22	Pos.	11	9.73	107.00	-.503	.615
			Ties	12				
	Post-test	4.13 ± .92	Neg.	2	9.75	19.50		
The Inclusion	Pre-test	3.42 ± 1.06	Pos.	16	9.47	151.50	-2.958	.003
			Ties	13				
	Post-test	3.42 ± 1.03	Neg.	7	12.71	89.00		
The Guided Discovery	Pre-test	2.94 ± 1.00	Pos.	17	12.41	211.00	-1.800	.072
			Ties	7				
	Post-test	3.26 ± 1.03	Neg.	10	11.20	112.00		
The Convergent Discovery	Pre-test	2.97 ± 1.20	Pos.	14	13.43	188.00	-1.135	.256
			Ties	7				
	Post-test	3.52 ± .96	Neg.	4	11.00	44.00		
The Divergent Discovery	Pre-test	3.19 ± 1.01	Pos.	13	8.38	109.00	-1.624	.104
			Ties	14				
	Post-test	3.00 ± 1.03	Neg.	15	14.73	221.00		
The Learner Designed I.P.	Pre-test	3.26 ± 1.34	Pos.	11	11.82	130.00	1.189	.235
			Ties	5				
	Post-test	2.97 ± 1.20	Neg.	12	12.29	147.50		
The Learner Initiated	Pre-test	3.26 ± 1.24	Pos.	9	9.28	83.50	1.164	.245
			Ties	10				
	Post-test	2.94 ± 1.03	Neg.	10	11.20	112.00		
The Self-Teaching	Pre-test	2.94 ± 1.34	Pos.	11	10.82	119.00	-.125	.901
			Ties	10				

According to Table 4, it was identified that there was a meaningful increase in PETE students' perceptions that the inclusion style is a fun teaching style for students from pre-test to post-test (z=-2.958; p=.003).

Table 5. Comparison of pre-test and post-test learning perceptions of PETE students regarding teaching styles with Wilcoxon signed rank test

Learning Perceptions	Measurements	M ± SD		N	Mean Rank	Sum of Rank	*z*	*Sig.*
	Post-test	3.84 ± .86	Neg.	3	7.00	21.00		
The Command	Pre-test	3.45 ± .93	Pos.	12	8.25	99.00	-2.398	.016
			Ties	16				
	Post-test	4.06 ± .81	Neg.	7	8.00	56.00		
The Practice	Pre-test	4.00 ± .73	Pos.	8	8.00	64.00	-.246	.806
			Ties	16				
	Post-test	3.74 ± .82	Neg.	11	12.00	132.00		
The Reciprocal	Pre-test	3.77 ± .80	Pos.	11	11.00	121.00	.194	.846
			Ties	9				
	Post-test	3.32 ± 1.05	Neg.	10	11.10	111.00		
The Self-Check	Pre-test	3.19 ± 1.25	Pos.	12	11.83	142.00	-.533	.594
			Ties	9				
	Post-test	4.00 ± 1.00	Neg.	4	9.63	38.50		
The Inclusion	Pre-test	3.58 ± .96	Pos.	14	9.46	132.50	-2.143	.032
			Ties	13				
	Post-test	3.77 ± .88	Neg.	4	9.00	36.00		
The Guided Discovery	Pre-test	3.39 ± 1.02	Pos.	13	9.00	117.00	-2.024	.043
			Ties	14				
	Post-test	3.42 ± .96	Neg.	7	9.29	65.00		
The Convergent Discovery	Pre-test	3.13 ± 1.23	Pos.	12	10.42	125.00	-1.246	.213
			Ties	12				
	Post-test	3.94 ± .89	Neg.	8	10.13	81.00		
The Divergent Discovery	Pre-test	3.48 ± 1.03	Pos.	15	13.00	195.00	-1.787	.074
			Ties	8				
	Post-test	2.84 ± 1.21	Neg.	15	11.63	174.50		
The Learner Designed I.P.	Pre-test	3.55 ± 1.26	Pos.	5	7.10	35.50	2.643	.008
			Ties	11				
	Post-test	2.94 ± 1.18	Neg.	12	11.58	139.00		
The Learner Initiated	Pre-test	3.26 ± 1.15	Pos.	8	8.88	71.00	1.290	.197
			Ties	11				
	Post-test	3.23 ± 1.15	Neg.	5	10.70	53.50		
The Self-Teaching	Pre-test	2.84 ± 1.27	Pos.	13	9.04	117.50	-1.415	.157
			Ties	13				

Findings from Table 5 show that there was a significant increase in PETE students' perceptions that the command (z=-2.398; p=.016), the inclusion (z=-2.143; p=.032) and the guided discovery styles (z=-2.958; p=.003) were beneficial for students' learning skills and concepts from the pre-test to the post-test. Whereas it was found that there was a considerable decrease in their perceptions that the learner designed I.P. (z=2.643; p=.008) was beneficial in learning.

