



## The effect of special exercises on the speed of motor response and performance of the snatch skill for wrestling players under (16) years old

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### Abstract

The problem of the research is that the level of performance of wrestling players is not at the required level, and from the researcher's point of view, he believes that one of the reasons for this is due to the weakness of the player's response speed, since wrestling requires a quick reaction, through which the wrestler's level of skill performance can improve. The research aimed to prepare special exercises and know their effect on the speed of motor response and performance of the snatch skill for wrestling players aged under (16) years old. It was assumed that there are statistically significant differences between the experimental and control groups in the post-tests in both the speed of motor response and the level of performance of the snatch skill. The researcher used the experimental method by designing two equivalent experimental and control groups with a pre-test and post-test, on a sample of wrestling players under (16) years old, numbering (14) players. The variable of response speed and snatch skill in wrestling was tested for the research sample after the completion of the main experiment. After processing the data statistically, the researcher concluded that the exercises prepared by the researcher proved effective in improving the speed of motor response and the snatch skill of the players.

**Keywords:** special exercises on the speed, motor response, snatch skill, wrestling.

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## Introduction

Wrestling is an individual sport characterized by its many grips and various basic defensive and offensive motor skills. It depends on the wrestler's physical, skillful, tactical and psychological abilities to achieve the best results, as proper scientific training is the main factor in achieving the performance of basic sports skills with high accuracy, and higher mental processes will affect the level of psychological preparation of players, including attention, perception, speed of reaction and others. The speed of motor response is considered one of the important physical qualities in most sports activities, and activities differ among themselves in the extent of their need for it according to the special requirements of each activity, and it is one of the important qualities that a wrestling player needs, so the importance of the research lies in the use of special exercises through which we can develop the skill, physical and mental aspects of the player, because the game of wrestling requires other conditions that the young wrestler is exposed to in order to achieve technical grips in a way through which he can perform at a high level and confuse the competitor and overcome him. As for the problem of the research, through the researcher's field follow-up, he noticed that the level of performance of wrestling players is not at the required level, and from the researcher's point of view, he sees that one of the reasons for this is due to a weakness in the player's speed of response, since the game of wrestling requires a quick reaction through which the wrestler's level in his skill performance can improve, so the researcher decided to prepare special exercises that develop the skill and physical aspect of him. The research aimed to prepare special exercises and know their effect on the speed of motor response and performance of the snatch skill among wrestling players aged under (16) years. The research hypotheses included that there are statistically significant differences between pre-and post-tests of the experimental and control research sample in the speed of motor response and the level of performance of the snatch skill. There are also statistically significant differences between the experimental and control groups in the post-tests in both the speed of motor response and the level of performance of the snatch skill. In this field, some studies were conducted, including the study (Hazem Abdel Karim) which aimed to identify the degree of visual selective attention among university students and the statistical differences in the degree of selective attention according to the variable of gender, specialization and the degree of cognitive failures among university students. The most important results were that university students enjoy visual selective attention and low cognitive failures among them and that the relationship between visual selective attention and cognitive failures is an inverse relationship, and the study (Linda Mahmoud Al-Jumaili) Which aimed to identify the effect of exercises with a dummy device of different intensities on some snatch holds from above the chest for wrestling juniors. The most important results were reached, which are that exercises with a dummy device of different intensities have a positive effect on developing some over-the-chest throw holds (snatch)

## Method and tools:

The experiment was conducted in Al-Kadhimiya Sports Wrestling Club. The researcher used the experimental method by designing two equivalent groups, experimental and control, with pre-test and post-test, on a sample of wrestling players under (16) years of age, numbering (14) players. By lottery, they were divided into two experimental and control groups (7) players in each group. Before starting with one starting line, an equivalence test was conducted in the research variables, including the speed of motor response and the skill of snatching to start with one starting line, as shown in Table.(1)

Table(1)

Shows the arithmetic means, standard deviations, and calculated t-value for the research variables in the pre-test.

