THE EFFECT OF THE LEARNING MODEL TOGETHER USING AUXILIARY TOOLS IN DEVELOPING THE ACCURACY OF THE FOREHAND STROKE IN TABLE TENNIS

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Abstract

The purpose of this paper is to identify the effect of the learning model together with and without auxiliary tools in developing the accuracy of the forehand stroke in table tennis and identifying the best group, the researchers assumed that there were statistically significant differences between the pre and post-tests of the two research samples, as well as between the post-tests of the learning model together using auxiliary tools and the learning model together without aids in developing the accuracy of the forehand stroke in table tennis the researchers used the experimental method in the manner of two equal groups, and the research community was determined by the players of the specialized school in the Ministry of Youth and Sports in table tennis at the age (10-12) for the year (2021), and their number was (18) players the sample was tested in a deliberate way from the original research community, and also by lottery, with (12) players. The sample was randomly divided into two groups, each group comprising (6) players. The first group works with the learning model together using auxiliary tools, and the second group works with the learning model together without tools. Help, the duration of the curriculum was (4) weeks, with (4) educational units per week, and after the completion of the curriculum, post-tests were conducted, the raw scores were extracted, and the appropriate statistical treatments were used to treat the results that were presented, analyzed and discussed. In these results, the researchers reached the most important conclusion that the use of the learning model together (whether with or without auxiliary tools) had a positive effect on the development of the accuracy of the forehand stroke. In addition to the superiority of the first experimental group over the second group in developing the accuracy of the front kick, the most important recommendations were the need to take advantage of the learning together model and the tools to help create an effective learning environment to develop the accuracy of the forehand stroke in table tennis.

Keywords: Learning together. Motor program parameter. Small group

Introduction

Kinetic learning is one of the branches of the general educational process that characterizes human life from birth to death, as human activity in its various types is not free from learning and kinesthetic learning, and the kinetic learning process is consistent with sports training in the process of transferring information from the trainer or teacher to the player or learner, as well as In the changes that occur in the motor behavior resulting from the training or educational process that aims to develop the player or the learner.

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The model of learning together is one of the modern kinetic learning methods, as it is one of the educational processes that interacts functionally to achieve the desired goals and reach the learners to the best level in learning various sports skills (Al-Dulaimi. 2013).

The learning together model is one of the strategies for organizing the educational environment and depends on reducing the number of learners into small groups of varying ability to perform a specific joint work among them with the aim of learning through it. In addition, the issue of the use of assistive devices has many proofs in motor learning research indicating its effectiveness in providing an active learning environment for the learner.

Table tennis is considered one of the racket sports spread in many countries of the world. Its players have characteristics and high physical and mental requirements. The practitioners of this game implement its skills in a way that serves different playing situations. "This is how many fans have gained from amateurs because it is an interesting and simple game that does not need too many tools or a large number of players, as it is also a family game that young and old can play and practice, as well as its tools are available in most parts of the world (Al-Sarraf. 1987).

Through the foregoing, the importance of the research lies in identifying the effectiveness of the learning model together with auxiliary tools compared to the second experimental group that does not use auxiliary tools in developing the accuracy of the forehand stroke for this age group of players (10-12) years.

Research problem

There is a problem with the traditional method that teachers follow in giving them exercises to learners, which is the method of direct implementation by learners of exercises prepared by the teacher, who is assigned the sole role in implementing the vocabulary of the educational unit and by performing collectively without allowing them to work together in a small group and create cooperative trends among them and provide each other By giving simple feedback on their skill performance and benefiting from the development of their experience in the use of assistive devices, thus creating an educational environment different from the one that comes in the command form by the teacher and without the use of assistive devices.

Therefore, the researchers decided to introduce the learning model together with auxiliary tools, which they assume are working to develop the accuracy of the forehand stroke in table tennis, and this is consistent with the basics of the motor learning process.

Research objective

− Identify the effect of the learning model together using auxiliary tools (and without tools) in developing the accuracy of the forehand stroke in table tennis, and to identify the best group of the two research groups.

