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PEDAGOGY

Comparison of the Command and Inclusion Styles of Physical Education Lessons to Teach Volleyball in Middle School

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Abstract

This experimental study compared the impact of the command style and inclusion style of physical education lessons on teaching basic volleyball skills to 6th graders during the 2014–2015 academic year. The 100 students in the research group were divided into three groups: control (n = 32), command style (n = 34), and inclusion style (n = 34). A Physical Education and Sport Attitude Scale (PESAS) developed by Demirhan and Altay (2001) and a Volleyball Psychomotor Skills Test (VPST) developed by the researcher were administered to all students in the research group as pretests and posttests. After the pretest scores were recorded, all students participated in volleyball lessons for 2 hr/week over 8 weeks; curriculum units included finger passing, forearm passing, and underhand service. According to the findings, when the PESAS posttest scores were compared, the inclusion style group's skills improvement was greater than that of the command style group and the control group ($p > 0.05$). When the VPST posttests were analyzed, the inclusion style group's finger passing, forearm passing, and underhand service skills scores were statistically higher than those of the command style group and the control group ($p < 0.05$). In summary, students'

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basic volleyball skills and physical education attitude improved more through the inclusion style than through the command style or the traditional teaching methods of the control group.

In learning activities, the most important responsibility no doubt belongs to the teachers. Teachers should convey the skills they want to transfer to students in the most suitable way. Physical education courses provide socialization, health improvement, and skills in sport, too. When the teaching methods encourage active participation, students learn better and faster, enjoy the activities, and show more interest in the course.

The main aim of a physical education teaching program is to contribute to individuals' physical, kinesthetic, emotional, and social progress, and to promote participation in physical activity throughout life. For this aim to be actualized, students should be gradually introduced to new physical activities and should be made aware of their improvement. For this reason, it has been suggested that a constructivist approach that accounts for diverse learning styles should be employed in developing activities (Koçak & Hürmeriç, 2006).

From preschool through middle school, participating in sport and physical education plays an important role in improving the physical, emotional, social, and mental characteristics of students. It is hoped that teachers' support and advisory role helps students to improve movement competence, which helps them to acquire active and healthy lifestyles. At the same time, physical education and sport should also help students improve their thinking, social, and self-management skills. Trying various new types of physical activities and improving movement skills is a priority.

For students in fifth to seventh grade, physical and mental development through physical activity is even more important than developing competitive sports skills, which can be worked on from eighth grade onwards (MEB, 2006). The scientific literature suggests that students in this age group need at least 1 hr/day of physical activity to keep up their health. For this reason, it is important that students develop habits of regular and willing participation in physical activities. From around 11 years old, students should begin to develop specialized movement skills, while developing the main sport-related movement skills between ages of 12 and 14.

The teaching methods used in this study differ from those currently prevalent in physical education. They were developed by Mosston and Ashworth (2001) and include teacher-centered and student-centered approaches. The full spectrum of presentation methods is made up of the command style, practice style, reciprocal style, and self-check methods; the spectrum of invention methods is made up of the inclusion, guided discovery, divergent, individual, learner-initiated, and self-teaching styles (MEB, 2013). This study focuses on the command and inclusion styles. The command style focuses on the relationship between a stimulus provided by the teacher and the instant and direct reaction of the student. All decisions about place, stance, start time, speed and rhythm, stop time, time and distance are taken by the teacher, and the student's movements follow accordingly. The inclusion style is characterized by the student's access to the teaching process and active learning. At the preparation stage of the course, the teacher is active and then during the practice and conclusion stages, the student is active. Considering individual differences, student participation is customized according to level of preparedness so that a positive learning environment is created and success achieved with as many students as possible (Demirhan & Altay, 2001).

Other teaching methods can be described as traditional teaching methods' Some of these methods, which are about cognition, and which may be preferred for some teaching–learning activities, include computed teaching, discussions, panels, opposing panel, symposiums, forums, cluster studies, circle discussions, brain storming, showing projections, case study examination, workshops, seminars, educational plays, flash cards, Q&A, group or team play, field trips, homework, and interviews (MEB, 2006).

The traditional learning method in physical education courses is the expression method. In the expression method, teacher makes all decisions. In the practice part of the course, the students show what they can do and then the teacher provides necessary feedback and corrections as the students practice their skills (Güllü & Korucu, 2005). A lot of students are inclined to seek help from friends to solve problems they encounter during practice, but in a traditional learning environment this is unwelcome by the teacher. Traditional teaching methods encourage competition between students for the

teacher's approval; this competition creates an inhibited rather than supportive learning environment (Salam & Naddaf, 2004). Nowadays different teaching methods have begun to be practiced in physical education courses, and their effectiveness is being tested.