| Significance | Error level | Calculated value(t) | control group |       | experimental group |       | Unit of measurement | Variables            |
|--------------|-------------|---------------------|---------------|-------|--------------------|-------|---------------------|----------------------|
|              |             |                     | A             | Q     | A                  | Q     |                     |                      |
| random       | 0.102       | 1.770               | 0.040         | 1.845 | 0.041              | 1.884 | second              | motor response speed |
| random       | 0.626       | 0.500               | 0.534         | 7.428 | 0.534              | 7.571 | degree              | Snatching skill      |

Significant (0.05) > at (12) degrees of freedom.

A variety of tools, equipment, and methods were used, including a performance evaluation form, the internet, observation and experimentation, a computer, a recording camera, and a wrestling mat. Before beginning the experiment, the researcher prepared a series of specific exercises aimed at improving the level of performance in the wrestling snatch skill and also developing the players' motor response speed, relying on scientific sources.

Tests used in the research:

-1 Nelson's motor response test:

- Test objective: To measure motor response speed.
- Test specifications: The test area is marked with three lines, the distance between each line is (6.40) m, and the length of each line is (1 m).
- Performance Method: The examiner stands at the end of the middle line facing the referee who is standing at the other end of the line. The examiner assumes a ready position with the middle line between the feet and his body bends forward so that he assumes a ready position for the start.

The referee holds the stopwatch in one hand and raises it up, then quickly moves his arm either to the right or to the left, simultaneously starting the watch.

The test subject responds to the hand signal and tries to run as fast as possible in the specified direction to reach the side line which is (6.40) m away from the centre line.

- When the tester crosses the correct side line, the referee stops the clock.
- If the tester starts running in the wrong direction, the referee continues to run the clock until the tester changes direction and reaches the sideline.
- Registration method:
  - The tester gives (10) consecutive attempts, with a rest period of (20) seconds between each attempt, at a rate of five random attempts.
  - Trials are randomly selected on each side.
  - The final grade for the test is calculated from the sum of the ten side attempts.

-2Wrestling Snatch Skill Test: The snatch skill test was conducted based on the evaluation of the skill level of performance (10) points for performance, as shown in Appendix (1), which shows the performance evaluation form [1]. The performance was evaluated by three experts in wrestling, and the arithmetic mean of the score was taken.

The researcher conducted two exploratory experiments on a sample of wrestling players, numbering (2) players outside the research sample. The first exploratory experiment was for educational units using special exercises, and it was on (Monday) corresponding to (9/9/2024). As for the second exploratory experiment, it was for the skill test and motor response speed, and it was on (Wednesday) corresponding to (9/11/2024). After that, the pre-tests were conducted for the research sample (experimental and control) with variables in Al-Kadhimiya



Sports Club on (Saturday) corresponding to (9/14/2024) at (5:00 PM). The conditions related to the tests were fixed in terms of time and place, and the tests were photographed to be presented to experts for the purpose of evaluating them. The special exercises were applied to the experimental group, as it took a month to implement, at a rate of three educational units per week for each group of the research groups, starting from (Monday) corresponding to (9/16/2024) until (Monday) corresponding to (10/14/2024), so that the number of educational units would be (12) units, as The duration of the educational unit was (90) minutes, where special exercises were applied in the main part of the educational unit with the help of the assistant work team and under the supervision of the researcher, who was divided into the applied and educational sides, as follows:

-1The preparatory section: its duration is (20 minutes) and includes organizational activities and warm-up.

-2The main section: its duration is (65 minutes) and it includes:

-The educational aspect: Its duration was (15 minutes). In this section, the specialized grips for each player were explained and presented by the coach.

-The practical side: Its duration was (50 minutes) and the grips were applied according to the exercises prepared by the players.

-3The final section: It lasts (5 minutes) and includes some calming exercises for the body, in addition to educational instructions, then the class ends.

