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The Effectiveness of (Think - Pair - Share) Strategy, in Learning Forehand Drive Skill in Table Tennis for Beginners

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Abstract

The research aims at knowing the effectiveness of applying (think-pair-share) strategy to learn forehand drive skill in table tennis for beginners (9-12) years. Experimental approach was the approved approach in this paper, Study has been applied to (40) children as a sample (the sample was taken from Smoha Youth Center were selected in deliberate manner, they were divided into two equal groups each of them is (20) child, one of the two samples subjected to (think- pair- share) strategy and called the experimental group, the other sample subjected to traditional method in learning forehand drive skill in table tennis and called the control group. Researchers used the Statistical processors (SMA, Standard Deviation, (T) test for the significance of differences, Upper and lower quadrants, the correlation coefficient, Ratio improvement, Convolution coefficient, Splaying coefficient). the study obtained results has shown that, using either (Think-pair-share) suggested strategy or the traditional method leaves a positive impact in learning forehead drive in table tennis for children (9-12) years, (Think-pair-share) suggested strategy is more positive than the traditional method in learning forehand drive in table tennis for children (9-12) years.

The two researchers recommended the following:

To apply (Think-pair-share) strategy to teach the forehand drives in table tennis for children (9-12) years.

To apply (Think-pair-share) strategy to teach the other skills of table tennis for the children (9-12) years.

Interest in the preparation of physical education teachers to use different methods, strategies and modern teaching methods to make the educational environment more positive in helping to accelerate learning process for children

Keywords: *(Think - Pair - share) strategy - Table tennis*

Research Problem and Its Significance

The time in which we live characterized by its enormous scientific and technological revolution, It enfolds many changes in various fields of life, perhaps the most prominent one is to rely on the human mind more than ever before, as a result of these changes, it was necessary to respond to them through developing all kinds and sizes of community's organizations, the educational institutions in any society is the one in charge to achieve development to keep pace with the nature of our time and to respond to shifts that encompass various areas of life.

Many Arab and international conferences have been held to develop the curriculums and teaching methods and to prepare a teacher who is capable to accomplish his renewable, multiple roles in the view of contemporary developments to suit the needs of the twentieth century student.

It is clear from the multiplicity of teaching methods in physical education there is no specific style contributes to the integrated education, efficiency of the teacher appears in continually offer the new knowledge with awareness of the different ways that makes the learner more interactive and positive, not just a receiver. Where each learner can learn according to his abilities, willingness, and in the period that suits him, taking into account the learner's motivations, inclinations and needs (2:91) (3: 118)

There are many and varied forms of cooperative learning, but all these forms share with each other to provide an opportunity for learners to work together, where small heterogeneous groups of students are formed so that everyone involved in achieving a particular educational

goal through cooperation among themselves and through joint decisions, thus cooperative learning process aims at re-motivation of students, leading to raise achievement and performance level. (8:67) (12:35)

(Think-Pair-share) strategy is considered one of cooperative learning active strategies that rely on making learner on the focus of the educational process. Since this strategy used to activate the previous knowledge that learners already have, also it provides many opportunities to them to realize their surroundings in order to understand their world by using communication skills or to make a reaction about a problem. After individually thinking and meditation for some time, each pair of learners discuss their ideas to solve the problem together, then participate another pair of students in their discussions about the same idea and record their findings as a group. That is to say that the group has a unified thinking to solve the problem rose. (13:132) (14:102) (26)

(Think – pair – share) strategy has logical consecutive as it depends on several stages so as not to start step, without the completion of the previous step, i.e. do not start (pairing), unless the step (thinking) is over, the step (share) does not start, yet the end of the step (pairing). (1:104) (25)

Many researchers have made studies on that strategy in different areas, studies that have been applied, (think – pair – share) strategy which proved its effectiveness in achieving the objectives of each study.

