Effectiveness of the learning impacts Transferring of the games (volleyball- squash- tennis) on developing the accuracy of the forehand or backhand clear strokes of Badminton players

Raid Mhawes Zighair¹, Wissam Salah Abdul Hussein²

1. University of Baghdad, Iraq
2. University of Kerbala, Iraq

*Corresponding author: mhawesraid@scbaghdad.edu.iq (Zighair)

Abstract

Through the researchers' experience and their following-up to the Badminton, they noticed that most players ages (11-13) years suffer from being unable to perform the forehand or backhand clear strokes appropriately or perfectly. Thus, it affects the shuttlecock transferring to the right place, so the researchers try to solve this problem through using exercises form a group of sports games in which the kinetic path is similar to the strokes. The most significant research aims were identifying the impacts of diverse practicing of the games (volleyball, tennis, and squash) on developing the forehand or backhand clear strokes of the Badminton players, as well as, identifying the best impacts of diverse practicing of the games (Volleyball, tennis, squash), besides, the usual exercises on developing the forehand or backhand clear strokes of the Badminton players. The researchers used the experimental approach by designing (two equivalent groups with pre- and post-test) because it fits the problem's nature and achieves the research objectives. The most significant results were that: diversity of practicing some skills (serving of volleyball, tennis and squash) has positive impacts on developing the forehand and backhand clear strokes of the badminton, in addition to the experimental group which practiced the exercises of volleyball, tennis, and squash in the post-test outperformed the control group. The most significant recommendations were: confirming following up the scientific and programmed technique in learning to facilitate and help in the educational process, as well as, confirming the benefits of the learning impacts transferring between the kinetic and semi-kinetic skills, in addition to investing the time.

Key Words: Diverse Practicing, Volleyball, Tennis, Squash, Forehand and Backhand Clear Strokes, and Badminton

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1-Identifying the Research

1-1 The introduction and the research importance:-

The great scientific progress is a great fruit for scientists and specialists in the various fields of sciences. Here, we are interested in paying attention to the need of fields of physical education to a lot
of scientific references and literature to pursue this rapid scientific development in the fields of physical education and the related sciences.

This has been clearly reflected on the sporting achievements, as we notice, in international and Olympic competitions, the high level of players in both the collective and individual games and in breaking the records continuously, especially in the individual games. In addition to the learner characteristics which should be exploited in the educational process. One of these characteristics is the transferring of the learning impacts, which is an important phenomenon in learning in general and kinetic learning in particular, in which the effect of learning a kinetic skill is transferred to another kinetic skill. Thus, the administrator of the educational process can invest time and effort, especially in the case of similarity of the kinetic performance of the skills of the game or the forms of kinetic performance of the same skill. The badminton is one of the individual games played by both sexes and that most of its skills played in an open-round, so it needs a high skill performance because of the changing of the playing plans during the single point, that led to the competition of countries in creating the best modern scientific bases through which the level of the learner skill performance can be developed. Transferring of learning impacts of the badminton basic skills based on the assumption that what the learner learns can be transferred to all fields of real life as the learning aims to prepare people for the future and if there is education there must be an impact to be transferred (1)

1-2 the Research Problem:-

Through the researchers’ experience and their following-up to the Badminton, they noticed that most players ages (11-13) years suffer from being unable to perform the forehand or backhand clear strokes appropriately or perfectly. Thus, it affects the shuttlecock moving to the right place, so the researchers try to solve this problem through using exercises form a group of sport games in which the kinetic path is similar to the strokes in order to diversify and change the tool to obtain the appropriate force while adjusting the correct kinetic path and increase their excitement and suspense.

1-3 the Research Objectives:-

1-Preparing special exercises for the games of (volleyball, tennis and squash) to be similar to the kinetic path of the forehand and backhand clear strokes of the Badminton players

2-Identifying the diverse practicing impacts of the games (volleyball, tennis and squash) on developing the forehand and backhand clear strokes of the Badminton players.

3-Identifying the best impacts of the diverse practicing of the games (volleyball, tennis, and squash) and the usual exercises on developing the forehand and backhand clear strokes of the Badminton players.

1-4 the Research Hypothesis:-

1-There are significant statistical differences between the pre- and post-test of the control and experimental groups in favor of the post-test.

2- There are significant statistical differences between the pre- and post-test of the control and experimental groups in favor of the experimental group.

1-5 the research Fields:-


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1. **Human field**: players of the training center in Babylon province.


3. **Spatial field**: the closed hall in the district of Al-Mahweel, Babylon province.

**2. Research methodology and field procedures:**

**2-1. Research Approach:**

The researchers used the experimental approach by designing (two equivalent groups with pre- and post-test) because it fits the problem's nature and achieves the research objectives.