After completing the implementation of the educational units, the post-test was conducted on the research sample in the research variables and under the direct supervision of the researcher on (Wednesday) corresponding to (10/16/2024). The researcher was keen for the post-tests to be under the same conditions in which the pre-tests were conducted in terms of the assistant work team, time, place, tools, and calculating the score in the same way as in the pre-test and by the same evaluating committee. The following statistical methods were used in processing the data- :

Arithmetic mean.

| Variables                  | Pre-test  |            | Post-test |           | F         | F H       | (T)<br>calculate<br>d | moral<br>significanc<br>e | the<br>differenc<br>e |
|----------------------------|-----------|------------|-----------|-----------|-----------|-----------|-----------------------|---------------------------|-----------------------|
|                            | Q         | A          | Q         | A         |           |           |                       |                           |                       |
| motor<br>response<br>speed | 1.88<br>4 | 0.041<br>1 | 1.63<br>2 | 0.03<br>2 | 0.52<br>1 | 0.06<br>5 | 10.089                | 0.000                     | spiritual             |
| Snatchin<br>g skill        | 7.57<br>1 | 0.534      | 9.42<br>8 | 0.53<br>4 | 1.85<br>7 | 0.37<br>7 | 13.000                | 0.000                     | spiritual             |

-Standard deviation.

\_T-test for independent and equal samples.

Independent samples t-test.

Results: Displaying the results of the pre- and post-tests for the experimental group.

Table(2)

It shows the arithmetic mean, standard deviation, and t-test for the experimental group in the pre- and post-tests.

Significant (0.05) > at (6) degrees of freedom

Table(3) Shows the arithmetic mean, standard deviation, and t-test for the control group in the pre- and post-tests.

| Variables                  | Pre-test |       | Post-test |       | F     | F H   | (T)<br>calculated | moral<br>significance | the<br>difference |
|----------------------------|----------|-------|-----------|-------|-------|-------|-------------------|-----------------------|-------------------|
|                            | Q        | A     | Q         | A     |       |       |                   |                       |                   |
| motor<br>response<br>speed | 1.845    | 0.040 | 1.740     | 0.053 | 0.105 | 0.031 | 9.018             | 0.000                 | spiritual         |
| Snatching<br>skill         | 7.428    | 0.534 | 8.571     | 0.534 | 1.142 | 0.899 | 3.361             |                       | spiritual         |

Significant (0.05) > at (6) degrees of freedom.

Table(4)

Shows the arithmetic means, standard deviations, and calculated t-value for the research variables in the post-test.

| Significance | Error level | Calculated value(t) | control group |       | experimental group |       | Unit of measurement | Variables            |
|--------------|-------------|---------------------|---------------|-------|--------------------|-------|---------------------|----------------------|
|              |             |                     | A             | Q     | A                  | Q     |                     |                      |
| spiritual    | 0.001       | 4.525               | 0.053         | 1.740 | 0.032              | 1.632 | second              | motor response speed |
| spiritual    | 0.011       | 3.000               | 0.534         | 8.571 | 0.534              | 9.428 | degree              | Snatching skill      |

Significant (0.05) > at (12) degrees of freedom.

## Results

From the results obtained by the researcher from the above tables, it became clear that the two research groups had learned the motor skill and their level of motor response speed improved. The researcher attributes this to the trainer's adherence to important learning principles, such as explanation, presentation, and correction of errors, directing reinforcement feedback, and repeating correct responses, which accelerated the improvement of the research variables, as "the process of repeating correct responses to the same educational and training situation leads the player to a high degree of mastery through the method of repeating the educational situation and its correct responses. The errors accompanying it are eliminated and the correct aspects are maintained and confirmed Also", learning can only occur through practice, and there can be no learning unless it occurs repeatedly with change, even if this change is simple. Through repetition and reinforced practice, there is a gradual improvement in the performance of the skill, and training is the only way to discover errors and then correct them.