Including Nadia Lutf Alah study (2015) (18), Mohammed Hamada (2014) (17) in mathematics, the study of Mahmoud Ahmad (2013) (14) in geometry, and the study of Sleim Abou Ghali (2011) (20) in Science, the study of Ibrahim Ahmed (2008) (10) in Sports, the study of Ebtesam Ezz El Deen (2008) (6) in Sports.

Through practical experience of the two researchers in the field of sports, and in the field of tennis games in general and table tennis in particular. Since one of the two researchers is working as technical director for the activity of table tennis at Smouha Youth Center in Alexandria and the second; is supervisor for the same activity in the same place, the two researchers, through their work in table tennis Academy and by being the teachers for children enrolled in the sport of table tennis Academy inside the center from (1998) until now, they have noticed significant decline in the performance of table tennis skills level of the trainers during that period, in spite of the great effort of the coaches to follow the hierarchy while teaching skills - bearing in mind that in such age not a few number of children are learning table tennis- the two researchers returned this decline in the level of skills to a feeling of children bored and dispersion mental as a result of using traditional learning methods and lack of use of modern teaching methods in both teaching and learning processes which have an effective impact in stimulating the mind, raising the efficiency of senses, increase focus and then higher level of skill performance occurs.

Ayman Abdel-Fattah (1999) and Larry (1999) and Ellen Wdee and Salwa Fekry (2002) all agreed that table tennis sport begins with learning forehand drive and backhand drive as corner stones for this sport. These skills known as strokes aim at filling the blank spaces on the table tennis. So the forehand drive and the backhand drive must be taught and enhanced for all players and for beginners in particular. (7: 117,118) (22:74) (4:44)

In reference to previous researches and studies relevant to the subject, such as Mohammed Abdullah study (2001) (15), Mohammed Abdullah (2005) (16), Ibrahim Abdul Ghani (2007) (9), Basma Mubarak's study (2013) (5) and Kawa Shaukat's study (2014) (11) it became clear that most of studies focus on the development of the educational process by using different teaching methods in addition to sample difference for each study, to the knowledge of the two researchers, there are no study used (Think - Pair - Share) strategy yet, although it has proven its effectiveness in the educational process in some previous researches. Several researches recommendations have emphasized on the importance of employing such strategy in various sports activities that includes table tennis. The matter that induces the two researchers to prepare this paper to apply (Think – Pair – Share) strategy, know its effect in learning forehand drive in table tennis for beginners (9-12 years) in an attempt to raise the level of skill performance for that age; which is considered the fundamental basis of learning, discovery and formation of talented sports teams in the future.

The Research Aim

The research aims to applying (Think – Pair – Share) strategy to know its effect on learning forehand drive in table tennis for beginners (9-12 years).

Research Hypotheses

1- There are statistically significant differences between the two measurements (pre & post) taken for the experimental group, in favor of the (post) measurement while learning the skill of forehand drive in table tennis for beginners (9-12 years).

2- There are statistically significant differences between the two (pre & post) measurements taken for the control group, in favor of the (post) measurement while learning

the skill of forehand drive in table tennis for beginners (9-12 years).

3- both control sample and experimental sample, in favor of the experimental group There are statistically significant differences between the (post) measurements for while learning the skill of forehand drive in table tennis.

4- There are significant differences between the experimental and control groups for the experimental group in evaluating the performance level of skill to the skill of forehand drive in table tennis.

Research procedures

Research approach

Experimental approach was the approved approach in this paper, by using the experimental design consists of two groups, one is experimental and the other is control and by following pre and post measurement for each group.

Research community

Research community included (60) children from (9-12) years from Smouha Youth Center in Alexandria, were divided as follows:

Basic study sample

(40) boys and girls were selected in deliberate manner, the summer season (2015), they were divided into two groups; one experimental and the other is control, each of them contains (20) children.

Exploratory study sample

(20) children were randomly selected from the same age group of the summer club subscribers in the same year, to find the scientific coefficient of (validity and reliability) for research tools. Homogeneity and parity of the Sample basic study has been obtained, which is illustrated in table (1) and table (2).

