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## **"The effect of problems solving style on learning the serve skill in volleyball for Students"**

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**Abstract**

The study aims to identify the effect of problems solving style on learning the serve skill in volleyball for students. 24 students from Faculty of Physical Education and Sports Sciences\ University of Babylon-second class participated in our study, they divided in a simple random way into two experimental and control groups and each group included 12 students. An experimental approach used because it suits to the nature of the problem, then the pre and post-tests conducted before and after problems solving style in the main section of the educational unit, where the total of the educational units reached 16 educational units over a period of (8) weeks and by two educational units per week. Whereas, participates in control group implemented their traditional curriculum with two educational units per week. An appropriate statistical method used to collect the data of present study. The study concluded that the problem-solving style had a positive effect in developing the serve skill in volleyball for students.

**Keywords:** problems solving style, serve skill, volleyball.

**Introduction:**

It has become clear that the development of methods of teaching methods is a necessity of modern education and dealing with the material by educational methods for the purpose of providing students with the basic skills required away from the method of indoctrination and information filling, which leads to forgetting information and not following the scientific method in order to have the ability to understand and express (The method which follows by the teacher usually to perform a certain duty cannot be determined, but the teacher must be free to choose the method that achieves his educational intentions and based on his skills and personal characteristics)<sup>(1: 153)</sup>

Some of the skills which are difficult and require following appropriate teaching methods to give the learner great opportunities to learn and absorb a lot of simple or complex motivation skills, including these methods of problem solving



method, which is one of the modern methods which are achieved the positivity for the student through his participation in problem solving and this is given to him playing an active role in the learning process in order to gain educational experiences with a desired effect on his behavior <sup>(2: 326)</sup>, for this reason, the importance of research has emerged to provide a model for the use of a modern educational method which is based on raising a problem that arouses students' interest and appeals to their attention and leads them to think and study on a solution to this problem and find right solutions to reach the best way connected to this solution <sup>(3: 76)</sup>

The skill of attack serving in volleyball is one of the skills that requires a great effort that requires a high level of physical and skill efficiency to reach the performance of motor duties with high efficiency and it is possible to take advantage of the problem-solving method to find solutions to perform the skill in the best way and with good performance.

The problem of the research was manifested by the poor performance of the attack serving skill among students, as it is a relatively difficult skill in the learning process. Therefore, the researcher decided to identify the factors affecting performance and work to develop them through the use of a method that differs from the traditional method used in learning the skill, which is a problem-solving method. And then contribute to achieving the economy by the effort on the body joints of the mechanical movement of the required technical performance and the performance to the best level.

The study aims to identify the effect of problems solving style on learning the serve skill in volleyball for second class students from Faculty of Physical Education and Sports Sciences. In addition, the study hypothesized there are significant differences in learning the attack serving skill in volleyball in the post test and in favor of problem solving method.

## **2. Methodology of the study:**

The experimental approach was used with design equivalents groups, which is a system for testing or comparing two or more groups <sup>(4: 77)</sup> to suit the nature of the research problem to be solved. The community of the study included second class students from Faculty of Physical Education and Sports Sciences\ University of Babylon for a year 2018-2019, the number of them is 30 students and the sample was chosen randomly, and they were divided into control and experimental groups. 12 students per group, the sample rate reached 80% of the research community.

### **2.1 Equal of the Groups:**

The researcher has verified the equivalence of the two groups in terms of weight, height, and age, as well as the equivalence in some elements of physical and skills that influenced skill learning, which was chosen by distributing a questionnaire to the experienced in the field of volleyball in colleges and departments of physical education to determine the elements of physical and skills and determine Selected physical and skill tests. After completing the questionnaire, the elements of physical and professional fitness that had an agreed degree of less than (75%) were excluded, as shown in Table (1).