One of the basic principles of wrestling is that it requires muscular and nervous effort and speed of performance, especially when executing technical holds, in addition to the

position of the body, legs, and foot movement. Therefore, continuous training by players improves their level of performance and the player has a new reaction in the central nervous system. One of the most important aspects that have been focused on is the level of attention and speed of response, as they have an effective role in the performance of holds by players . “The wrestler cannot master the skillful performance of throwing holds in the absence of the special physical qualities necessary in the main muscles working in the performance. Therefore, the coach must take into account the close connection between the process of physical and skill preparation in the training process. (Jawad, M., & Jabbar Shinen, 2016)

A wrestler needs to possess physical, motor and mental abilities, including speed of motor response when executing holds. Therefore, developing these abilities is a necessary requirement for wrestlers to achieve the best achievements. Special exercises helped to consolidate motor performance in memory and generalize it according to changing situations during the game, as the player was able to implement the decision to choose the correct hold at the appropriate speed. This can only be achieved through diversification in the application of exercises during the educational unit. Therefore, it is important to apply diversification in exercises to achieve the best results. The researcher believes that the special exercises were consistent with the physical ability of the players, and that a single exercise develops more than one variable of the research variables. It helped the player to generalize the motor program for the skill, as“ the exercises that the coach sets for one player or several players are within special laws to develop the player physically, skillfully and tactically, and to develop motor speed and basic skills that affect game plans and depend on an atmosphere similar to the atmosphere of matches that depend on the motor chain [5]”. Thus, the first hypothesis of the research is achieved, that there are statistically significant differences between the pre- and post-tests, in favor of the post-tests. For both experimental and control groups. (Salman et al., 2022)

**After reaching the results, the researcher concluded the following:**

- 1The exercises prepared by the researcher have proven effective in improving the performance level of the players 'snatch skill.
- 2The exercises prepared by the researcher have proven effective in improving the players 'motor response speed.
- 3The experimental group that adopted the special exercises outperformed the control group that adopted the established method in the research variables.

**The researcher recommended the following:**

- 1Using special exercises prepared by the researcher in the training units, as they have a positive role in improving the research variables (technical grips - speed of motor response).
- 2Paying attention to the response speed variable, as it is one of the important variables on which the wrestling game depends.
- 3Diversify the exercises so that their goal is to develop physical and motor qualities in addition to the motor path of the skill.

attached(1)

**Skill Performance Evaluation Form**

| T | wrestler's name | Preparatory Section<br>(2)degree | Main Section<br>(5)degree | Final section<br>(3)degree | the total<br>(10)degrees |
|---|-----------------|----------------------------------|---------------------------|----------------------------|--------------------------|
| 1 |                 |                                  |                           |                            |                          |
| 2 |                 |                                  |                           |                            |                          |
| 3 |                 |                                  |                           |                            |                          |
| 4 |                 |                                  |                           |                            |                          |
| 5 |                 |                                  |                           |                            |                          |
| 6 |                 |                                  |                           |                            |                          |
| 7 |                 |                                  |                           |                            |                          |



Expert's name:

the signature:

the date:

Model of an educational unit for the experimental group

First week      Location: Al-Kadhimiya Sports Club

First educational unit.. Time/90 minutes      the date :

Educational objective: To teach players the snatch grip and selective attention.

| Department          | the time | Implementation method                                                                                                                                                                                                           | Notes                                 |
|---------------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| Preparatory section | (20) d   | Introduction: (3) d, to take attendance, and prepare the tools.<br><br>General warm-up: (9) minutes, general preparation for all body parts.<br><br>Special warm-up: (8) d, giving a set of exercises specific to motor skills. | Emphasis on attendance and commitment |

|                    |           |                                                                                       |                                                     |
|--------------------|-----------|---------------------------------------------------------------------------------------|-----------------------------------------------------|
| Main Section       | (65)<br>d | The exercises are explained by the trainer.                                           |                                                     |
| Educational aspect | (15)<br>d |                                                                                       |                                                     |
| The practical side | (50)<br>d | Exercises applied by players<br>Exercise No(1) .<br>Exercise No(2) .<br>Marin No(3) . | Explain the exercises adequately and correctly.     |
| Final section      | (5)d      | Calming and distraction exercises                                                     | Emphasis on optimal performance in subsequent units |