Volleyball is one of the most popular sports in the world, and it includes actions that are extremely rapid and dynamic. For children, the skills of the volleyball include finger and forearm passes and underhand service. The aim of this sport is to send the ball to the other side of the net (Aracı, 2006).

In this study, the command and inclusion styles were tested alongside traditional teaching methods with the aim of evaluating their effectiveness for learning volleyball skills such as the finger pass, forearm pass, and underhand service, and with regard to cognitive, emotional, and movement development.

Method

Participants and Research Setting

The research group was formed from 100 students at the Sivas Center Group middle school during the 2014–2015 year. The control group received physical education lessons according to traditional teaching methods, while the experimental group was subdivided into two groups, one receiving lessons according to the command style and the other according to the inclusion style. The lessons were conducted for 2 hr/week for 8 weeks. Daily lesson plans for the command and inclusion styles were prepared by the researcher and executed by a physical education teacher (teachers trained to use the teaching styles). The effects of the different methods on movement and emotional development were studied at teaching groups.

Procedure

For this study, a pretest–posttest control group experimental model was used. The research was conducted at a state school connected to the Ministry of National Education, whose formal permissions were taken in the 2014–2015 academic year. The goal was to provide a natural course atmosphere, so participants were selected from among students already enrolled in physical education courses (based on volleyball skills and past experiences of playing volleyball). Two groups were formed with unbiased assignment; one

of these was the experimental group and the other was the control group. Pretest measurements were taken before the experiment and posttests afterwards for each group. The students were recruited into the research project so that a broader aim of maximizing educational effectiveness could be fulfilled.

Measures

Demographic data and scale data. Children's demographic information (age, gender, class, etc.) was obtained using a demographic information sheet completed by students, with assistance from research assistants and teachers.

The Physical Education and Sports Attitude Scale (PESAS), which includes 12 positive and 12 negative items, measured emotional aspects of the research. It is formulated based on a 5-point Likert scale with the responses *strongly agree*, *agree*, *undecided*, *disagree*, and *strongly disagree*. Positive items of the PESAS were scored from 5 to 1 beginning with *strongly agree*; negative items of scale were scored from 5 to 1 beginning with *strongly disagree*. The lowest possible score was 24 and the highest was 120. When the scores were averaged, the lowest was 1 and highest was 5. The Cronbach's alpha reliability index was calculated as .93; the criterion validity index was calculated as .83.

Physchomotor tests. During the research, with the aim of measuring skills, a Volleyball Psychomotor Skills Test (VPST), developed by the researcher with consultation from volleyball experts, was administered. While the VPST was being developed, the main volleyball skills for sixth graders were determined; these were making finger and forearm passes toward squares drawn on a wall and serving underhanded toward zones marked at the back of the opposite side of the court. On the advice of the experts, each student was given six tries to make finger and forearm passes and three tries at underhand service. The VPST pretest and posttest were recorded on video and evaluated with reference to other volleyball skills videos, arriving at an equivalent average score.

Data Analysis

Statistical analysis of the results was performed with the SPSS pocket program version 22.00. Descriptive statistical methods and a chi-square test of the data show a normal distribution. Paired samples,

a *t* test, a one-way ANOVA, and Tukey's honest significance test were also applied, and the meaningfulness level was taken as 0.05.

Results

The frequency and means of the sociodemographic characteristics of the students in the control and experimental groups are given in this part of the study. In addition, other statistical assessments for the PESAS and VPST scores are presented in the tables. See Table 1 for a comparison of the pretest and posttest total values of the PESAS.

Table 1
Comparison of Pretest and Posttest Total Values of the PESAS

Group		*M*	*SD*	Result
Control	Total PESAS Pretest	69.18	9.32	$t = 0.61$
	Total PESAS Posttest	70.50	7.77	$p = 0.542$
Command Style	Total PESAS Pretest	69.11	8.84	$t = 0.56$
	Total PESAS Posttest	70.38	8.67	$p = 0.575$
Inclusion Style	Total PESAS Pretest	67.00	4.96	$t = 13.02$
	Total PESAS Posttest	84.38	6.67	$p = 0.001$*

*$p < 0.05$.

When the pretest and posttest scores of the control and experimental groups' PESAS were compared, significant differences were found for the inclusion style group ($p < 0.05$). See Table 2.