Table (1) Shows the statistical parameters for height, weight, and age variables and some selected fitness and skill elements for the experimental and control groups

statistical parameters	Experimental Group		Control Group		T-test
	Mean	SD	Mean	SD	
Age\ year	23.66	1.07	23.83	1.26	1.54
Height\ cm	165.75	4.51	168.58	7.68	0.82
Weight\ Kg	61.84	8.44	63.0	3.42	0.32
Medical Ball Throwing\ m	6.68	0.94	6.64	1.26	0.4
Vertical jump Sargent\ cm	36.5	8.40	38.08	8.22	0.24
Wide jump\ m	2.15	16.05	2.16	0.14	0.40
Accurate of attack serving	16.75	2.20	13.08	2.46	1.92

T table value at freedom degree (22) and the significance level of 0.05 is (2.07) and from table (1) it is clear that there are no significant differences between the experimental and control groups in the variables, because the calculated values of T are less than the tabular value.

## 2.2 Tests:

Test name: Technical performance evaluation for attack serving skill:

- Objective of the test: evaluation of the technical performance of the attack serving skill through its apparent form and for its three sections (preparatory, main and final).
- The tools used: legal volleyball court, 3 legal balls, evaluation form.
- Performance specifications: The student performs the test of the attack serving skill from the middle of the specified serve area with (9 m) to the opposite stadium provided that the ball crosses the net (without touching it) trying to "drop it in the opposite half of the stadium, given three attempts for each student to perform the skill.
- Recording: Three evaluators are approved by evaluating the three attempts for each student, and three grades are awarded for each evaluator, knowing that the final evaluation score for each attempt is (10) grades distributed over the three skill sections, after which the best score for each rectifier is chosen and by extracting the arithmetic mean for the best three degrees, the final grade is calculated for each student.

## 2.3 Pilot study:

Pilot study conducted on a sample of (4) students who were not in the research sample on 11/10/2018, to find out the extent to which the auxiliary team could work, the suitability of the tests for the research sample, and how much time it took for each test.

## 2.4 Teaching Program:

The researcher with (teacher of the syllabus) taught the control and experimental groups with unifying the content and time in all parts of the lesson except for the educational part of the attack serving skill, as teaching in experimental group (a) was done in a problem-solving method that depends on the creativity of the student, the teacher raises a question about the skill that he considers as a problem



and the student has to devise new methods to reach the best performance of the skill and the teaching is taught to the control group using the normal method.

The teacher begins by explaining the correct way of performing each part of the skill with a model of skill presented by the teacher or the designated student and then asks students to perform the skill and repeat it according to the teacher's directions so that the student can perform good and proper skill.

Preparing and planning the educational unit using the problem-solving method, the researcher was guided when planning the educational unit with a problem-solving method, the steps and important aspects that make up the lesson with this method which he refers to<sup>(2: 59)</sup>.

For designing the problem, it will be as follows:

- Interesting: raising a question (what are the possibilities that the student can reach the stage of attack serving).
- The mediator: The student performs the attack serving in a sequence to reach the final movement.
- Response: design and performance of the skill by the student.
- Preparing the educational unit in the graduated (regular) method, where the researcher considered that the technical steps of the parts of the skill under discussion are fixed for the two teaching methods and the difference is only in how they are dealt with according to the characteristics of each method, as the lesson was prepared in the graduated (regular) method as followed in the rest of the lessons.

The main experiment with problem solving method started on 15/11/2018 and lasted for eight weeks with two educational units each week, bringing the total of the units to 16 educational units.

## 2.5 Post-tests:

The post-tests conducted on 16/1/2019.

## 2.6 Statistical analysis:<sup>(4: 102) (5: 28)</sup>

1. Arithmetic mean.
2. Standard deviation.
3. Test (t) for independent samples.
4. Test (t) for correlated samples.

## 3. Results and discussion:

### 3.1 View and analyze the results of the pre and post-tests, and the difference between them for the two research groups.

