Effect of an Educational Curriculum Using Overlapping Waves Strategy in Learning the Serving Skill among Tennis Players Aged 10 to 12 years

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Abstract

Tennis is one of the important individual games that require coaches to raise the skill and physical level of the players. The strategy of overlapping waves focuses on the interactions and matters that occur in the mind, the environment and the field as an indication of the harmony of these components in a cognitive strand which represents the cognitive performance of the learner. Serve is one of the most difficult skills in the game of tennis. New methods and strategies are being tried in an attempt to arouse enthusiasm and motivation in players and one of these methods is an overlapping waves strategy. Preparing an educational curriculum using overlapping waves strategy to learn the skill of serve for tennis players aged 10 to 12 years old . Knowing the effect of the educational curriculum using the overlapping waves strategy for players aged 10 to 12 years.Results reveals the equivalence of the two groups in serving variable. The results of the experimental and control groups t displayed that he calculated t value, it reached (2,319), and the true significance reached (0.043), indicating the presence of significant differences in the experimental group. We conclude that here is a clear improvement in learning the skill of serving in the experimental and control groups in the pre-tests and the post-tests and in favor of the post-test.

Key words :Tennis,Overlapping waves strayrgy,Serve ,skill learning,Educational curriculum

Introduction

Tennis is one of the important individual games that require coaches to raise the skill and physical level of the players, as most coaches focus on the skill and physical side of the traditional methods used. The strategy of overlapping waves focuses on the interactions and matters that occur in the mind, the environment and the field as an indication of the harmony of these components in a cognitive strand which represents the cognitive performance of the learner. The author of this strategy is Seigler. He believes that learners use a series of cognitive processes that interact and harmonize in one chain in order to be able to solve a specific problem, or expand information and achieve cognitive goals[1]. This

strategy came with the assumption that learners who think cannot limit their thinking to one wave, because the cognitive wave is in a state of continuous change and development, and the mind is the function of permanent thinking through a series of processes by which the learner can acquire cognitive waves[2]

Problem statement

Serve is one of the most difficult skills in the game of tennis, as it requires a high skill. Based on the field observation of the researcher on the tennis court, the presence of weak serve is clear among tennis players as most of the coaches focus on the traditional methods used in education. New methods and strategies are being tried in an attempt to arouse enthusiasm and motivation in players and one of these methods is an overlapping waves strategy.

Objectives:

Preparing an educational curriculum using overlapping waves strategy to learn the skill of serve for tennis players aged 10 to 12 years old . Knowing the effect of the educational curriculum using the overlapping waves strategy for players aged 10 to 12 years.

Research hypothesis

The educational curriculum using the strategy of overlapping waves has a positive effect on learning the skill of serve for tennis players aged10-12 years old.

Research areas

 Human field: -Jadriya Academy players .

Spatial domain: Al Jadriya tennis court.

Time frame: for the period from 5/3/2020 to 6/29/2020

Theoretical studies

The serving skill of the game of tennis is one of the most important skills and an important characteristic of a good player. Serving is an important skill in offensive play and striking power in play   tennis[3].A good player who has a strong and accurate serving has a great chance of winning the match. The performance of the service well leads to an increase in the player's chance of

winning the match with the least amount of physical effort, in addition to affecting the morale of the opponent player during the match[4].

The serving kick is one of the most difficult shots because it requires great control and mastery in order for the sender to be able to execute it. It is not possible to start scoring points until after this serve has been performed. For successful serving , the steering factors, speed and rotation of the ball must play an important role in the performance of this skill[5] .

There are three main types of serving in tennis

1- Flat serve
2- Twist Serve

3-Slice Serve[6].

Research Methodology

The experimental method was used in this study due its suitability to the nature and problem of this research. The experimental design was performed with equivalent groups, the experimental group and the control group with pre and post test.

Community and sample research

Twelve players from the Jadriya Tennis Academy were chosen, their ages ranged from10-12 years. The players were divided into two groups: an experimental group and a control group with six players for each group.

Sample homogeneity

To achieve homogeneous sampling , several procedures was carried out to regulate the variables despite the fact that the selected sample was of the same age. These procedures were performed also to prevent influences that may affect the results of the experiment in terms of the individual differences among players . Therefore, the statistical means mediated by the SPSS represented by the mean Arithmetic, standard deviation, median, and skew coefficient for the variables of age, height and weight to know the reality of homogeneity or notwere used as shown in Table (1).

