The Effect of Qualitative Exercises to Developing the Ability of Speed Motor Response and the compound skill (V Cat and Rotation - Receiving the Ball – Lay-up shot) for Junior Basketball

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Abstract

The importance of the research lies in the preparation of qualitative exercises in a scientific way, as researchers see that they affect the development of the ability to speed the movement response and the complex skill (V cat rotation, receiving the ball, lay-up shot) for the beginners of basketball. The objective of the research was to: Prepare qualitative exercises using auxiliary means, to identify the effect of specific exercises in developing the ability to speed the movement response and the compound skill (V cat rotation, receiving the ball, lay-up shot) for junior basketball. The researchers used the experimental approach in solving the research problem, and on the research community, the research community was identified with the (12) players of the Al Hilla Sports Club for the 2020-2021 sports season, and they were distributed into two groups equally in a random way (the draw method), and then dealt with Data using appropriate statistical methods.

***Key words**: Qualitative exercise, speed motor response, complex skill of basketball.*

Introduction

There is no doubt that scientific research has become one of the most important necessities in our modern society in reaching the highest levels for all aspects of life by recognizing what God has endowed man [1] with different capabilities and energies in an attempt to achieve the greatest possible benefit from scientific theories and their application to serve and develop society, including the sports field and many sporting events may require a great deal of time to reach the high level of capabilities and capabilities [2].

One of the games that has become of great interest in recent times is the game of basketball, which is one of the most popular games in the world, and the game of basketball requires a great speed of movement to perform its skills, as it requires the players when performing their skills to high harmonic abilities [3].

And that the skillful performance of the basketball game requires a high level of motor response speed in addition to physical preparation, the offensive skills are characterized by the difficulty of their rapid and surprising skill performance, so it is important that the ability to speed the movement response and skill performance serve one another to achieve the goal, and it can stand on the player's ability level through these variables.

So, through the researchers' field experience, they identified their research problem, and they noticed that there is a noticeable decrease in skill performance in the runs where the level of technical performance is very high or the continuation of the match for longer periods of time, and this decrease leads to slow movement to take the right place during the performance of those skills. The researchers believe that the reason [4] for this is not

giving priority to the ability to speed the motor response that directly participates in the skillful performance in a manner consistent with the nature of the motor performance, so the researchers decided to go into this experiment by preparing specific exercises and the aim of it is to have a positive effect on the ability to speed motor response and complex basketball skill (V cat rotation, receiving the ball, lay-up shot) for junior basketball [4]. Consequently, the researchers set the objectives of the research, which are (preparing qualitative exercises for basketball, identifying the effect of specific exercises on the ability to speed motor response and the complex skill of basketball (V cat rotation, receiving the ball, lay-up shot) for junior basketball. Likewise, they assumed that there was an effect of specific exercises on the ability to speed motor response and the complex skill of basketball (V cat rotation, receiving the ball, lay-up shot) for junior basketball [5]. As for the areas of research, they were represented by the basketball players of the Al-Hillah Sports Club for the 2020-2021 sports season, and the time for conducting the experiment was from 18/10/2020 to 8/1/2021. As for the place of conducting exercises and field experiments, the researchers chose the sports hall Closed to the Sports Talent Center in Babel Governorate.

Research methodology and field procedures:

Research Methodology

The approach is one of the important factors that the researcher follows to solve his problem, and it is chosen according to the nature of the problem to be studied, as the nature of the problem necessitates researchers to use the experimental approach because it is consistent with the nature of the research problem, and by designing the method of the two equivalent groups (experimental and control) with the pre and post-tests.

Community and sample research:

The research community was determined by the junior sports club Al Hilla club players for the sports season (2020-2021) and they numbered (12) players and the researcher selected them entirely for the experiment, and they were distributed into two groups equally by random method (lottery method), and then the experimental group underwent training that includes the use of specific exercises while they remained The control group uses the usual coaching curriculum.

Devices, tools and means used in the research:

Means of data collection:

- Arab and foreign sources and the internet.
- Personal interviews.
- Tests and measurements.
- Special forms for recording test results.

Tools and devices used:

- Legal basketball court.
- A tape measure (7 meters).
- A fitlight device consisting of (4) parts.
- Optical discs (LED Light Raymont), count (6)
- Floors and barriers of different heights (40.30), count (10).
- A Chinese electronic device for measuring height and weight, count (1).
- A mobile ground ladder with a length of (8 m) count (2).
- Mobile plastic rings, (8).
- (3) Casio sports stopwatch.
- (1) whistle type (FOX).
- Office tools (papers and pens).

Field research procedures:

Determine the tests for the skills studied:

Ability to speed the motor response test: [(1)]

Title of the test: Nelson test.

The purpose of the test:. Measurement of motor response velocity.

The tools: 20m barrier-free space zone / whistle / stopwatch / duct tape / tape measure.

Measures: The test area is planned with 3 lines, the distance between each line is 6.40m and the line length is 1m.

Performance description: The player stands on one end of the center line and the middle line is between the feet so that his body bends forward slightly, the arbitrator holds the stopwatch with one of his hands and raises it to the top and then quickly moves his arm either to the left or right and at the same time he turns on the stopwatch, and the laboratory responds to the hand signal he tries to run at full speed in the specified direction to reach the lateral line that is away from the center line (6.40), and when the laboratory crosses the correct side line, the referee stops the clock and gives the tester (10) consecutive attempts between each attempt of (20) seconds and with (5) attempts on each side, as shown in figure (1).

Registration method: The time for each attempt is calculated to the nearest (1/10) seconds, and the laboratory score is the average of the ten attempts.

Figure (1)

Motor response velocity.

Compound skill (V Cat and rotation - Receiving the ball – Lay-up shot) test:

Title of the test: Compound skill (V Cat and rotation - receiving the ball – lay-up shot) test.