Table 2
Comparison of the Control and Experimental Groups' PESAS Pretest and Posttest Scores

Group	*M*	*SD*	Result
PESAS Pretest			
Control (1)	69.18	9.32	$F = 0.82$
Command Style (2)	69.11	8.84	$p = 0.448$
Inclusion Style (3)	67.00	4.96	
Total	68.42	7.90	
PESAS Posttest			
Control (1)	70.50	7.77	
Command Style (2)	70.38	8.67	$F = 36.28$
Inclusion Style (3)	84.38	6.67	$p = 0.001$*
Total	75.18	10.14	3 > 1.2*

*$p < 0.05$.

When the posttest scores of the groups' PESAS were compared, significant differences were found between groups ($p < 0.05$). See Table 3.

Table 3
Comparison by the First Expert of the VPST Pretest and Posttest Scores for the Group's Finger Pass, Forearm Pass, and Underhand Service Skills

Group	First expert - Skills	*M*	*SD*	Result
Control	Finger pass pretest	3.71	1.95	$t = 0.24$
	Finger pass posttest	3.81	1.97	$p = 0.805$
	Forearm pass pretest	2.62	1.38	$t = 0.92$
	Forearm pass posttest	2.84	1.34	$p = 0.362$
	Underhand serve pretest	4.25	1.88	$t = 2.58$
	Underhand serve posttest	3.37	1.60	$p = 0.015$*
Command Style	Finger pass pretest	4.11	2.01	$t = 0.40$
	Finger pass posttest	4.29	1.86	$p = 0.689$
	Forearm pass pretest	3.02	1.24	
	Forearm pass posttest	3.02	1.54	
	Underhand serve pretest	4.26	1.81	$t = 2.29$
	Underhand serve posttest	3.38	1.55	$p = 0.028$*
Inclusion Style	Finger pass pretest	4.55	1.58	$t = 2.25$
	Finger pass posttest	5.35	1.99	$p = 0.035$*
	Forearm pass pretest	3.58	1.30	$t = 3.01$
	Forearm pass posttest	4.61	1.84	$p = 0.005$*
	Underhand serve pretest	3.52	1.41	$t = 6.59$
	Underhand serve posttest	5.23	1.34	$p = 0.001$*

*$p < 0.05$.

When the first expert's VPST pretest and posttest scores for the finger pass and forearm pass skills were compared to those of the control group, the differences were not significant ($p > 0.05$), but a significant difference was found for underhand service ($p < 0.05$).

When the VPST pretest and posttest scores of the command style group were compared for the finger pass and underhand service

skills, a significant difference was found ($p < 0.05$). The mean scores of the forearm pass skills remained unchanged.

When the VPST pretest and posttest scores of the inclusion style group were compared for the finger pass, forearm pass, and underhand service skills, a significant difference was found ($p < 0.05$). See Table 4.

Table 4

Comparison by the Second Expert of the VPST Pretest and Posttest Scores for the Group's Finger Pass, Forearm Pass, and Underhand Service Skills

Group	Second expert - Skills	*M*	*SD*	Result
Control	Finger pass pretest	3.18	1.63	$t = 0.96$
	Finger pass posttest	3.43	1.45	$p = 0.340$
	Forearm pass pretest	2.78	1.31	$t = 1.35$
	Forearm pass posttest	3.06	1.13	$p = 0.184$
	Underhand serve pretest	3.93	1.66	$t = 2.41$
	Underhand serve posttest	3.28	1.52	$p = 0.022$*
Command Style	Finger pass pretest	3.70	1.85	$t = 0.08$
	Finger pass posttest	3.67	1.68	$p = 0.937$
	Forearm pass pretest	3.08	1.23	$t = 0.40$
	Forearm pass posttest	3.00	1.18	$p = 0.687$
	Underhand serve pretest	4.20	1.77	$t = 2.25$
	Underhand serve posttest	3.58	1.41	$p = 0.035$*
Inclusion Style	Finger pass pretest	4.00	1.47	$t = 4.40$
	Finger pass posttest	5.23	1.67	$p = 0.001$*
	Forearm pass pretest	3.58	1.15	$t = 4.49$
	Forearm pass posttest	4.97	1.69	$p = 0.001$*
	Underhand serve pretest	3.64	1.36	$t = 5.45$
	Underhand serve posttest	5.08	1.48	$p = 0.001$*

*$p < 0.05$.

When the second expert's VPST pretest and posttest scores for the finger pass and forearm pass skills were compared to those of the control group, the differences were not significant ($p > 0.05$), but

a significant difference was found ($p < 0.05$) for underhand service skills.