Research hypotheses

The researchers assumed that there are statistically significant differences between the pre and post-tests of the two research samples in the accuracy of the forehand stroke, and there are statistically significant differences between the post-tests of the two research samples in the accuracy of the forehand stroke.

Research methodology and field procedures

Research Methodology

The researchers used the experimental method in a two equivalent groups style

Community and sample research:

The research community was determined by the players of the specialized school in the Ministry of Youth and Sports in table tennis at the age of (10-12) for the year (2021).

The number of (18) players, and the sample was chosen randomly from the original research community, and also by lottery, and by (12) players were randomly divided into two groups, each group comprising (6) players, and thus the percentage of the research sample is (66.66%), It is an appropriate percentage to truly and honestly represent the research community.

Before starting the implementation of the educational curriculum, the researchers resorted to verifying the equivalence of the two research groups in the skill test variable, which is the accuracy of the forehand stroke ball in the

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table under study, as shown in Table (1).

Table (1) shows that the differences in the skill test for the accuracy of the forehand stroke and table tennis between the two research groups appeared insignificant, as the calculated (T) values were less than their tabular value, which amounted to (2.23) at the significance level (0.05) and below the degree of Freedom (10), which indicates that there are no significant differences, and this means that the two groups are equivalent in the research variable.

The researchers used the following research methods:

• Arab and foreign sources and references.

• Note.

• Personal interviews.

• Resolution.

• Tests and measurement.

The tools and devices used by the researchers are:

• A form for recording the accuracy of the table tennis kick.

• A legal table with its accessories and (50) legal balls.

• Robert's table tennis device (feeding balls for players).

• Rackets of different sizes and weights for table tennis.

• Jump ropes (6), a weighted hand strap (keter) and rubber bands.

• Various rubber cones, discs and rings.

• Colored tape, measuring tape (cm), dyes and chalk.

• Whistle and two (2) manual stopwatches.

• An electronic calculator of the type (Casio - Scientific).

• A laptop type hp)).

• Camera + video type (SONY-16 mega pixels).

• Various stationery items (papers, pens...etc).

In order to determine the skill test for the accuracy of the straight forehand stroke (Flat), the researchers used the following test (Zghair. 2002).

The test includes the standing of the player to be tested on the other side of the table and he is given (5) trial attempts after the warm-up procedure to know how to perform the test, after providing the instructions and instructions for the test from the researcher to the laboratory, the ball is hit to the player by one of the assistants standing next to the table, as shown in Figure (1) attempts to forehand stroke. Note: In the event the ball falls on one of the common lines, the highest score is calculated, but in the event that the ball goes outside the limits of the table, it is given a zero to the tester.

Exploratory experiment

The researchers conducted the exploratory experiment in the Specialized School of the Ministry of Youth and Sports in Table Tennis, on a sample of the original research community who did not participate in the main experiment and were chosen randomly, as its purpose was to identify:

– Knowing the consistency of the skill test with the level and capabilities of the testers and the factors that may appear when carrying out the tests, as well as how to organize the work of the assistant team.

– Knowing the suitability and validity of the court and tools, and knowing the total time of the test.

– Finding the scientific weight of the candidate tests (honesty, stability and objectivity).

Scientific basis for the test

For ensuring the correct measurement, the researchers made sure of the scientific transactions of the tests before conducting the main experiment (honesty, stability and objectivity).

Honesty test

In order to achieve the purpose for which it was intended, and on this basis, the researchers used the validity of the content in order to verify the validity of the skill tests by presenting them to experts and specialists.

Stability test

The researchers implemented the tests on a sample of the original research community who did not participate in the main experiment, and after seven days the tests were re-applied to find the correlation coefficient between the tests, as "the period between the two tests takes from (1-7) days," (Khater and Fahmy. 1987), and after statistical treatments of the results using the simple correlation law (Pearson), it shows that the test has a high degree of stability, as shown in Table (2).

