The effect of group competitive learning strategy to development motor response speed and blocking skill of volleyball for students

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Abstract

Given that this age group is the foundation and the basis for selecting good players in the future, the research's significance lies in the employment of the group competitive learning approach to increase the speed of motor reaction and the skill of blocking volleyball skill for the third intermediate students. As for the problem of the research, from the experience of the researcher in the field and his continuous follow-up as a player, as well as being a teacher in the General Directorate of Education of Najaf, he found that there is difficulty in learning the skill of blocking volleyball for students, as well as slowness in the motor response when performing that skill, and the research believes that the reason for that is The lesson lacks modern teaching methods and strategies, which leads to a slow process of learning motor skills, which prompted the researcher to delve into this problem as a new scientific attempt to develop the speed of motor response as well as the skill of blocking volleyball.

The research's objectives were to establish a group competitive learning approach for volleyball and to determine how it affected the third-year intermediate students' ability to blocking skill of volleyball and to respond motorically.

The researcher used the experimental approach with two experimental groups due to its suitability to the research problem. The researcher chose the research sample as it was by the intentional method and they are the students of the third intermediate grade, as the sample size reached (40) students and they were divided into two experimental and control groups, i.e., Group competitive learning has an impact on the development of students' motor response speed, and the researcher reached the most important conclusions, including. The group competitive learning strategy helped in learning the volleyball skill students, the experimental group members achieved preference over the control group members in the post-tests, and the researcher reached recommendations, including, for the benefit of students and society, conducting similar studies on other activities and different age groups.

Keywords: Respond motorically, conclusions, including

1. Introduction

What distinguishes physical education and sports is its different levels and the multiplicity of its purposes, being renewable and changing with the change of human patterns and civilizational progress. The need to confront, overcome and treat its problems remains an urgent necessity in order to achieve a better level. We care about renewal and continuous development by using new and diverse educational methods and methods, and not adhering to traditional educational practices just because they are the most common.

One sport that a lot of sports enthusiasts and followers are interested in is volleyball. It is a game that is unpredictable in terms of movement repetition, yet student moves vary depending on the playing locations. The effectiveness of the nervous system in collecting information and the speed of operations in carrying out suitable responses with motor and skill duties thus become more crucial. Depending on the various playing circumstances.

Therefore, the researcher was keen on innovation and development in finding educational methods for the purpose of achieving the best level of learning, and in order to increase the effectiveness of education, attention must be paid to methods that develop the ability to learn
by finding appropriate solutions that are compatible with the level of learners and containing the lesson of physical education to be more effective by paying more attention to it. And the development of new programs and curricula accompanied by special exercises, means, tools and ideas that increase student learning, which is one of the most important encouraging and enjoyable factors to accelerate the process of learning the basic skills of games.

Learning methods and methods are sciences that are characterized by comprehensiveness and diversity that lead the learner to achieve better performance. Therefore, teachers must pay attention to teaching skills well and invent new methods and methods that help in the process of learning skills by learners, which would contribute to the development of students’ response speed and this. It reflects positively on learning the basic skills of volleyball, including the blocking skill, leading to the correct performance to achieve the main goal.

Given that this age group is the foundation and the basis for selecting good players in the future, the research's significance lies in the method of group competitive learning to build the motor response and the talent of blocking the volleyball wall for the third intermediate students.

1.1 Research problem
From the experience of the researcher in the field and his continuous follow-up as a player, in addition to being a teacher in the General Directorate of Education of Najaf, he found that there is difficulty in learning the skill of blocking volleyball for students as well as slowness in the motor response when performing that skill, and the research believes that the reason for this is the lesson’s lack of methods and strategies Modern teaching, which leads to a slowdown in the process of learning motor skills, prompting the researcher to delve into this problem as it is a new scientific attempt to develop the speed of motor response as well as the skill of blocking volleyball.

1.2 Research Objectives
1. Preparing a strategy for group competitive learning in volleyball.
2. To determine how the group competitive learning method affects the third-level intermediate students’ ability to block skill of volleyball by improving their motor reaction and blocking technique.

1.3 Research hypotheses
1. There are statistically significant differences between the pre and post-tests of the experimental and control groups in the motor response speed and the volleyball blocking skill of the third intermediate students.

1.4 Research field
1.4.1 The human field
A sample of students (third intermediate grade) of Kufa High School for Outstanding Boys in Najaf Governorate.