Table (1)
Homogeneity of the research sample in variables (research restriction) (N=40)

Research variables \ Statistical treatments			Arithmetic average	Standard deviation	Coefficient of skewness	Coefficient of kurtosis	T value
Physical Measurements	Age/year		11.315	0.608	-0.462	-1.00	100.284
	Length/Cm.		140.657	5.166	0.220	-0.417	160.066
	Weight/kg.		29.771	2.556	0.226	-0.897	59.644
Physical abilities	Fast power for arms Muscles	Pushing a medical ball test(1kg)/m	2.025	0.27	-0.554	0.214	50.204
	Fast power for legs Muscles	Long vaulting test /m.	1.875	0.176	-0.177	-0.196	71.092
	Bearing strength test for arms muscles	Hang on iron bar test /sec.	18.22	4.78	0.911	0.617	29.974
	Accuracy	Dartboard Shooting No./time	7.644	1.509	-0.443	-0.311	33.963
Accuracy of skill performance for forehand drive in table tennis			0.695	0.328	0.043	-1.166	10.166
The forehand drive skill evaluation			3,007	0,312	0,515-	0,315	5,104

As illustrated in table (1), all coefficient skewness values lie between (±3), that evidences the values moderation and homogeneity of the research sample in variables (subject to search).

Table (2)
Parity between two groups

Research variables / Statistical treatments			Post measurement for experimental group		Post measurement for control group		T value
			Arithmetic average	Standard deviation	Arithmetic average	Standard deviation	
Physical Measurements	Age/year		11.22	0.514	11.30	0.620	2.02
	Length/Cm.		138.425	4.123	139.506	5.002	1.98
	Weight/kg.		28.710	2.50	29.016	2.46	1.57
Physical abilities	Fast power for arms Muscles	Pushing a medical ball test(1kg)/m	2.11	0.23	2.05	0.25	2.04
	Fast power for legs Muscles	Long vaulting test /m.	1.54	1.71	1.46	1.90	1.69
	Bearing strength test for arms muscles	Hang on iron bar test /sec.	17.15	3.52	17.26	3.80	1.75
	Accuracy	Dartboard Shooting No./time	7.62	1.49	73.7	1.62	2.01
Accuracy of skill performance for forehand drive in table tennis			0.592	0.301	0.613	0.317	1.84
The forehand drive skill evaluation			2.85	0.29	2.76	0.33	1.99

Value (T) Driven at the level of (0.05) = (2.09), and at the level of significance (0.01) = 2.84

It is seen from the table (2) no differences between the experimental and control groups in all the variables under consideration, which illustrated the values of (T) ranged between (1.57, 2.04), which confirms the existence of equivalence between the two groups

Research tools:

1- Physical abilities test for the forehand drive in table tennis (enclosure 2)

2- Accuracy test for the forehand drive skill in table tennis (enclosure3)

3- Form skill performance evaluation for the forehand drive skill in table tennis (enclosure4)

4- Lessons in (think- pair-share) strategy, suggested to learn the forehand drive skill in table tennis (enclosure 5)

5- The method explanation and supply the forehand drive skill in table tennis the control group (enclosure 6).

Coefficients of validity and reliability for research tools and its exploratory studies have been found (as per enclosures) in addition to the procedures and the structure of (think- pair-share) strategy. (enclosure 7)

Basic study:

Basic study has been carried out during the period from 12 / 7 / 20015 to 7/8/2015 as follows:

- Pre measurement:

The pre measurement for the two groups of research (the experimental and the control) has been made during the period from 12/7/2015 to 17/7/2015)

-The program implementation:

The proposed strategy has been applied on the children of the experimental group and explanation for the control group was via traditional manner, during the period from 19/7 to 31/7/2015, three times a week, one-time duration was (90) minutes, meeting each group interchangeably during the days of the week at the same court, in the same time from 9A.M and till 10. 30A.M

-Post measurement:

Post measurement, has been occurred for the two groups of research, during the period from 2/8/2015 to 8/7/2015 skill performance test for forehand drive in table tennis. Same referees were involved (enclosure 1).

