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# The Effects of Different Methods Used in Teaching Basic Volleyball Techniques to Physical Education Teacher Candidates

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*H. Sunay, N. Gündüz & S. Dolasir, (Ankara, Turkey)*

## **Abstract**

The aim of this study was to examine the effects of different teaching methods used in teaching basic volleyball techniques to physical education teacher candidates. Subjects were 20 male and 10 female students in the Physical Education and Sports Department. Subjects were homogeneous, having no previous volleyball experience, and demonstrating no statistical differences in pre-tests of skills.

The students were separated into two groups of 15 students by taking alternate names from the attendance list. Three instructors analyzed each of the skills by direct observation. These basic techniques were taught over a period of 14 weeks: one group was instructed using command style (A) and the other group using guided discovery style (F). At the end of the 14 weeks, post-test data were obtained by evaluation scale. T- test was used to analyze the data.

The results of this study showed that command style has an effective role in teaching volleyball techniques, while guided discovery style has a partially effective role ( $p < .05$ ). According to the results of the analysis done to compare the styles in regards to effectiveness in learning basic volleyball techniques, no statistical differences were found between the two styles.

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## **1 Introduction**

There have been many studies in sports education to determine the varying effectiveness of teaching methods centered either on teachers or on students. Because methods used in teaching basic skills in sports are important, this subject should be researched extensively.

The teaching of learning procedures has been guided by the following terms: teaching models, teaching strategies, teaching styles, teaching methods, teaching behaviors, teaching techniques, etc. Each of these terms offers recommendations about how to structure the teaching/learning interaction. These terms are generally presented as separate and unique guidelines, each unrelated to the other and each in competition with the others (Ashworth, 1998).

The Spectrum of Teaching Styles provides a rational approach to the scientific study of teaching. The Spectrum consists of a continuum of teaching styles derived from a common decision-making model. It is bounded by two landmark styles: Style A, in which the teacher makes all decisions, and continuing to Style H, in which the learner is the sole decision maker. No teaching style is unconditionally better or worse than another because each forges a particular relationship between the learner and the teacher. The content to be learned should be more or less appropriate for a given purpose (Goldberger & Gerney, 1986).

Teaching styles in physical education and sports are command, practice, reciprocal, self check, inclusion, guided discovery and problem solving. The styles of command, practice, reciprocal, self check and inclusion are based on teachers. Unlike these styles, guided discovery and problem-solving styles are student-centered (Mosston & Ashworth, 1986). In this study styles A and F were selected for investigation because they appear to represent the most prevalent kind of teacher- and student-centered styles. Command style (A) is characterized by the teacher making all the decisions. The roles of teachers are to make all the decisions in the pre-impact, impact and post-impact sets. The roles of learners are to perform, to follow and to obey. With this style, objectives of immediate response to a stimuli, efficiency in timing uniformity, conformity and synchronized performance are reached. In guided discovery (F), students are motivated into creative thinking, problem solving, and the concept of self-improvement. It also provides for discovery of environment, solving of problems, elasticity, and adaptation to changing conditions (Harrison & Blakemore, 1992). Today, teaching is not dependent or limited to one material and one teaching style. Rather, various types of teaching materials and presentation methods are developed and presented to educators (Bloom, 1979).

Volleyball is a sport having millions of supporters and sportsmen, and is popular worldwide. Recently, success of volleyball club teams and national teams at international championships has positively affected children's interest in volleyball.

As a result, volleyball has become a core sport of physical education programs in schools in Turkey.

Physical Education and Sports Departments can be instrumental in furthering the expansion of volleyball programs. Development and application of educational programs play an important role for students in these Departments to acquire the necessary educational skills. According to the principles of learning and teaching, teachers who use free thinking, programmatic problem solving and student-centered education are making important contributions to the application process of education, for example the critical thinking framework in the psychomotor domain. Scholars and physical education teachers have explored the possibilities of incorporating critical thinking theory into physical education practice (Chen, 2001).

According to the above information, the purpose of the study was to examine the effect of command style (A) versus guided discovery style (F) on learning success in teaching basic volleyball techniques to physical education teacher candidates. It was hypothesized that style F would be a more effective style than style A in teaching basic volleyball techniques.

## **2 Method**

In this study learners practiced a basic volleyball technique under one of the two styles of teaching: style A (Command Style) and style F (Guided Discovery Style). The purpose was to determine the related effectiveness of the two alternative styles of teaching on the acquisition of basic volleyball techniques.

### **2.1 Sample and Design**

Subjects for this study included 30 students (20 males, 10 females; mean age 21 years) from the Physical Education and Sports Department of Ankara University taking volleyball lessons during the 2000-2001 academic year (their second year). All subjects were informed in advance of the voluntary nature of the study and of its purpose, and their consent to participate was obtained.

None of the subjects had any previous experience with the tasks being taught in this investigation. In fact, there were no statistical differences in the pre-tests to determine skill in basic volleyball techniques (forearm pass, dig pass, serve, spike, block and falling technique).

A modification of an experimental pre-test/post-test design was employed in which the effect of two teaching methods was examined during lessons.

Students were separated into two groups of 15 students each by taking alternate names from the attendance list. Basic volleyball techniques were taught to one of the groups using command style and to the other group using guided discovery style for 14 weeks (video recording was done by the instructors during the lessons and evaluations). Instructors included one volleyball trainer and two teachers.