1.4.2 Time field

1.4.3 The spatial field
Kufa High School Square for Outstanding Boys.

2. Research Methodology and Field Procedures
2.1 Research Methodology
Due to its suitability to the nature of the problem to be solved, the researcher used the experimental method in the form of two equal groups with a pre and post-test. As a result, it is regarded as one of the most sufficient means in order to obtain accurate information and results in order to reach reliable knowledge. Resulting in both this specific fact and its interpretation. (Ibrahim, Amer, 2015, p. 166) [1].

2.2 Research community and sample
The researcher chose the research sample by the intentional method, and they are the students of the third intermediate grade of Kufa High School for outstanding students, as the sample size was (40) students, and they were divided into two experimental and control groups, i.e. (20) students for each group.

2.2.1 Homogeneity and equivalence of the sample in the research variables
The researcher conducted homogeneity among the sample members according to the variables (age, height, weight) to reduce the impact of these variables on learning outcomes, according to what he sees (Obaidat el. al., 1998, p. 346) "The control and experimental groups are completely homogeneous in all conditions except for the experimental variable." affecting the experimental group. The homogeneity of the research sample was carried out to adjust the variables by means of the torsion coefficient, as shown in Table (1).

Table 1: Demonstrates the consistency of the variables in the research sample (age, Length, weight):

<table>
<thead>
<tr>
<th>N</th>
<th>Variables</th>
<th>Measuring unit</th>
<th>Mean</th>
<th>Median</th>
<th>Std. deviation</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Age</td>
<td>Year</td>
<td>14.8</td>
<td>14.9</td>
<td>0.74</td>
<td>0.40</td>
</tr>
<tr>
<td>2</td>
<td>Length</td>
<td>Cm</td>
<td>166.2</td>
<td>166</td>
<td>1.35</td>
<td>0.444</td>
</tr>
<tr>
<td>3</td>
<td>weight</td>
<td>Kg</td>
<td>61.6</td>
<td>61.8</td>
<td>1.42</td>
<td>0.422</td>
</tr>
</tbody>
</table>

According to Table (1), the torsion coefficient values for the aforementioned test ranged between (+1), proving that the sample had a normally distributed population.

2.3 Tools and methods used in the research
2.3.1 Equipment and tools
- (1) Sony cameras of Japanese origin.
- (1) Casio manual electronic calculator.
- Electronic stopwatch (Fox) (1)
- Weight measuring device (Chinese origin) number (1).
- (1) Dell computer, of Chinese origin.
- A legal volleyball court with its requirements.
- (1) (5 m) metallic length measuring tape.
- Volleyballs of Chinese origin, number (20).
- Adhesive tape width (5 cm) coloured.
- Plastic cone number (10).

2.3.2 Methods of collecting information: For the purpose of collecting data and information and reaching the truth, the researcher used the following means
- Arabic and foreign sources and references and the international information network (the Internet).
- The names of the experts and specialists whom the researcher used.
2.4 Field Research Procedures

2.4.1 Determining the research variables: The research variables were chosen through the researcher's experience, which was represented in the following:

1. Motor response speed.
2. Blocking skill of volleyball.

2.4.2 Determine the tests for the research variables

2.4.2.1 Nelson's motor response test. (Al-Sumaidie, Luay Ghanem and others, 2012, p. 411) [3].

- **The aim of the test**: Gauging quickness of response and movement in accordance with the stimulus test.
- **Tools**: an area of land with a width of (2) meters and a length of (20) meters, a measuring tape, and a stop watch.

**Description of performance**

- Three lines are planned for the test area, with a distance of 6.40 metres separating each line from the next and a length of 1 metre for each line.
- The student is positioned facing the referee at one end of the centre line, who is positioned at the opposite end.
- The learner assumes the ready stance, bending slightly forward at the midline between the feet and the body.
- The referee raises the stopwatch to its highest point in one of his hands, quickly moves his arm to the right or left, and simultaneously starts the timer.
- The student responds to the start signal and runs as quickly as possible to reach the side line at a distance of (6.40 m) from the center line.
- When the student crosses the correct side line, the referee stops the clock.
- When a student starts running in the opposite direction, the referee runs the clock until the player changes direction and reaches the side line.
- The student has (5) efforts with (10) attempts between each attempt and a subsequent (20) second attempt.
- We choose the trials in each side in a random, sequential manner.