**2-2. Research community and sample:**

The research sample presented the whole research community that consists of (8) players of the training center, who aged (11-13) for the season of 2019; it doesn't mean that the researchers used the comprehensive inventory method for the whole society, then they were divided by a draw into two groups; the first group is the experimental group, and the second is the control group.

**2-3. Equivalence of the research groups:**

To ensure the equivalence of the two groups, the researcher used the Mann-Whitney test, which showed no significant differences between the two groups as in Table (1).

**Table (1) shows the equivalence of the research groups**

<table>
<thead>
<tr>
<th>Significance type</th>
<th>Significance level</th>
<th>Mann-Whitney value</th>
<th>Measuring unit</th>
<th>Statistical indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-significant</td>
<td>0.45</td>
<td>10</td>
<td>degree</td>
<td>Forehand clear stroke</td>
</tr>
<tr>
<td>Non-significant</td>
<td>0.22</td>
<td>11</td>
<td>degree</td>
<td>Backhand clear stroke</td>
</tr>
</tbody>
</table>

Where: \(n_1=4, n_2=4\), and the Significance level (0.05).

**2-4 Tools and devices used in the research:**

1. Two integrated badminton courts.

2. (30) Yonex badminton rackets.

3. (10) Yonex boxes of shuttlecocks, tennis and squash balls.

4. (10 roll) of Colored tape.


7. (24) tennis and squash rackets.

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8- (10 boxes) of tennis balls.
9-(10 balls) of volleyball
10- (2 Chinese) stop watches.
11-Pillars and strings (3m) high
12-Tests
13- Questionnaire.
14- Forms for data dump.

2-5 Skills Tests:

1- Forehand clear Stroke Test(2).

-Test's name: Forehand clear stroke.
-Test's purpose: Measuring the forehand clear stroke.
-The required tools: Badminton rackets, string, additional pillars of (244cm) high, information form, a marked court designed for the test as in figure(1).

-Description of Performance:

1- After explaining the test to the testers, they have appropriate time for warm-up, then every tester has (5) experimental attempts.

2- The tester stands in the (x) marked area.

3- At the moment, the coach serves the shuttlecock for the tester; he can transfer if it's necessary to go through the attempt successfully. He has to hit the shuttlecock with the forehand clear stroke (from above the head) to serve it above the net and the string towards the area marked with degrees.

4- The tester has (12) attempts; only the best attempt is counted.

Evaluation of Performance:-

1- The tester has (3) points if the shuttlecock falls in the (50 cm) marked area, after the court back line.

2- The tester has (5) points if the shuttlecock falls in the (76 cm) marked area, between the court back line and the far doubled serving line.

3-The tester has (4) points if the shuttlecock falls in the (70 cm) marked area, after the far doubled serving line.

5- The tester has (2) points if the shuttlecock falls in the (124 cm) marked area which starts from the end of point(4) till the imaginary line stretched below the string.

(2)Moeen Mohamed Taha, the impact of training program with shuttlecocks of different speeds on developing the badminton skills. PhD thesis, University of Baghdad, Faculty of Physical Education, 2001, p: 64.
5- The highest point is given if the ball falls on the line between two points, but no point is given to the shuttlecock if it falls outside the court boundaries or hangs on the net.

6- The maximum limit of points, which the tester can have in the best (10) attempts, is (50) points.

Figure (1) shows the badminton court designed for the forehand clear stroke test

2- The backhand clearstroke test: (3)

Test’s name: backhand clear strokes.

Test's purpose: measuring the accuracy of backhand clear strokes.

Required tools: a marked badminton court as in figure (1), badminton rackets, tape, measuring tape, information form and shuttlecocks.

Description of performance:

1- After explaining the test to the testers, they have appropriate time for warm-up, then every tester has (5) experimental attempts.

2- The tester stands in the (x) marked area.

3- The coach serves the shuttlecock towards the tester left (if he holds the racket with his right hand and vice versa) so that he can hit the forehand clear stroke.

4- The tester has (12) attempts; only the best attempt is counted.

5- The tester can Transfer to go through the attempt successfully, as well as, he can leave any shuttlecock which he thinks it’s worthless to receive. If the coach thinks his serving is incorrect, he calls for (replay) and no attempt is counted.

6- The maximum limit of points, which the tester can have in the best (10) attempts, is (40) points.