Lesson plans relating to both command and guided discovery styles were discussed between the instructors, and thereafter specific lesson plans were prepared and applied.

## 2.2 Measures and Analysis

The scale was composed of six parts, each including one primary objective and a varying number of behavioral objectives. The first part related to forearm pass including six behavioral objectives. The second part related to dig pass, including four behavioral objectives. The third part related to serve, including four behavioral objectives. The fourth part related to spike, including five behavioral objectives. The fifth part related to block, including four behavioral objectives. The sixth part related to falling technique, including four behavioral objectives. A questionnaire was administered in which the items were prepared on the basis of a five-point Likert scale: 1: strongly disagree, 2: disagree, 3: neutral, 4: agree, 5: strongly agree.

Each of the skills was analyzed by direct observation with the scale prepared by volleyball trainers and specialists for each technique. The data of pre- and post-test were obtained from these instructors. The technique of intraclass correlation-coefficient was used to obtain reliability of these instructors (Baumgartner & Jackson, 1991). Reliability values were .92 for the first instructor, .94 for the second instructor and .95 for the third. At the end of the 14 weeks, post-test data were obtained by the same evaluation scale as used for pre-test. Because the subjects were homogeneous and had normal distribution, t-test was used to analyze the data.

## 3 Results

Pre-test and post-test results of the group learning basic volleyball techniques by command style are shown in Table 1.

*Table 1: Results of pre-test and post-test of group learning basic volleyball techniques by command style (A)(t-test)*

Variables	N	M	Sd	t value	P
Pre-Test	15	76.13	15.65	.556	.032
Post-Test	15	78.73	6.20		

( $p < .05$ )

As can be seen, command style was effective in teaching basic volleyball techniques ( $p < .05$ ). The results of pre-test and post-test of the group learning basic volleyball techniques by guided discovery style are shown in Table 2.

*Table 2: Results of pre-test and post-test of group learning basic volleyball techniques by guided discovery style (F)(t-test)*

Variables	N	M	Sd	t value	P
Pre-test	15	68	14.22	.819	.000
Post-test	15	73	7.72		

( $p < .05$ )

As can be seen, the guided discovery style was also effective in teaching basic volleyball techniques ( $p < .05$ ).

According to the Tables, both teaching styles had a significant effect on teaching basic volleyball techniques. To compare the two styles with regard to effectiveness, t-test for independent groups was used. The results of these analyses are given in Table 3.

Table 3: Results of t-test for independent groups in regard to effectiveness of the two teaching styles

Variables	N	M	Sd	t value	P
Command Style	15	.40	13.25	.82	.421
Guided Discovery Style	15	-3.14	9.92		

( $p < .05$ )

There were no statistical differences between the two groups as regards effectiveness in teaching basic volleyball techniques.

#### 4 Discussion

In the education process, the most important factor affecting the required quality is preparation and application of a dynamic education program. In this application process, teachers help facilitate free thinking, creativity, and problem solving principles using teacher- and student-centered teaching styles (Chen, 2001). The particular style chosen by teachers plays an important role in teaching effectiveness.

The results of this study showed that command style had an effective role in teaching basic volleyball techniques, while guided discovery style had a partially effective role ( $p < .05$ ). Analysis done to compare the styles in regard to effectiveness demonstrated no statistical difference between the two styles.

Results of studies done to investigate the effectiveness of various teaching styles in the psychomotor domain have also shown no differences among them (Goldberger, Gerney & Chamberlain, 1982; Goldberger & Gerney, 1986; Goldberger, 1991). For example, command and guided discovery styles were compared in teaching golf by Salter and Graham, and no differences between the two teaching styles were found (Silverman, 1991).

Command, reciprocal and inclusion teaching styles were compared in teaching hockey by Goldberger et al. (1982). They found that the three teaching styles have an effective role in teaching motor skills, but there were no statistical differences among these styles in regard to effectiveness. Goldberger and Gerney (1986) and Goldberger (1991) indicated that practice style (B) would be more appropriate for most average aptitude children in class, while teacher style (A) would be a good choice to teach a particular motor task.

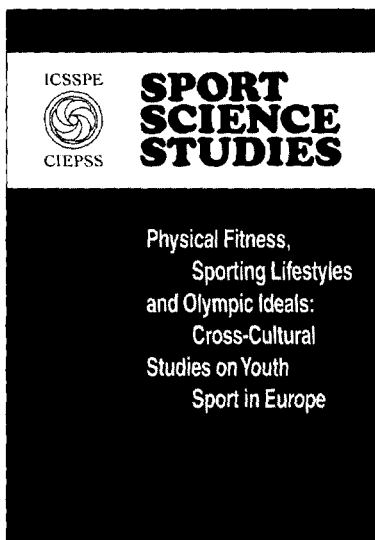
According to the results of these studies, there were no significant differences between teaching styles. Moreover, different sides of any motion can be changed according to the aims. More teaching styles should be used to teach one motion (Goldberger & Gerney, 1986). In other words, using more than one effective teaching style has been a universally accepted rule (Mosston & Ashworth, 1986).

In summary, results of studies done to date have shown no significant relation with effectiveness among teaching styles. For this reason, variables that affect success (teacher attitude, student interaction models, etc.) should be studied further.

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