Statistical processors:

- SMA
- T) test for the significance of differences
- The correlation coefficient
- Convolution coefficient
- Standard Deviation
- Upper and lower quadrants
- Ratio improvement
- Splaying coefficient

Presentation and Discussion of Results

We shall present and discuss the results in order to answer the research hypotheses and its validation.

- First hypothesis:

There are statistically significant differences between the two measurement (pre & post) taken for the experimental group, in favor of the (post) measurement while learning the skill of forehand drive in table tennis for beginners.

To validate the first hypothesis, we found the difference between the averages of the two measurements (pre and post) in skill performance test for forehand drive in table tennis for the experimental group children (as illustrated in table 3)

Table (3)
The difference between the averages of the two measurements (pre and post) for the experimental group in skill performance test for forehand drive in table tennis (N=20)

Statistical treatments / Skill (subject to search)	Pre-measurement		Post measurement		(T) value	Ratio of improvement %
	$\bar{C}$	±E	$\bar{C}$	±E		
Accuracy of skill performance for forehand drive in table tennis	2.541	0.611	8.634	0.809	23.582	239.424%

As illustrated in table (3) that the accuracy of skill performance for forehand drive in table tennis had significant result (0.01) in favor of post measurement, ratio of improvement was (239.424%), which confirms the positive impact of (Think-Pair-Share) strategy, on the skill performance, since the strategy helped in accelerating learning the skill performance, this happens by giving the learner child the opportunity to self-reliance, thinking and meditating the problem subject to search by himself and notes the major question as well as ordering of ideas with the other pair of colleagues, and try to find the correct answer to the problem. This matches what several studies have proved such as the study of Mohammed Hamada (2014) (17) Mahmoud Nasser (2013) (18).

The use of (Think-Pair-Share) strategy has an effective and positive impact in learning forehand drive skill in table tennis, this achieves the validate of the first hypothesis of this paper.

- Second hypothesis:

There are statistically significant differences between the two (pre & post) measurements taken for the control group, in favor of the (post) measurement while learning the skill of forehand drive in table tennis for beginners.

To validate the second hypothesis, we found the difference between the averages of the two measurements (pre and post) in skill performance test for forehand drive in table tennis for the control group children (as illustrated in table 4)

Table (4)
The difference between the averages of the two measurements (pre and post) for the control group in skill performance test for forehand drive in table tennis (N=20)

Statistical Treatments / Skill (subject to search)	Pre-measurement		Post measurement		(T) value	Ratio of improvement %
	$\bar{C}$	±E	$\bar{C}$	±E		
Accuracy of skill performance for forehand drive in table tennis	1.421	0.523	7.321	1.324	17.224	102.111%

As illustrated in table (4) that the accuracy of skill performance for forehand drive in table tennis had significant result (0.01) in favor of post measurement, ratio of improvement was (102.111%), which confirms the positive impact of the traditional way in teaching the skill, the teacher shows a live example in addition to his verbal explanation for the skill as well as doing some exercises for children to enable them to Perfect the skill subject to search. This matches the studies- of Mohamed Mahmoud (2005) (17), Ibrahim Ahmed (2008) (10) and Sleem Abo Ghaly (2011) (20) – which have proved that using traditional methods in education has an effective and positive impact in learning the kinetic skill, this achieves the validate of the second hypothesis of this paper.

- Third hypothesis:

There are statistically significant differences between the (post) measurements for both control sample and experimental sample, in favor of the experimental group while learning the skill of forehand drive in table tennis.

To validate the third hypothesis, we hired three referees who were actually teaches table tennis in faculty of physical education for girls, to evaluate the skill (subject to search) for both research samples (experimental and control) as illustrated in table (5)

Table (5)
Calculate the value of (T) test, and the rate of improvement between the experimental and control groups in the skill in question

Statistical Treatments / Skill (subject to search)	Post measurement for experimental group		Post measurement for control group		(T) value	Ratio of improvement %
	C^{-}	±E	C^{-}	±E		
Accuracy of skill performance for forehand drive in table tennis	8.634	0.809	7.321	1.324	3.867	127.313%

As illustrated in table (5) The value of (T) Indexed (3867) which confirms There are significant differences The presence of statistically significant differences significant result (0.05), improvement was (127,313) Which explains the presence ratio improved for the experimental group.