When the VPST pretest and posttest scores of the command style group were compared for the finger pass and forearm pass skills, the differences were not significant ($p > 0.05$), but a significant difference was found for underhand service skills ($p < 0.05$).

When the VPST pretest and posttest scores of the inclusion style group were compared for the finger pass, forearm pass, and underhand service skills, significant differences were found ($p < 0.05$). See Table 5.

Table 5

Comparison by the Third Expert of VPST Pretest and Posttest Scores for the Group's Finger Pass, Forearm Pass, and Underhand Service Skills

Group	Third expert - Skills	*M*	*SD*	Result
Control	Finger pass posttest	3.46	1.62	$t = 0.52$
	Finger pass posttest	3.59	1.49	$p = 0.601$
	Forearm pass posttest	2.96	1.28	$t = 0.97$
	Forearm pass posttest	3.15	1.27	$p = 0.338$
	Underhand serve posttest	3.81	1.55	$t = 1.45$
	Underhand serve posttest	3.40	1.36	$p = 0.157$
Command Style	Finger pass posttest	3.82	1.81	
	Finger pass posttest	3.82	1.24	
	Forearm pass posttest	3.17	1.08	$t = 0.84$
	Forearm pass posttest	3.35	1.32	$p = 0.404$
	Underhand serve posttest	3.61	1.30	$t = 1.95$
	Underhand serve posttest	3.08	1.21	$p = 0.059$
Inclusion Style	Finger pass posttest	3.85	1.32	$t = 5.23$
	Finger pass posttest	5.05	1.47	$p = 0.001^*$
	Forearm pass posttest	3.58	1.25	$t = 4.77$
	Forearm pass posttest	5.00	1.57	$p = 0.001^*$
	Underhand serve posttest	3.41	1.13	$t = 5.93$
	Underhand serve posttest	5.08	1.67	$p = 0.001^*$

$^*p < 0.05$.

When the third expert's VPST pretest and posttest scores for finger pass, forearm pass, and underhand service skills were compared to those of the control group, the differences were not significant ($p > 0.05$).

When the VPST pretest and posttest scores of the command style group were compared for the forearm pass and underhand service skills, the differences were not significant ($p > 0.05$). The mean skills for the finger pass pretest and posttest remained unchanged.

When the VPST pretest and posttest scores of the inclusion style group were compared for the finger pass, forearm pass, and underhand service skills, significant differences were found ($p < 0.05$). See Table 6.

Table 6

Comparison Between Each Group of the VPST Pretest and Posttest Scores for the Finger Pass, Forearm Pass, and Underhand Service Skills

Volleyball skill	Group	*M*	*SD*	Result
Finger Pass Pretest	Control (1)	3.45	1.64	$F = 1.48$
	Command Style (2)	3.88	1.79	$p = 0.232$
	Inclusion Style (3)	4.13	1.36	
Forearm Pass Pretest	Control (1)	2.79	1.14	$F = 4.24$
	Command Style (2)	3.09	1.09	$p = 0.017^*$
	Inclusion Style (3)	3.58	1.12	$3 > 1^*$
Underhand Serve Pretest	Control (1)	4.00	1.55	$F = 1.33$
	Command Style (2)	4.02	1.47	$p = 0.268$
	Inclusion Style (3)	3.52	1.18	
Finger Pass Posttest	Control (1)	3.61	1.56	$F = 9.60$
	Command Style (2)	3.93	1.52	$p = .000^*$
	Inclusion Style (3)	5.21	1.65	$3 > 1.2^*$
Forearm Pass Posttest	Control (1)	3.02	1.11	$F = 20.52$
	Command Style (2)	3.12	1.20	$p = .000^*$
	Inclusion Style (3)	4.86	1.59	$3 > 1.2^*$
Underhand Serve Posttest	Control (1)	3.35	1.38	$F = 19.57$
	Command Style (2)	3.35	1.27	$p = .000^*$
	Inclusion Style (3)	5.13	1.39	$3 > 1.2^*$

$^*p < 0.05$.

According to Table 6, when the finger pass pretest mean scores of the three groups were compared, significant differences were not found ($p > 0.05$). When the finger pass posttest mean scores were compared, the inclusion style group's mean scores were higher than those of the command style and control groups ($p < 0.05$).

When the forearm pass pretest mean scores of the groups were compared, the inclusion style group's mean scores were higher than those of the control group ($p < 0.05$). Also, the inclusion style group's forearm pass posttest mean scores were higher than those of the command style and control groups ($p < 0.05$).

When the underhand service skill pretest mean scores were compared, no significant differences were found between the three groups ($p > 0.05$). The inclusion style group's underhand service skill posttest mean scores were significantly higher than those of the command style and control groups ($p < 0.05$).