Objective test

The test is considered objective if it gives in all cases the same grades regardless of who corrects it, so finding objectivity to test the accuracy of the front kick only needs arbitrators, after the statistical treatment of the test results, the correlation coefficient was highly significant, which indicates that the objectivity coefficient was high, as shown in Table (2).

Table 1: Shows the equivalence of the two research groups in the test variable.

No.	Variable	First group		Second group		T value	Type sig
		Mean	standard deviation	Mean	standard deviation		
1	Table Tennis Forehand stroke Accuracy / Degree	18.97	1.07	17.68	1.23	1.76	Non sig

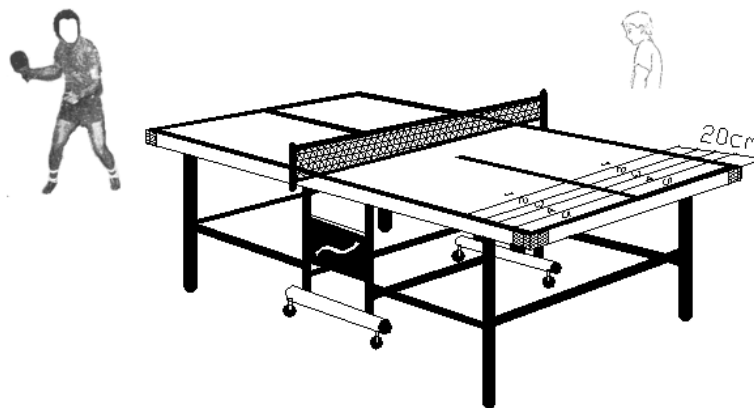Tabular score (T) = (2.23) at the significance level (0.05) and below the degree of freedom (10).

Figure (1): Shown the accuracy of the forehand stroke skill test in table tennis the number (1) refers to the rectangle (57 x 152.5) cm the numbers (2, 3, 4, 5) refer to the rectangle (20 x 152.5) cm.

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Field research procedures:

Pre-tests

The pre-tests of the research sample were conducted on Monday (11/10/2021) to test the accuracy of the forehand stroke in table tennis.

Implementation of the vocabulary of the model under consideration in the main experiment:

After completing the pre-tests, the educational units began, as shown below:

1- The first group works with the learning model together with auxiliary tools.

2- The second group works with the learning model together without auxiliary tools.

As for the vocabulary, the duration of the curriculum was (4) weeks, the number of units was (4) educational units per week, the total number of units of the educational curriculum was (16) units, and the time of the educational unit was (90) minutes. The applied exercises with the auxiliary tools were carried out in part of the main section with a time of (50) minutes, as the vocabulary of the first group was implemented by practicing the skill using the auxiliary tools by the members of the group and under the supervision of the team coach, the assistant work team and the follow-up of the researchers. The approach followed on the second experimental group according to the same model and without using auxiliary tools and according to the curriculum prepared by the trainer, and the work was completed with the two research groups on Monday (8/11/2021).

Post-tests:

After completing the curriculum in a period of (4) weeks with (16) units with aids (and without) in developing the accuracy of the forehand in table tennis, the post-tests were conducted under the same conditions as the pre-tests on Wednesday (10/11/2021).

Statistical methods (Al-Tikriti and Al-Obaidi.1999) :

The researchers used the following statistical methods:

1. The percentage.

2. Arithmetic mean.

3. Standard deviation.

4. T-test for symmetrical and asymmetric samples.

5. Pearson correlation coefficient.

6. (Chi-2).

Presentation, discussion and analysis of results:

Through the results shown in Tables (3,4), we find that there is a clear and tangible development for the members of the two groups in the post-tests and this is consistent with what was stated in the first hypothesis of the study, and the researchers attribute in the light of what the sources mentioned that "The diversity and composition of the exercises and their failure to follow the same pace in terms of form and content lead to suspense and development, and the importance of this appears in the preparation stages."(Al-baseety. 1989). The researchers believe that the correct explanation and presentation process was an important factor in acquiring the skill and drawing a clear picture of the learner. Also, giving the learner the opportunity to participate in small groups and correct the performance of the colleague within his group (learning together) by providing him with real-time feedback about his performance, generates impulse and build confidence. By himself, which positively affects his mental processes and facilitates the process of retaining the tasks he has learned and the speed of recalling the motor program for these tasks when needed, and thus continuing to exercise and improving performance, which positively affects by increasing the accuracy of the learned skill, in addition to the importance of using auxiliary tools for the first group in providing an educational environment similar to the circumstances Competition, and this was confirmed by specialists in the field of kinetic learning because of its importance when used in educational units.