Table 6. Comparison of PETE students' pre-test and post-test motivation perceptions regarding teaching styles with Wilcoxon signed rank test

Motivation Perceptions	Measurements	M ± SD		N	Mean Rank	Sum of Rank	*z*	*Sig.*
	Post-test	3.19 ± .91	Neg.	10	11.60	116.00		
The Command	Pre-test	3.10 ± 1.19	Pos.	12	11.42	137.00	-.365	.715
			Ties	9				
	Post-test	4.03 ± .75	Neg.	6	7.00	42.00		
The Practice	Pre-test	3.90 ± .70	Pos.	8	7.88	63.00	-.728	.467
			Ties	17				
	Post-test	3.87 ± .85	Neg.	9	10.61	95.50		
The Reciprocal	Pre-test	3.77 ± .76	Pos.	11	10.41	114.50	-.378	.706
			Ties	11				
	Post-test	3.10 ± 1.01	Neg.	5	8.00	40.00		
The Self-Check	Pre-test	2.81 ± 1.17	Pos.	12	9.42	113.00	-1.882	.060
			Ties	14				
	Post-test	3.97 ± 1.11	Neg.	6	9.83	59.00		
The Inclusion	Pre-test	3.48 ± 1.12	Pos.	15	11.47	172.00	-2.021	.043
			Ties	10				
	Post-test	3.71 ± 1.04	Neg.	5	9.20	46.00		
The Guided Discovery	Pre-test	3.23 1.20	Pos.	14	10.29	144.00	-2.070	.038
			Ties	12				
	Post-test	3.23 ± .99	Neg.	9	10.17	91.50		
The Convergent Discovery	Pre-test	2.90 ± 1.22	Pos.	13	12.42	161.50	-1.163	.245
			Ties	9				
	Post-test	3.65 ± 1.08	Neg.	7	8.36	58.50		
The Divergent Discovery	Pre-test	3.35 ± 1.11	Pos.	11	10.23	112.50	-1.230	.219
			Ties	13				
	Post-test	2.94 ± 1.15	Neg.	15	11.90	178.50		
The Learner Designed I.P.	Pre-test	3.42 ± 1.34	Pos.	7	10.64	74.50	1.721	.085
			Ties	9				
	Post-test	3.13 ± 1.34	Neg.	11	13.36	147.00		
The Learner Initiated	Pre-test	3.19 ± .19	Pos.	12	10.75	129.00	.281	.778
			Ties	8				
	Post-test	3.00 ± 1.15	Neg.	7	10.14	71.00		
The Self-Teaching	Pre-test	2.74 ± 1.32	Pos.	13	10.69	139.00	-1.314	.189
			Ties	11				

As shown in Table 6, it was found that there was a considerable increase in PETE students' perceptions that the inclusion (z=-2.021; p=.043) and the guided discovery styles (z=-2.070; p=.038) are beneficial teaching styles in terms of providing motivation for students from pre-test to post-test.

DISCUSSION

It was found that the teaching style used by the PE teachers in the K-12 PE lessons of the PETE students who participated in the study was the command, followed by the practice and the reciprocal styles, respectively. In a study conducted by Cothran et al., (2000) with 438 undergraduate students studying in the United States, it was revealed that the most commonly used teaching styles in K-12 PE lessons were the command and the practice. The results of the latter study carried out by Syrmpas and Digelidis (2014) with 288 PETE students studying in Greece similarly showed that the most frequently experienced teaching styles in K-12 lessons were the command and the practice, respectively. These results revealed that the direct teaching

approaches are dominant in K-12 PE lessons in Türkiye, similar to the results of the studies conducted in the United States and Greece.

Regarding the first sub-problem of the study, it was concluded that there was a meaningful increase in PETE students' use preferences for the inclusion style, while on the other hand, there was a decrease in their use preferences for the learner designed I.P. and the learner-initiated styles. It is assumed that this decrease in the use preferences for the learner designed I.P. style may have resulted from the 10-minute brief implementation time in the microteaching technique. Because, it has been stated that the I.P. style is a time-demanding way of teaching due to its structure and more than one teaching episode or lesson is required to accomplish the objectives of the style (Mosston & Ashworth, 2008). Therefore, it can be speculated that the short 10 minutes of implementation may have caused the I.P. style to be perceived inaccurately by the PETE students. On the other hand, as mentioned before, the PETE students did not perform microteaching practice for the learner-initiated style due to the fact that it was not suitable for the microteaching technique. Nevertheless, there was a considerable decrease in the preferences for this style. It is argued that the reason for this may be that the learner-initiated style was perceived wrongly by the PETE students. In addition, considering the preference order according to the post-test results, the fact that the inclusion style, which goes beyond the command and the practice styles and in which the student's decision-making responsibility is relatively high, is the most preferred teaching style, differs from other studies conducted with PETE students in the literature (Cengiz & Serbes, 2014; Cengiz & Serbes, 2015; Saraç & Muştu, 2013; Syrmpas & Digelidis, 2014; Yıldızer et al., 2018; Zeng, 2016). As a result of the study, it can be considered that gaining practical experience for the inclusion style through the microteaching technique may have been effective in bringing the inclusion style stand out as the most preferred teaching style.

