

## **Building a test of kinetic speed to develop the skills of the forehand and backhand for the players of the Mustansiriyah University team in table tennis**

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### **Abstract**

The purpose of this paper isto build a special test for kinetic speed in table tennis and to know the effect of exercises in developing the forehand and backhand strokes in table tennis. Where the researchers used the experimental method to reach a solution to the problem. The research community was the students of the College of Physical Education Mustansiriyah University, the university team players, who numbered (8) players, which constitute (100%) of the total community. Research the two researchers used observation, references and scientific sources, personal interviews with experts and specialists, questionnaire form, tests and measurement to find a solution to the research problem.The researcher used the statistical means (arithmetic mean, standard deviation, and skew coefficient) and the data were statistically processed with the statistical bag (Spss), and in light of the results, the following was reached: The special exercises for the skills of the forehand and backhand strike have a clear impact on the development of the experimental group, The special exercises to test the kinetic speed led to the development of the skills of the forehand and backhand. Where the recommendations of the research were made the necessity of using this test codified by the two researchers among table tennis players, conducting similar studies in terms of physiological aspects and other activities.

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### **Introduction:**

Measurement and testing are some of the important basic sciences in the field of sports, as it works before or after the training curriculum. Test and measurement are tools used in the evaluation process, but there can be no evaluation unless there is a test or measurement that he uses from the data obtained because of the testing process.Measurement, from Guligord's point of view, means describing data in a digital form. This, in turn, provides an opportunity for the many advantages that result from dealing with numbers and with arithmetic thinking.

Campbell sees that the analogy is identifying numbers for subjects or events

according to certain rules.As for "Nunnally" (measurement is defined as the rules for using numbers or numbers so that they denote things in a way that indicates quantitative amounts of an attribute or characteristic).(Muhammad Hassan Allawi, Muhammad Nasr al-Din Radwan.2008). As for the structure of the test and its construction, it is based on the scientific and optimal use of statistics, and thus the importance of the tests when used in the sports field, especially in research and field experiments, and it is necessary to pay attention to its mastery, how to install and its sons, which is one of the most important steps When designing the test in order to obtain objective and high moral results, and to clarify the goal for

which the test or measurement was set, and this can obtain high moral results. While Bobby believes that, the test (is a means that requires the use of research methods, such as measurement, observation, experimentation, investigation, identification, interpretation, conclusion and generalization).(Hamad Mohammed Khater, Ali Fahmy Al-Beik.1996) The tests in this field are of great importance in standardizing the level. This, by its nature, gives indications from which both the coach and the player himself can infer the extent of his ability and his position in relation to his peers. The need for tests has become a necessary thing for many of the phenomena that they mean Physical education and sports sciences, and it must be known that this process of designing and creating tests is one of the difficult and delicate matters that require high experience and skill as well as require high knowledge of delicate matters related to physical, skill and kinetic abilities through which we seek to achieve the desired goals. The test builds and plans in a way that achieves the purpose, and we hope that it is established and clear to facilitate the task of the test-takers and the individuals on whom the test will be conducted hence the importance of the research.

### Research problem:

As for the research problem, which was through the researchers' vision of the championships and achievements that have been achieved in the game of table tennis, the researchers noticed that they are among the learners, follow-ups, and academics in the field of physical education.(Forehand and backhand) in table tennis, in addition to that, it needs specificity and dependence on a case of the technical performance of the skill and it can give a real evaluative picture and it is one of the important aspects on which the training programs are based. Therefore, the research problem lies

in finding a physical skill test that contributes to the performance evaluation process that accompanies training programs in the hands of trainers for the success of this skill.

### Research objective:

- Building a skill physical test that evaluates the technical performance of the front and back two-stroke skills in the game of table tennis.
- Recognizing the effect of special exercises in developing the skills of the front and back strikes in the game of table tennis according to the kinetic speed test.

### Research hypotheses:

There are statistically significant differences for the pre, post-tests for the experimental, and control group in the study variables.

### Research fields:

- Human field: Players of the College of Physical Education and Sports Sciences /Mustansiriyah University
- Time field: (25/12/2018) to (3/4/2019)
- Spatial field: Indoor hall College of Physical Education and Sports Sciences

### Research methodology and field procedures:

#### Research Methodology:

The researchers used the experimental method for its relevance to the nature of the research problem. The nature of the problem is what determines the research method.

#### Community and sample research:

The research community included a group of table tennis players, the team of the College of Physical Education and Sports Sciences it consists of (8) players, and the

sample of the research was chosen by the intentional method, whose number is (8) players, and thus their percentage is 100% of the original community, knowing that

the homogeneity was done using the torsion coefficient and the table (1) shows the sample distribution and homogeneity.