**Test conditions**

- The student is given a number of attempts outside the measurement in order to learn about the measurement procedures.
- The student must not know that he is required to perform (10) attempts distributed (5) attempts in each direction to limit the student's location.
- The student must be informed that the number of attempts he will make are not distributed equally in both directions and that it is possible that he will make more attempts in one direction than the other. Additionally, the student must be informed that the order in which the attempts are made is random and differs from student to student, as in Figure (1).

**Registration**

The time for each attempt is calculated, and the student's score is the average of the ten attempts.

![Fig 1: Shows the Nelson motor response test](image)

2.4.2.2 Technical performance evaluation test for blocking wall skill: (Farid, Saddam Muhammad, 2006, p. 69) [4].

- **The aim of the test**: to evaluate the technical performance of the blocking wall skill based on the skill's three portions (preparatory, main, and final), which appear to be its structure.
- **Tools used**: A legal volleyball court, legal volleyballs number (3), a video camera type (Samsung), seats number (3), as shown in Figure (2).
Fig 2: Shows the evaluation of the technical performance of the volleyball blocking skill

Performance specifications
The three seats are placed in centres (2, 3, and 4) in a row, at a distance of (50 cm) from the net, as an assistant stands on each seat holding the ball with both hands above the level of the net at a height of approximately (30 cm).
- There is an identical lateral spacing between the three chairs (2.25 m).
- The test subject moves from centre (3) to centre (4) when the start signal is given to touch the ball over the net with both hands, then moves back to centre (3) and then to centre (2) to do the same action, respectively.

Performance Conditions: Each laboratory student is given (3) consecutive attempts.

Registration
Each lab student’s three tries are recorded on camera, and after that, they are shown to three experts and specialists for evaluation. The best mark for each assessor is then picked, and the final grade for each lab student is computed by taking the average of the top three grades, taking into account that the total grade for each attempt is (10) grades.

2.5. Exploratory experience
After providing them with introductory units about the nature of the tests on the Kufa High School Arena for outstanding students, the researcher conducted the first exploratory experiment of the tests used in the research on (17/10/2022) on a random sample of eight students who did not take part in the main experiment. The experiment was designed to determine what Comes Out of the Tests:

Table 2: Shows the equivalence of the sample in the research variables:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Measuring unit</th>
<th>Experimental</th>
<th>Control</th>
<th>T value</th>
<th>Sig level</th>
<th>Sig type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor response speed</td>
<td>Second</td>
<td>Mean 1.976</td>
<td>Mean 1.989</td>
<td>0.383</td>
<td>0.710</td>
<td>Non sig</td>
</tr>
<tr>
<td>volleyball blocking skill</td>
<td>Degree</td>
<td>Mean 4.700</td>
<td>Mean 4.540</td>
<td>0.841</td>
<td>0.405</td>
<td>Non sig</td>
</tr>
</tbody>
</table>

2.6.3 The main experience
In the first semester of the academic year (2022-2023), from 30/10/2022 to 25/12/2022, the researcher created and put into practice a group competitive learning strategy that contained tasks for the experimental group’s single and double learning styles.

The researcher took into account when setting up the educational units, some foundations and principles in education, as follows:
- Defining objectives for each educational unit.
- The educational unit should achieve one or more educational goals.
- That each exercise of the educational unit works to achieve its objectives.
- Determine the times allocated for each exercise.

2.6.4 Post-tests
On the day (2-3/1/2023), the researcher conducted the post-tests for the two groups (experimental and control) after completing the educational curriculum and its eight units, while taking into account all of the pre-test conditions, procedures, and circumstances, including the location, resources, method of implementation, and the assistant team itself. In order to produce precise findings.

2.7 Statistical means
The researcher used statistical methods to process the data by using the statistical bag (SPSS).
- Mean.
- Standard deviation.
- Torsion coefficient.
- (t) test for correlated and independent samples.