Another sub-problem of the study focused on the changes in value perceptions towards teaching styles. Accordingly, as a consequence of the study, it was found that there was a significant increase in PETE students' perceptions that inclusion style is fun for learners, their perceptions that the command, the inclusion and guided discovery styles are beneficial for learners to learn skills and concepts, and lastly, their perceptions that the inclusion and the guided discovery styles are a teaching style that motivates learners. Another finding was that there was a meaningful decrease in the perceptions that the I.P. style was beneficial in the learning of skills and concepts. Mosston and Ashwort (2008) argued that the focus of the I.P. style is not teaching psychomotor skills. In teaching episodes characterized by the I.P. style, the teacher only determines the general subject matter. Within this subject matter, students attempt to discover, design, and find solutions to the questions or problems themselves. Furthermore, Garn and Byra (2002) reported that the I.P. style is rarely implemented in PE settings, especially from kindergarten to grade six. Likewise, Chatoupis (2018) stated that it is difficult to use this style at the elementary school setting. Author also pointed out that the I.P. style requires students to undertake a very high level of responsibility, hence, the younger children may experience challenges. In this regard, it can be thought that PETE students who experienced teaching styles that focus on psychomotor skill development such as the command and the practice style in their K-12 PE classes may have more psychomotor skills in their views on learning in PE classes. Additionally, as a result of their microteaching experiences, it can be

assumed that they may have thought that this teaching style would be difficult to implement at sub-school grades such as middle school.

This study showed that the use of microteaching technique in gaining experience towards teaching styles may have a partially positive effect on their preferences and value perceptions towards the more learner-centered the inclusion and the guided discovery styles. Several studies indicate that it is difficult for PETE students, particularly those with a "coaching orientation", who have participated in competition-based sports in previous years, and who have not experienced high-quality PE lessons, to adopt production cluster styles during the professional socialization period corresponding to PETE (Curtner-Smith, 1999; Curtner-Smith et al., 2008; Stran & Curtner-Smith, 2009). Within this context, it has been noted that the undergraduate education process often has minimal or no impact on PETE students, especially those with high levels of coaching orientations (Stran & Curtner-Smith, 2009). In the present study, no attempt was made to determine the orientations of PETE students. However, given that the majority of the participants had competitive sport backgrounds and had experienced predominantly reproduction cluster teaching styles (especially the command style) in their K-12 PE classes, it is plausible that the relatively short time in the current study led to slight changes in preferences regarding teaching styles and value perceptions. Zeng (2016) argued that unless PETE students are exposed to production styles to the same extent as they are exposed to reproduction styles, it is difficult to change their beliefs and usage preferences towards production styles. In parallel, Syrmpas and Digelidis (2014) stated that limited exposure to innovative teaching approaches during PETE would hinder the change of PETE students' existing beliefs. Therefore, the length of the practical lessons should be extended and enriched to allow the use of a wider repertoire of teaching styles.

CONCLUSION

In conclusion, it was found that gaining practical experience in teaching styles with microteaching technique may influence PETE students' use preferences and value perceptions towards certain teaching styles, even if at a slight level. As a result of the study, increases were found especially in their preferences for using the inclusion style, which is a student-teacher centered way of teaching, and in their value perceptions (fun, learning, motivation). Furthermore, another result of the present study was the positive changes in PETE students' perceptions that the guided discovery style in the production cluster is beneficial for learning and motivation. On the other hand, it was found as a consequence of the study that although there were increases in both usage preferences and value perceptions for the convergent discovery and the divergent discovery styles in the production cluster, these increases were not at a meaningful level. Another notable conclusion was the significant decrease in the preferences and value perceptions regarding the I.P. style.

SUGGESTIONS

One of the limitations of this study is that it was conducted with a single group experimental design. Therefore, the presence of a control group in future studies will provide a contribution to the validity of the results. In addition, conducting qualitative or mixed design studies can both reveal the experiences of PETE students before enrolling in the PETE program (prior knowledge and beliefs about the profession and PE teaching acquired through the acculturation process) more accurately and provide a more comprehensive understanding of possible changes or resistance to change in their use preferences and value perceptions, and design intervention practices in this regard and be more effective. Another point is that the length of microteaching practices is restricted to 8 weeks. Accordingly, it is suggested that increasing the time allocated for microteaching practices in future studies may contribute to obtaining more effective results regarding usage preferences and value perceptions.

Conflict of Interest: There are no personal or financial conflicts of interest within the scope of the study.

Statement of Contribution of Authors: Study Design-MY, TB; Data Collection-TB; Experimental Treatment-MY, TB; Statistical Analysis- TB; Preparation of the Manuscript, TB; Both authors read and approved the final manuscript.

Ethical Approval

Ethics Committee: Balıkesir University Social Sciences and Humanities Ethics Commission
Date: 16.12.2022
Number/Decision No: 2022/06

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