(3) Mazen Hadi Kazar, The Effect of Skilled Mental and Physical Training on Accuracy and Speed of Kinetic Responsiveness of Badminton Players, Master Thesis, Babylon University, Faculty of Physical Education, 2003, pp. 50-51.
Evaluation of Performance:

1- The tester has (1) points if the shuttlecock falls in the (198 cm) marked area stretched from the center line of the court below the net till the near serving line.

2- The tester has (2 or 3) points if the shuttlecock falls in the (198 cm) marked area which starts from the near serving line till the far double serving line.

3- The tester has (4) points if the shuttlecock falls in the (76 cm) marked area stretched after the court ending line.

4- The tester has (2) points if the shuttlecock falls in the (80 cm) marked area which separates between the far double serving line and the near individual serving line.

5- No point is given to the shuttlecock if it falls outside the court boundaries or hangs on the net.

Figure (2) shows the badminton court designed for the backhand clear stroke test.

2-6 Exploratory experience:

Date of Experience: 3/6/2019 a.m.

Place of Experience: The closed hall in Al-Mahweel district, Babylon Province.

The Sample: The exploratory sample consisted of (4) players of the training center in Babylon Province.

The Experience Objectives:

1- Introducing the assistant team to the tests nature and determining the extent of its efficiency.

2- Avoiding the obstacles that the researcher may face during carrying out the tests.

3- Finding out the approximate time for each test and the time taken for all the tests.

4- Ensuring the scientific transactions of the tests.

5- Identifying the appropriate time for the used exercises.

6- Determining if the exercises fit the individual sample or not.
2-7 The Exercises Used in the Research:

The researchers used a group of exercises of some games (volleyball, tennis, squash) aiming to increase the effectiveness of the kinetic program by performing skills in different extents (Parameters) and at different speeds, heights and directions to help provide the largest number of kinetic programs stored in the brain. The researcher also relied on the phenomenon of transferring the learning impacts through performing volleyball, tennis and squash exercises similar in the kinetic path to the skill of forehand and backhand clear strokes. The main experiment was applied on 5/6 till 8/7/2019 in The closed hall in Al-Mahweel district, Babylon Province where the experimental group had exercises of (volleyball, tennis, squash and exercises of forehand and backhand clear strokes), while the control group had only exercises of (forehand and backhand clear strokes of badminton). The researchers intervened on the main part of the educational unit time which was about (40) minutes as the individuals of the experimental group practiced (volleyball, tennis and squash exercises) for (24 minutes) + (forehand and backhand clear strokes with badminton) for two units a week.

2-8 the post- Tests

The post- tests of the forehand and backhand clear strokes of the badminton were applied on the two research groups, on 10/2/2019, in the closed hall in the of Mahaweel district, Babylon province, and at ten in the morning.

2-9 Statistical Means:

*The statistical pouch (SPSS) was used to analyze the research data as follows:*

Arithmetical mean, standard deviation, percentage, Ca2 test, Whitney Test - Wilcoxin Test and Spearman Test.

3-Showing, analyzing and discussing of the results:

3-1 showing and analyzing of the pre- and post- test of the research groups for the skills tests:

After collecting the pre- and post-test data of the skill tests and the two research groups, in order to describe the results of the sample members, the researcher processed the data statistically using the Statistical dispersion and fragmentation measures. The researcher used the Wilcoxin test to know the significant differences between the pre- and post- tests of the two research groups as shown in tables (2) and (3).

<table>
<thead>
<tr>
<th>Significance type</th>
<th>Significance level</th>
<th>the calculated value of Wilcoxin</th>
<th>Pre-test n</th>
<th>Post-test n</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>significant</td>
<td>0.03</td>
<td>2.21</td>
<td>3.0928</td>
<td>2.11</td>
<td>20.5</td>
<td>Forehand clear stroke test</td>
<td></td>
</tr>
<tr>
<td>significant</td>
<td>0.02</td>
<td>2.222</td>
<td>2.1124</td>
<td>2.91</td>
<td>19</td>
<td>Backhand clear stroke</td>
<td></td>
</tr>
</tbody>
</table>
N=4, Significance level (0.05)

Table (3)

Shows the arithmetical mean value, standard deviation, the calculated value of Wilcoxin for pre- and post-tests and for the control group

<table>
<thead>
<tr>
<th>Significance type</th>
<th>Significance level</th>
<th>the calculated value of Wilcoxin</th>
<th>Post-test</th>
<th>Pre-test</th>
<th>tests</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>n</td>
<td>h</td>
<td>n</td>
</tr>
<tr>
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<td>0.00</td>
<td>2.203</td>
<td>2.47</td>
<td>39</td>
<td>2.11</td>
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<tr>
<td>significant</td>
<td>0.00</td>
<td>2.211</td>
<td>1.13</td>
<td>30</td>
<td>1.39</td>
</tr>
</tbody>
</table>

N=4= significant level (0.05).