As for Table (5), the researchers attribute the reason for these differences to the use of the first group of auxiliary tools prepared by the researchers during the educational units in the implementation of the duties of the practical exercises for this skill, which worked to approximate the reality of movement or skill in the game of table tennis and provide an educational environment that is close to the environment of competition, as"The use of auxiliary tools, its importance stems from its ability to increase the positive interaction of the player and his participation in the development of knowledge and skills of the game, just as the use of a set of means and tools helps in achieving the goals of the game."(Jawad.2002). In addition to the important basic principles that must be observed during the educational process, is the availability of tools and assistive devices that work on the effectiveness of learning through a sense of ability and self-confidence in the development and development of accuracy in terms of skill, physical and kinetic through building good measures of the motor program for the forehand in terms of (movement time, The total force used, muscle selection) which generates spatial and temporal accuracy

Table2: Shows the stability and objectivity of the test under investigation.

No.	Tests	Stability coefficient	Objectivity
1	The accuracy of the forehand stroke in table tennis	0.85 %	0.90 %

Table 3: Shows the arithmetic means, standard deviations and the computed value (t) between the pre-and post-test to test the accuracy of the forehand stroke for the first experimental group with a learning model together with auxiliary tools.

No.	Test	Pre		Post		T value	Type sig
		Mean	standard deviation	Mean	standard deviation		
1	Table Tennis Forehand stroke Accuracy / Degree	18.97	1.07	31.65	1.12	7.38	Sig

Tabular score (T (= (2.57) at the significance level (0.05) and below the degree of freedom (5)

Table 4: Shows the arithmetic means, standard deviations, and the computed value {t} between the pre- and post-test to test the accuracy of the forehand stroke for the second experimental group with learning model together without auxiliary tools.

No.	Test	Pre		Post		T value	Type sig
		Mean	standard deviation	Mean	standard deviation		
1	Table Tennis Forehand stroke Accuracy / Degree	17.68	1.23	29.26	1.15	5.53	Sig

Tabular score (T (= (2.57) at the significance level (0.05) and below the degree of freedom (5).

Table 5: shows the significance of the differences between the post-test for the first and second groups for the accuracy of the forehand.

No.	Test	Pre		Post		T value	Type sig
		Mean	Standard deviation	Mean	Standard deviation		
1	Table Tennis Forehand stroke Accuracy / Degree	31.65	1.12	29.26	1.15	3.33	Sig

Tabular score (T (= (2.23) at the significance level (0.05) and below the degree of freedom (10).

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of the motor program, and this is confirmed by the two scientists specialized in the field of motor learning when they referred to "the player determines the most appropriate throw (such as faster, slower, farther, closer, higher, lower) and perhaps the party that needs to use it, and when you make these decisions it guesses the scale values you need to produce the desired pitch" (Richard A. & Craig A. Wrisberg 2000).

Conclusions

– The use of the learning model together with small groups (2-6) learners, whether using the auxiliary tools or without them, contributed to the development of the accuracy of the forehand.

– The first experimental group outperformed the learning model together with auxiliary tools over the second experimental group (without tools) in developing the accuracy of the straightforward stroke (Flat) in table tennis.

Recommendations

Under the conclusions reached by the researchers, recommend the following:

– The necessity of benefiting from the learning model together by using the assistive tools in creating an effective learning environment to develop the accuracy of the forehand.

– The necessity of conducting studies in other skills (closed) in table tennis and developing the accuracy of these skills in this model using auxiliary tools.

– The necessity of conducting studies and research on other individual sports events and games, and on the category of female players.

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