### Special exercises prepared by the researcher

#### Firstweek

Side dive and encircle the partner's waist:

Method of performanceOn the signal right or left enter on the colleague's waist.

the goalDevelop response speed and learn to enter the snatch application

Pay attention to the color of the side dive and the encirclement of the colleague's waist:

Method of performanceStand in front of two wrestlers, one in blue and the other in red, and upon the color signal (red or blue), step on the waist of the other.

the goalDevelop response speed and learn to enter the snatch application.

Pay attention to the color and direction of the side dive and encircling the colleague's waist:

Method of performanceStand in front of two wrestlers, one in blue and the other in red, and follow the color (red or blue) and any direction, right or left, to enter the waist of the colleague.the goalDevelop response speed and learn to enter the snatch application

#### The second week

Pay attention to the direction of the partner diving sideways and encircling the waist:

Method of performance Standing between two wrestlers, right and left, and upon the direction indicated (right wrestler or left wrestler), enter on the waist of the partner.

the goal Develop response speed and learn to enter the snatch application

Touch the arranged shapes in a systematic manner using one hand:

Method of performance Stand in front of shapes (square, triangle, circle, rectangle) and be prompted to touch the desired shape with one of your hands.

the goal Developing response speed and learning to move the trunk to apply the snatch grip.

Pay attention to the shape and color. Touch the arranged shapes in a systematic manner with one hand:

Method of performance Stand in front of shapes (square, triangle, circle, rectangle) and each shape has two colours: red and blue. Upon receiving the shape and colour, touch the desired shape with one of your hands. the goal Developing response speed and learning to move the trunk to apply the snatch grip.

### **The third week**

Pay attention to the direction of the colleague and apply the snatch grip:

Method of performance Stand between two wrestlers, right and left, and apply the snatch hold on the direction indicated by the wrestler on the right or the wrestler on the left.

the goal Develop response speed and learn to apply the snatch grip.

Touch the arranged shapes in a systematic manner with one foot:

Method of performance Stand in front of shapes (square, triangle, circle, rectangle) and be prompted to touch the desired shape with one of your feet.

the goal Developing response speed and learning to move the foot to apply the throwing grip by blocking the arm and head (hand and head) and the throwing grip by turning the arm (snatch grip).

Touch the square shapes using one hand:

Method of performance Stand in the middle of shapes (square, triangle, circle, rectangle) arranged in a square with the wrestler in the middle, and upon command touch the desired shape with one of the palms.

the goal Developing response speed and learning to move the trunk to apply the snatch grip.



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#### **Fourth week**

Pay attention to the colleague's number and apply the snatch hold:

Method of performance Standing in the middle of 6 wrestlers arranged in a circle, each wrestler has a number known in advance to the performer. Upon the number's command, the wrestler performs the snatch hold.

Pay attention to the unknown wrestler's number and apply the snatch hold:

Method of performance The wrestler stands with his back to 6 wrestlers arranged in a straight line. Each wrestler has a number that the performer is not aware of in advance. Upon receiving the number, the wrestler with the number must be found and then the snatch hold must be applied. (Note: The positions of the 6 wrestlers change each time.)

the goal Develop response speed and learn to apply the snatch grip.

Pay attention to the wrestler's number, the direction of the grip, and the application of the snatch grip:



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- Method of performance The wrestler stands with his back to 6 wrestlers arranged in a row. Each wrestler has a number that the performer is not aware of in advance. Upon being given the number and the direction of the grab, right or left, the wrestler with the number must be found and then the snatch must be applied. the goal Develop response speed and learn to apply the snatch grip.
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