Table1:The homogeneity of the sample individuals in age, height and weight.

Statistical variables	Arithmetic mean	Standard deviation	Median	Coefficient of skewness
Age	12.91	0.79	13.00	0.10

Length	1.52	0.11	1.50	0.19
Weight	43.16	11.62	39.00	0.25

As shown in Table (1), the values of coefficient of skewness
for the length and weight variables were less than (+ 1), and this indicates the
homogeneity of the study sample.

Equivalence of the two study groups

In order to reveal the equivalence of the two studied groups (control and
experimental) in the investigatedvariables, the arithmetic mean and standard
deviation of the individuals of the two groups were calculated for the serve
variable, as shown in Table 2.

Table 2: Equivalence of the two studied groups (control and experimental) in
the investigated variable Note: "The tabular t value with a level of significance
(0.05) and a degree of freedom (38) is (2.42).

Statistical variables	unit of measurement	experimental group		control group		Calculate t value	P value	Significa-nce
		Arithmetic mean	standard deviation	Arithmetic mean	standard deviation			
Serve	Degree	4.750	0.967	4.625	0.944	0.414 -	0.681	Non - significane

Table (2) shows that the significance levels of the serve variable are greater
than (0.05), indicating that there are no significant differences between the two
groups in this variable, and this reveals the equivalence of the two groups in the
studied variable

Skill tests

Test name: White Test

The aim of the test: to measure the accuracy of the serving.

Results of White test

Table (3) :Arithmetic mean, standard deviation, calculated (t) value, and the
significance of the differences in the pre and post test for the control group.

Test	Pretest		Post test				Calculate t value	P value	Significa-nce
	Arithmetic mean	standard deviation	Arithmetic mean	standard deviation					

Serve	15.33	3.723	18.83	2.316	3,5	2.81	3.05	0,028	Significa-nt

Table 3 shows the results of the control group in the pre and post tests. In serving test, the value of the arithmetic mean in the pre test was (15.33), the standard deviation was (3.723), and in the post test the arithmetic mean was (18.83) . The value of the standard deviation is (2.316), while the calculated t value reached (3.050), and the true significance reached (0.028), which indicates the significant differences in the post test.

Table 4: the arithmetic mean, standard deviation, calculated (t) value, and the significance of the differences in the pre and post test of the experimental group.

Test	Pretest		Post test				Calculate t value	P value	Significa-nce
	Arithmetic mean	standard deviation	Arithmetic mean	standard deviation					
Serve	17	2.283	23	2.741	6	2.607	5.636	0,002	Significa-nt

Table 4 shows the results of the experimental group in the pre and post tests. In the serving test, the value of the arithmetic mean in the pre test was (17), the standard deviation was (2,381), In the post test it was the arithmetic mean (23) and the value of the standard deviation (2,741), while the calculated t value is (5,636), and the true significance reached (0,002), which indicates the significant differences in the post test, the calculated (6,445) and the true significance reached (0.001), which indicates the presence of significant differences in the post-test.

Presentation and analysis of the results of the experimental and control groups

Table 5 : The results of the experimental and control groups.

Statistical variables	experimental group		control group		Calculate t value	P value	Significa-nce
	Arithmetic mean	standard deviation	Arithmetic mean	standard deviation			
Serve	23	2.741	18.83	2.316	2.319	0.043	significant

Table 5 reveals the results of the experimental group of the serving test, the value of the arithmetic mean reached (23), the standard deviation was (2,741while in the

control group the arithmetic mean was (18.83) and the value of the standard deviation (2,316) . The calculated t value, it reached (2,319), and the true significance reached (0.043), indicating the presence of significant differences in the experimental group.

Conclusions and recommendations

Conclusions: According to the results of this study we conclude: 1- There is a clear improvement in learning the skill of serving in the experimental and control groups in the pre-tests and the post-tests and in favor of the post-test.
2- The experimental group that learned according to the strategy of overlapping waves was superior to the control group that used the strategy used in the post-test in learning the skill of serving.

Recommendations:

Based on the findings of this study, we recommendate:
1- Use of the overlapping waves strategy in learning the skill of serving for tennis players aged 10 to 12 years.
2- Adopting the multiplicity of modern means of learning in all its forms, as it creates suspense and increases the motivation of learners towards the educational process.

Conflicts of Interest :

 The authors declare complete freedom of any issue   concerning conflict of interests   related to this study.
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