3. Presentation, analysis and discussion of the results: -
3.1. Presentation and analysis of the results of the pre and post-tests of motor response speed and repelling skill for the experimental and control groups
3.1.1. Presentation and analysis of the results of the pre and post-tests of the experimental group for the speed of the motor response and the skill of blocking the volleyball ball:

Table 3: Shows the arithmetic mean, standard deviations, and (T) value of the pre and post-tests of the experimental group for the motor response speed and the skill of blocking the volleyball

<table>
<thead>
<tr>
<th>Variables</th>
<th>Measuring unit</th>
<th>Pre-test Mean</th>
<th>Pre-test Std. deviation</th>
<th>Post-test Mean</th>
<th>Post-test Std. deviation</th>
<th>T value</th>
<th>Sig level</th>
<th>Sig type</th>
</tr>
</thead>
</table>

~ 34 ~
3.1.2. Presentation and analysis of the results of the pre and post-tests of the control group for the speed of the motor response and the skill of blocking the volleyball ball

Table 4: Demonstrates the mean, standard deviations, computed (T) value, and significant values for the motor response speed and volleyball blocking skill in the before and post-testing for the control group.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Measuring unit</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>T value</th>
<th>Sig level</th>
<th>Sig type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>Std. deviation</td>
<td>Mean</td>
<td>Std. deviation</td>
<td></td>
</tr>
<tr>
<td>Motor response speed</td>
<td>Second</td>
<td>1.976</td>
<td>0.084</td>
<td>1.771</td>
<td>0.502</td>
<td>6.456</td>
</tr>
<tr>
<td>Volleyball blocking skill</td>
<td>Degree</td>
<td>4.700</td>
<td>1.031</td>
<td>7.250</td>
<td>0.954</td>
<td>7.226</td>
</tr>
</tbody>
</table>

3.1.3 Presenting and analyzing the results of the post-tests for the experimental and control groups in the motor response speed and volleyball skill tests

Table 5: Shows the arithmetic mean, standard deviations, calculated (T) value, and significance values in the posttests for the two experimental and control groups of motor response speed, and volleyball blocking skill.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Measuring unit</th>
<th>Experimental</th>
<th>Control</th>
<th>T value</th>
<th>Sig level</th>
<th>Sig type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>Std. deviation</td>
<td>Mean</td>
<td>Std. deviation</td>
<td></td>
</tr>
<tr>
<td>Motor response speed</td>
<td>Second</td>
<td>1.771</td>
<td>0.502</td>
<td>1.857</td>
<td>0.607</td>
<td>2.943</td>
</tr>
<tr>
<td>Volleyball blocking skill</td>
<td>Degree</td>
<td>7.250</td>
<td>0.954</td>
<td>6.800</td>
<td>1.913</td>
<td>5.784</td>
</tr>
</tbody>
</table>

4. Discussing the results
It is clear from the results presented in the tables above, which included the results of the tests, the speed of the motor response, and the skill of the blocking wall in volleyball for the control and experimental groups, which achieved their goals. Teaching physical education.

As for the moral difference of the owners of the experimental group, the researcher attributes it to the group's competitive learning strategy prepared by the researcher and implemented from (8) educational units, as all the results of the tests after statistical treatments have proven significant in favour of the post-tests.

According to the researcher, the experimental group's usage of a group competitive learning method during the instructional units helped students master the volleyball skill of blocking the wall and improve the speed of their motor responses. Likewise, the reaction to that stimuli. 'The speed of the motor response is necessary for the student in the game of volleyball, as he needs the speed of response in response to what the opponent will do,’ state (Abdel-Fattah, Abu El-Ela Ahmed, 2000, p. 89) [3] and (Sakhy, Ali Sabhan, 2004, p. 15) [4]. The capacity to rotate, fly, and roll without losing his skill or physical level, as well as the speed of his movements in various directions, all play a role in this.

The researcher believes that the group competitive learning strategy develops the student's motor response speed as well as the technical performance of the volleyball blocking skill as well as helps in gaining experiences for students and that its use in the lesson stimulates the desire to participate and increases the focus of students’ attention and thus attracts them in a fun and interesting way.

The researcher also believes that the main reason for the moral difference between the members of the experimental and control groups in the post-tests is due to the strategy of group competitive learning, as it contributes greatly to independence, self-learning, etc., and this is what contributed to making that difference.

5. Conclusions and recommendations
5.1 Conclusions
By presenting, analyzing and discussing the results, the following conclusions were reached.

1. The group competitive learning strategy has an impact on developing students' motor response speed.
2. The group competitive learning strategy helped in learning the volleyball blocking skill for students.
3. In the follow-up tests, the experimental group outperformed the control group.

5.2 Recommendations
As a complement to the conclusions of the current research, the researcher recommends the following:
1. Emphasising the use of the group competitive learning technique, which is more effective at all educational levels and is a crucial component of curriculum content.
2. The need to pay attention to the study of the current physical education curricula in middle school due to the need for a comprehensive review for the benefit of students and society.
3. Carrying out comparable research on various age groups.

6. References