The researchers attributed this to the advantages of (Think-Pair-Share) strategy

Where students learn to use them together and test their ideas in Environment devoid of dread and anxiety. And help them to gain information and access to it themselves. Students the opportunity also allows active in order to be effective in the educational process, which helps to keep the impact of learning. All students are given the opportunity to discuss their ideas together through discussions. And increase the collection and develop higher-order thinking. Environment devoid of dread and anxiety

This matches what several studies have proved such as the study of Mohammed Hamada (2014) (17) Mahmoud Nasser (2013) (18), Sleem Abo Ghaly (2011) (20) and Nadia Lotf Alah (2003) (20). The use of (Think-Pair-Share) strategy has an effective and positive impact in learning forehand drive skill in table tennis, this achieves the validate of the third hypothesis of this paper.

- Forth hypothesis:

There are significant differences between the experimental and control groups for the experimental group in evaluating the performance level of skill to the skill of the front straight strike in table tennis.

To validate the fourth hypothesis was used the opinion of three umpires who Iqmn teach table tennis substance Faculty of Physical Education for Girls in evaluating (sample) in the experimental and control skill (under discussion) and illustrated by Table (6)

Table (6)
Differences between post measurement average for both experimental and control group in forehand drive in table tennis according to referees (N=40)

Statistical treatments / Forehand drive skill	Experimental group (N=20)		Control group (N=20)		T value
	C^{-}	±E	C^{-}	±E	
First referee	9.176	0.808	7.529	1.280	4.537
Second referee	8.882	0.696	7.00	1.060	6.211
Third referee	9.411	0.507	7.470	1.067	6.882
Total (skill)	9.156	0.585	7.33	1.21	5.635

T. tabular value at the level of significance 0.05=2.03 at significant level 0.01=2.72

The results of the table (6) refer to the presence of statistically significant differences at the level of significance (0.01) between the post measurement for experimental and control groups according to the opinion of the referees in forehead drive skill in table tennis, both researchers think that the improvement in skill performance level for the experimental group is due to the use of (Think-pair-share) suggested strategy. Tanks to this strategy learning this skill became faster, since it has logical sequence, this strategy depends on several stages so as not to start step before the completion of the previous step, as well as the clarity, ease of information acquisition and the ability to access information by the children them selves, where they can test their ideas in an environment devoid of dread and anxiety, the matter that gives the children an opportunity to discuss their ideas and try to achieve the good performance of the skill and then perform well when a post measurement occurs.

This matches what has been approved in Ibrahim Ahmed's study (2008) (10), and Ebtsam Ezz El-deen's study (2008) (6) Using (Think-pair-share) suggested strategy in teaching and learning has its deep impact in reducing learning time, that leads to improve the kinetic skill, the matter that fulfills the validate of third assumption of this paper.

Conclusions

Based on the goal, assumptions of research and the obtained results, we can extract the following:

1- Effective use strategy (Think-Pair-co) proposed that children learn from (9-12 years)

the skill of forehand drive in table tennis.

2- A traditional method positive impact on children's learning from (9-12 years) of the skill of forehand drive in table tennis.

3- (Think-pair-share) suggested strategy is more positive than the traditional method in learning forehand drive in table tennis for children (9-12) years.

Recommendations

Based on research results and its conclusions, the two researchers recommended the following:

1- To apply (Think-pair-share) strategy to teach the forehand drives in table tennis for children (9-12) years.

2- To apply (Think-pair-share) strategy to teach the other skills of table tennis for the children (9-12) years.

3- Interest in the preparation of physical education teachers to use different methods, strategies and modern teaching methods to make the educational environment more positive in helping to accelerate learning process for children.

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