Discussion

Like similar research, this study found that the inclusion style was more effective than the command style or traditional teaching methods. Physical education attitudes among students in the inclusion style group increased. This situation can be explained by the fact that the students realize the activities they are interested in and determine the difficulty level.

Doydu, Çelen, and Çoknaz (2013) examined the attitudes of students toward physical education and sports, and determined there is no difference between students who received training via a Sports Education model and those trained through a traditional teaching approach. Bahadır (2011) compared the practice and cooperative learning methods and found that in terms of attitude, both methods equally increased the attitudes and interest of students toward physical education. Güllü & Korucu (2005) reported positive interest and attitudes toward physical education among middle school students. Koçak and Hürmeriç (2006) found that middle school students have positive attitudes toward physical education and sports. Erkmen, Tekin, and Taşğın (2006) stated that students at private primary schools have positive attitudes toward physical education. Balyan, Yerlikaya, and Kiremitçi (2012) found that the attitudes of middle school students toward physical education were not affected by different sporting activities. Byra, Sanchez, and Wallhead (2014) found

that personal preferences and time spent on different sporting activities were significantly higher among those taught via the inclusion style rather than the command or practice styles.

When the VPST pretest and posttest scores of each group were averaged and compared by the experts consulted, meaningful improvement was shown in underhand service skills among the command style group, whose chosen method was repeated drills.

All three experts who evaluated students' pretest and post-test in this study indicated more meaningful improvement in finger pass, forearm pass, and underhand service skills among the inclusion style group relative to other methods. The reason for this is thought to be because the teacher gives the students options based on their interests and level of ability. Salam and Naddaf (2004) in a study on the effects of the individual control method determined that the performance level command and practice methods were more effective than the individual control method in long- and short-application tests.

Alhayek (2004) compared the practice and reciprocal methods of physical education for the case of basic basketball skills and found that the jump shot and dribbling skill tests of those in the practice method group showed greater proportional improvement than those in the reciprocal method group. Chatoupis (2005) compared the efficacy of the practice and inclusion styles among fifth grade students and determined that the students in the inclusion style groups showed greater athletic improvement. This outcome shows a parallelism with our study. According to the each of the three volleyball experts consulted, the students taught with the inclusion style developed volleyball skills at a more meaningful level than those in the command style and control groups. Chatoupis (2008) compared the physical fitness values of fifth grade students taught with the practice and inclusion styles and concluded that both methods elicited more meaningful development than those in the control group. Sunay, Gündüz, and Dolaşır (2004) compared the effects of the command style and the guided discovery method for teaching volleyball technique and found no meaningful differences between them. Griffey (1983) observed that students exposed to the practice style showed greater improvement in the forearm pass than those exposed to the command style. Goldberger and Gerney (1986) determined that the

inclusion style was effective for skills development in students. This result was also valid for our research. After 8 weeks of education, students' basic volleyball skills showed the greatest improvement with the inclusion style. Beckett (1991) also found that the inclusion style was more effective than the practice method at skills development in his study with college students.

Zeng, Leung, Liu, and Bian (2009) compared the effectiveness of the practice, reciprocal, and inclusion styles on the basic volleyball skills development of female college students and found the inclusion style to be the most effective. Karavelioğlu (2012) researched the effect of the cooperative learning method and command style on the football skills development of sportsmen and found the traditional method to be more effective for the development of technical skills such as dribbling, while the cooperative learning method was more effective for skills such as the goal pass and canon ricochet.

Conclusion

The results of this study correspond to those of others designed to compare the effect of various teaching models on psychomotor skills. Much other research on the effect of teaching methods on volleyball skills focuses on the positive effects of student-centric, active learning approaches. Similarly, in our study, the basic volleyball skills of students in the inclusion style group developed at a meaningful level. The most important advantage of the inclusion style was that students determined for themselves the course content and difficulty level from a range of options provided by the teacher. As a result, the number of students who actively participated in physical education exercises was very high. It can be said that these advantages increase student motivation and perpetuate an interest to volleyball.

The students in the inclusion style group of this study showed improvement in their finger pass, forearm pass, and underhand service volleyball skills. The research conclusion is that the most effective method to teach basic volleyball skills to sixth grade students is the inclusion style.

In conclusion, findings of this study add to literature on the roles of styles, compared with traditional physical education, in contributing to children's basic volleyball skills. Especially, inclusion style influenced children's finger pass, forearm pass, and underhand service skills into the higher levels, as seen at follow-up among children.

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