3-2 Discussing the results of the pre- and post-tests of the research groups in the skills tests

From presenting and analyzing of the skills tests in the pre- and post-test, which are shown in Table (2 and 3), it was found that there are significant differences between the two groups for the benefit of the post-tests. The researchers attribute the evolution of the experimental group to the use of similar exercises to learn skills as using serving exercises of volleyball, tennis and squash that are similar to the skills of forehand and backhand clear strokes of badminton as "Whenever there are common factors between the subjects, exercise or training impacts on the speed of learning the other subject." (4) Also, the repetition of similar exercises during the educational units helped to learn and consolidate the basic skills of badminton as 'learning similar movements in terms of repetition results in an easy and positive transferring to the maximum degree of learning." (5) The developing in the control group results is attributed to the approach prepared by the coach.

3-3 Showing and analyzing of the post-test results of the research groups in the skills tests

Table (4)


(5) Abdul Rahman Adas and Mohiuddin, see the previous reference, p:142.
3.4 discussing the results of the post-tests of the research groups in the skills tests

The reason for the superiority of the experimental group over the control group is using exercises similar to the basic skills of badminton during the educational units, which included (volleyball serving, tennis serving, and stroke over the head in squash). Similarity of kinetic paths between skills resulting in creating neuromuscular compatibilities which led to perfect and stability which in turn lead to skill developing as using the kinetic compatibility for a long time and continuous repetition will lead to getting used to the framework of the kinetic, temporal and ideal paths. The diversity of practice of a particular skill within a kinetic duty results in increasing experience, developing the mental and physical ability and possessing a store of information that can be referred to in modifying or changing. The positive transferring of the research skills is due to the similarity and likeness between the skill of overwhelming strokes and volleyball and tennis serving, which led to easy learning skills and positive transferring. Diversity and complexity of the kinetic models are necessary to enable us to face the changeable needs of the skills and this is consistent with Thordike's theory of identical elements, which states that "transferring is positive whenever the similarity and likeness is greatly much in the elements of skills, whether in variables or responses or stimulants and responses together in both skills in which the transferring is required."

4- Conclusions and Recommendations

4-1- The Conclusions:

(6) Qasim Hassan Hussein; Physiology, Principles and Applications in the Field of Sports (Mosul, Dar Al-Hekma for printing and publishing, 1991), p: 47

(7) Wissam Salah Abdel Hussein, Badminton between Practice and Competition, Amman, Dar Radwan for printing and publishing, 2013, p 139.

1-The diversity of some skills practice (volleyball, tennis and squash serving) has had a positive impact on developing forehand and backhand clear strokes in badminton.

2-The experimental group trained on volleyball, tennis, squash and badminton exercises in the post-test outperformed the control group.

4-2 The Recommendations:

1- Emphasizing the scientific and programmed method of learning in order to facilitate and help in the educational process.

2- Ensuring the benefit of the phenomenon of transferring learning impacts between skills with kinetic and similar path, as well as, the benefit of time investment.

3-Performing similar studies on different samples and ages.

References


- Qasim Hassan Hussein; Physiology, Principles and Applications in the Field of Sports (Mosul, Dar Al-Hekma for printing and publishing, 1991).


- Wissam Salah Abdel-Hussein, the impact of a training curriculum in the correction of technical errors and the development of some mental abilities and the accuracy of some basic skills of badminton for youth, PhD thesis, University of Babylon, Faculty of Physical Education, 2011.


- Moeen Mohamed Taha, the impact of training program with shuttlecocks of different speeds on developing the badminton skills. PhD thesis, University of Baghdad, Faculty of Physical Education, 2001, p: 64.


Appendix (1)
Models of the exercises used in the research

1- The coach stands against a player on the left side of the court and performs a forehand clear stroke, (8) attempts at one repetition. C: the coach, p: the player.

2- The coach stands against a player on the left side of the court and performs a backhand clear stroke, (8) attempts at one repetition. C: the coach, p: the player.

3- A player on the left side of the court hits the backhand clear stroke and a player in the middle hits the forehand clear stroke (one side to two sides) while touching the serving line. C: the coach, p: the player.
4- Player vs. another player. One player hits the forehand clear stroke straight forward and the other player hits the forehand clear forward diagonally and return to the middle of the court for both players after each stroke. C: coach, p: player

<table>
<thead>
<tr>
<th>Tennis</th>
<th>Exercise name</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Throw the ball to the top while holding the racket with the other hand.</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Swinging back and hit the ball forward</td>
<td>2</td>
</tr>
</tbody>
</table>