Table (2) arithmetic mean, standard deviations of attack serving skill, calculated and tabulated T-value, and significance of differences between the pre and post-tests of the control group

Skill	Unit of measurement	Pre-test		Post-test		Calculated T	Tabulated T
		M	SD	M	SD		
Attack serving	degree	13.08	2.46	14.03	2.65	2.96	2.23



Table (3) arithmetic mean, standard deviations of attack serving skill, calculated and tabulated T-value, and significance of differences between the pre and post-tests of the experimental group

Skill	Unit of measurement	Pre-test		Post-test		Calculated T	Tabulated T
		M	SD	M	SD		
<b>Attack serving</b>	degree	16.05	2.62	17.10	2.37	3.28	2.23

Through tables (2,3), we see that the differences were significant between the pre and post-tests in the attack serving skill of both research groups, and the researcher attributes it to the effectiveness of the educational programs used, whether for the control group that used the prepared program that included the traditional (general) method or the experimental group used the prepared program that included a problem-solving method to teach students the attack serving skill.

The progress achieved by the two groups after they implemented the two teaching programs for the purpose of developing the skill covered by the research indicates that these two programs, which took (8) weeks by two teaching units per week, had a positive impact on the level of development of the skill and physical and motor abilities that were taught in a studied and graduated manner in the difficulty. In addition, the importance of continuity in training and perseverance in the implementation of the two programs and the concentration of students and their desire to learn this skill as one of the most important skills that distinguish the players in the game of volleyball.

Mohamad Hassan (1988) said that the kinetic performance of the skill is fixed in the exact form in order to reach the semi-automatic stage, and this can be done through repetition and the increase in the number of times to perform the entire movement under constant conditions. (6: 85)

### 3.1 View and analyze the results of the post-tests for the two research groups.

Table (4) shows arithmetic mean, standard deviations of attack serving skill, calculated and tabulated (T) value and significance of differences between the control and experimental groups in the post test

Skill	Unit of measurement	Control Group		Experimental Group		Calculated T	Tabulated T
		M	SD	M	SD		
<b>Attack serving</b>	degree	14.03	2.65	17.10	2.37	* 4.14	2.07

Despite the significant progress achieved by the control and experimental groups in the post test when compared to the pre-test, which was shown in the two tables (2 and 3), and when compared to the post test in the attack serving skill between the two control groups that used the traditional method of teaching the skill and the experimental group that used the problem-solving method, the statistical differences were significant and in favor of the experimental group.

This result is explained by the researcher to the effectiveness of the problem-solving method in teaching the attack serving of students with volleyball game more than the traditional method as one of the successful teaching methods used in





teaching many skills and games in order to reach a better performance and that the student relies on himself to invent many movements which leads him to perform the best basic skill. <sup>(2: 66)</sup> found that students' attempts to discover alternatives to recover their previous experiences in designing new movements means starting with ramified production for the intellectual process to solve the problem and trying to perform it. However, it must be noted here that changing the method is also important in teaching skills, especially if this method is studied as is the case in the problem-solving method that is characterized by asking questions or problems by students and finding solutions to them by the teacher to be practical alternatives to typical performance in the application of skill parts.

Mohamad Hassan (1988) agreed with this results when he said that analysis and depth in performance mastery of the skill, but its performance quickly and automatically under variable conditions and in a different way commensurate with the conditions of competition to help the player to smooth or easy abstinence performance, as some prefer to be called a streamlined performance. Moreover, Abu Jaw (2000) confirmed that new methods help the student to link new information with previous experiences that raise the information the learner needs in understanding the skill. <sup>(6: 87)</sup>

#### **4. Conclusions and Recommendations:**

##### **4.1 Conclusions:**

1. Teaching in a problem-solving method has a positive effect on learning the attack serving skill of the research sample.
2. The problem-solving method was more effective than the gradual (usual) method to improve the skill of the research sample.

##### **4.2 Recommendations:**

1. Emphasizing the use of a problem-solving method in teaching students of colleges and departments of physical education & sports sciences.
2. The necessity of using problem solving method in many skills of volleyball.
3. Conducting a similar study on other sports.

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