Table (1) shows the homogeneity of the research sample for the variables (length , weight, age)

Variables	Measuring unit	Mean	Median	Std. Deviations	Skewness
Length	Cm	170	170	3,78	-0.43
Weight	Kg	70	70	1,96	-0.67
Age	Year	21	21	1,22	-0.05

The skew coefficient is between ( $\pm 1$ ), as the sample is homogeneous.

#### Methods and tools used:

- Arab and foreign sources
- A device for measuring height and weight
- (2) Casio electronic stopwatch
- tape measure
- electronic calculator
- rackets (20)
- legal table

#### Identify the search test:

Where the research test was chosen after reviewing the modern scientific sources and then selecting a form and seeking the opinions of experts and specialists in this field, as it was agreed on the test after conducting the two reconnaissance experiments, and it was confirmed as follows.

#### First exploration experience:

One of the most important steps in conducting the research is the exploratory experiment through which many things are identified. The first exploratory experiment was conducted on (Tuesday) 25/12/2018 on (2) of the players outside the research sample in order to identify the validity of

the test and the possibility of its application.

- First: Determining the distance between the player and the table, determining the time taken.
- Second: Ensure the validity of the table and tools used in the test.

#### Second exploratory experiment:

A second reconnaissance experiment was conducted on the players themselves and in the same place, the college hall, on 12/27/2018. On (Thursday), the test was approved, which was modified in the first exploratory experiment in its final form. The registration process was controlled by the assistant work team in addition to checking the information that was recorded in the special form and noting during the second reconnaissance experiment that the test is applicable by individuals in the research sample.

#### A test of Kinetic speed in the skills of forehand and backhand in table tennis.

##### Test name: Kinetic speed test

- Tools used: table, table game balls, tape measure, stopwatch, registration form

- Method of performance: The player stands at a distance of (1) meter in the middle of the table, then the coach gives the ball to both sides with (12) balls to both sides, right and left, to perform the front and back blows.
- Recording method: The player is given (12) balls by the coach, and the performance time is calculated.

#### The most important scientific basis for the test used:

- **Honesty:**Honesty means the test is true if it measures what it was actually intended to measure and does not measure something else. Examination of the content of the test thoroughly and depends on the judgment of experts' opinion on the extent to which the test represents aspects of ability, trait or measured knowledge" (Laila Farhat, 2001: p. The reliability of the test and according to this law, it becomes clear that the test used in the research is a valid test, as is the result of the validity of the content in the test, mainly on the extent to which the test can represent the contents of the elements and the aspects it measures in honest, homogeneous and significant representation to achieve the goal for which it was set, as it depends on the opinion of experts In representing the tests, the objective to be measured is to agree with the opinion of experts and specialists

and to rely on the tests that obtained an agreement percentage of 75% or more

- **Stability:**The stability of the test means "the extent of the accuracy of the test in measurement and the consistency of its results when it is applied multiple times to the same individuals" (Muhammad Jassim Al-Yasiri.2010). In order to find out the stability of the measurement, the two researchers found stability by testing and re-testing, as it was re-applied after a week of the first experiment, as it was found through the results of Table (2), which shows the stability with a high value, which makes it acceptable.
- **Objectivity:**As for objectivity, it means "there is no difference between the assessors in judging a thing or a particular subject" (Mustafa Hussain Behi.1999), and since objectivity means agreement and lack of difference in calculating the scores set by the arbitrators, it relied on the use of accurate measurement tools (time clock). Measurement tape) to avoid the arbitrators' self-assessment, two arbitrators were chosen in the competence of measurement and evaluation to record the results of the tests, taking into account that they were standing far apart in order not to affect one of the other.

Table (2) shows the scientific basis for the test

Test name	Stability	Honesty	Objectivity
Kinetic speed of performance	0.76	0.97	0.91

It appears from the table that the test obtained a high-reliability coefficient if it relied on a stability coefficient of not less than 0.71, which makes it acceptable.

**Pre-test:**

The pre-test for the research sample was conducted on Wednesday, 2/1/2019 at 9:00 am, for the purpose of identifying the most important conditions related to the test, all of them in terms of place, time and tools used.

**Main experiment:**

The two researchers prepared an experimental curriculum for the kinetic speed ability of the forehand and backhand skills, and relied on that with their experience and by taking the opinions of experts and specialists in the field of sports training science, testing, measurement and table tennis, and on scientific sources. The duration on Tuesday and the total of the training units were (8) training units, where the two researchers used a set of exercises, which achieved the goal and purpose and was represented by the kinetic speed of the front and back strikes in table tennis, the two shared together at the same time. The curriculum on 6/1/2019, where all exercises were carried out independently in a training unit, and the time of the exercises varies according to the difficulty of performance.

The two researchers used the main experiment according to the units of the training curriculum prepared in the following formula.

- Number of exercises (4) repetitions per week.
- The difficulty of the performance used was (medium, maximum, near maximum).
- The time of the exercise according to the difficulty of the performance.
- The exercises were applied within independent training units cut out from within the lesson.

**Post-tests**

After applying the experimental method prepared by the two researchers, the post-test was conducted in a similar way to the pre-test under the same spatial and temporal conditions with the assistant's work team at (10) in the morning on Sunday 12/3/2019, a week after completing the prepared curriculum.

**Statistical methods:** The search data was processed through the Statistical Package for the Social Sciences (SPSS).

**Presentation and discussion of the results:**

**Presentation and discussion of the results of the kinetic performance speed test of the experimental group:**

Table (3) shows the arithmetic means, standard deviations, the calculated (t) and tabular (t) values, and the significance of the differences for the pre and post-tests in the study variables for the experimental group.

Variables	Measuring unit	Pre-test		Post-test		T value tabular	T value Calculated	Type sig
		Mean	standard deviation	Mean	standard deviation			

Kinetic speed of the forehand and backhand	Sec	11,56	1,13	11	1.01	2.70	2.26	sig
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Below the significance level of 0.05 and the degree of freedom of n-2

**Presentation of the results of the pre and post kinetic performance speed test for the control group, as shown in the table.**

Table (4) shows the arithmetic means, standard deviations, their calculated and tabular value, and the significance of the differences for the pre and post-tests in the study variables, the control group.

Variables	Measuring unit	Pre-test		Post-test		T value tabular	T value Calculated	Type sig
		Mean	standard deviation	Mean	standard deviation			
Kinetic speed of the forehand and backhand	Sec	12.30	1.69	12.01	1.52	1.08	2.26	sig

Below the significance level of 0.05 and the degree of freedom of n-2

**Presentation and analysis of the results of the post-post kinetic performance speed test for the experimental and control groups:**

Table (5) shows the results of the post-post kinetic performance speed test for the experimental and control groups

Variables	Measuring unit	Pre-test		Post-test		T value tabular	T value Calculated	Type sig
		Mean	standard deviation	Mean	standard deviation			
Kinetic speed of the forehand and backhand	Sec	10	1.01	12.30	1.52	1.08	2.26	sig

Below the significance level of 0.05 and the degree of freedom of n-2

**Discuss the results:**

It is evident from Table (3) of the experimental group that there are clear differences among the members of the research sample, and the researchers believe that these differences are due to the use of special exercises estimated for the kinetic speed of the skillful kinetic performance in table tennis. The

kinesthetic skill helped develop these forehand and backhand strike skills and thus achieved performance. Where he sees, "The forehand and backhand in table tennis are different skills in terms of technique and tactics, and each skill has a characteristic in terms of technical and skill performance" (Hussain Ali Hussein; 2017).

In addition, the special exercises, the difficulty of performing them, using them, the number of repetitions, as well as the units of comfort for them showed us positive results in the research variables among the members of the research sample. As for the group in Table (4) for the control group, it also showed positive results through arithmetic circles, and this is due to the use of special exercises on the sample of the research individuals by their trainer. As for table (5) for the post-tests for the individuals of the research sample in the experimental and control groups, the differences were clear among the members of the experimental research sample. As for the opinion of the two researchers, they noticed that this development. The program and the unity of its implementation, as well as the gradual difficulty of performance in the exercise, led to the adaptation because of the response of the sample members. The exercises, the skill of the front and back strikes. Ali Al-Baik, others pointed out, "The coach should always keep in mind the relationship between training and restoring rest so that he can improve the performance of the players and care about the need to return." Complete to their natural state after the fatigue those results from training" (Ali Beck, et al.; 1996)

This is what the two researchers used during the construction of the test and when implementing the training units for the members of the research sample. The researchers also see that the reason for this development is due to the effectiveness of the curriculum and the test and its application to the members of the research sample, in addition to the overlap of these exercises that contain the speed of skill performance with the positions and movements of playing and abilities The physical associated with the skill performance of the sample members, and

Amer Fakher Shaghatai points out that "the speed of performance is an unusual complex of individual and different abilities, which consequently appears in different types of sports in different forms" (Amer Fakher Shaghatai.2011).

### Conclusions and Recommendations:

#### Conclusions:

- The special exercises for the skills of the forehand and backhand have a clear impact on the development of the experimental group.
- Special exercises to test the kinetic speed led to the development of the skills of the forehand and backhand

#### Recommendations:

- The necessity of using this test is codified by the two researchers among table tennis players.
- Conducting similar studies in terms of physiology and other activities.

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