The purpose of the test:. Evaluates the performance of Compound skill (V Cat and rotation - receiving the ball – lay-up shot).

The tools: Basketball court, whistle, basketball, photography camera, signs

Performance description: The player stops at point (A) when hearing the starting whistle, he starts a distance of (4,20) m to the (A-B) area of the forbidden area and then changes direction to point (B) a distance of (5,70) m, then turns and starts towards the goal to receive the ball from point (C) and perform a one-time peaceful correction, as shown in figure (2).

Registration method: The performance is photographed and presented to the experts for evaluation of (10) scores according to the score calculation form prepared by the researcher where the score is calculated as follows:

- It evaluates the performance of (V cat) and rotation from (3) degrees.

- The performance of receiving the ball shall be evaluated from (3) degrees.

- Evaluate the performance of a Lay-up shot from (4).

Figure (2) shows the skill test combined with basketball(V cat and rotation - Receiving the ball – Lay-up shot).

Main experience:

Pre- tests:

After completing the exploratory experiment and making sure of it, the researchers applied the main experiment by applying the tests to the research community, and the pre-tests were conducted on Wednesday and Thursday 28-29 / 10/2020, as the tests were according to the following sequence:

A test of the ability to speed the motor response:

Test combined skill of basketball(V cat and rotation - Receiving the ball – Lay-up shot).

Preparation and implementation of qualitative exercises:

The researchers prepared and organized the qualitative exercises based on the personal experience of the researchers, and they were applied to the experimental group on 4/11/2020 until 27/12/2020, taking into account (change, diversification and gradation from easy to difficult) and researchers codified these exercises on a scientific basis according to tools and means used, in order for these exercises to be able to develop the ability to speed the movement response and the combined skill of basketball(V cat and rotation - Receiving the ball – Lay-up shot)for junior basketball, and to achieve the objectives and goals of the training process.

The details of the qualitative exercises in the training curriculum are as follows:

- The total number of training units that included qualitative exercises (16) units, and the number of weekly training units that applied specific exercises (2) units for a period of (8) weeks.

- The time for qualitative exercises in one training unit (30-35) minutes.

- The goal of specific exercises is to develop the motor response capacity of basketball beginners.

- The goal of specific exercises is to develop the complex skill (v cat, turning, receiving the ball, peacetime) for beginners basketball.

- Observing the exchange of action between muscle groups.

- Specific exercises are given at the beginning of the main section, and thus aim to "teach the athlete a new experience such as various basic skills, play plans, complex skill components or theoretical information in the field of training and competition.

Post-test:

The researchers, with the help of the assistant work staff, conducted the post-tests for the research sample after completing the application of specific exercises, and that was on Tuesday and Wednesday (5-6 / 1/2021) and with the same sequence of pre-tests, as the researcher took into account the same conditions in which the pre-tests were conducted in terms of the sequence of tests.

Statistical methods used:

- Mean.

- Std. Deviation.

- (T) test for cross-linked samples.

- (T) test for independent samples.

Presentation, analysis and discussion of results:

Presenting and discussing the results of the pre and post tests for the control and experimental groups for the variables under discussion:

Presenting the results of the pre and post tests for the control group for the searched variables:

Table (1) it shows the arithmetic means, standard deviations, the value of (t) calculated for the correlated samples, the level of test significance, and the significance of the difference for the pre and post tests of the control group for the investigated variables.

Variables	Measuring unit	Pre-test		Post-test		Value (T) Calculated	Level sig	Type sig
		Mean	Std. Deviation	Mean	Std. Deviation			
speed motor response	Second	2.448	0.249	1.952	0.623	6.059	0.002	Sig
V cat and rotation - Receiving the ball – Lay-up shot	Degree	6.188	0.424	6.900	0.334	7.625	0.001	Sig

Table (2): Presenting the results of the pre and post tests for the experimental group of the studied variables:

Variables	Measuring unit	Pre-test		Post-test		Value (T) Calculated	Level sig	Type sig
		Mean	Std. Deviation	Mean	Std. Deviation			
speed motor response	Second	2.383	0.865	1.718	0.637	5.232	0.003	Sig
V cat and rotation - Receiving the ball – Lay-up shot	Degree	5.753	0.609	7.826	0.212	11.533	0.000	Sig

Table (2) shows the arithmetic means, standard deviations, the calculated value of (t) for the correlated samples, the level of test significance, and the meanness of the difference for the pre and post tests for the experimental group of the investigated variables.

Table (3): Presentation of the results of (post-post) tests for the control and experimental groups for the searched variables.

Variables	Measuring unit	Control		Experimental		Value (T) Calculated	Level sig	Type sig
		Mean	Std. Deviation	Mean	Std. Deviation			
speed motor response	Second	1.952	0.623	1.718	0.637	3.617	0.005	Sig
V cat and rotation - Receiving the ball – Lay-up shot	Degree	6.900	0.334	7.826	0.212	5.727	0.000	Sig

Table (3) shows the calculated value of (t) for the independent samples, the level of test significance, and the significant differences between the test results (post-post) for the control and experimental groups of the investigated variables.

Discuss the Results

The results presented in tables (1) and (2) for tests of ability on speed of response movement, compound skill (v cat, rotation, receiving the ball, pacifist shot) for beginners basketball. There are significant differences between the pre and post-tests in favor of the post tests for the control and experimental groups, the researchers attribute the reason for this significant difference to the members of the control group due to the exercises that have been applied with methods and methods prepared by the coach in his training units, as they have caused the development of those abilities that are one of the most important pillars of the basketball game, which enables the player to perform well combined offensive skills. It led to significant differences in favor of the post-tests, as for the significant differences that appeared in the above tables of research variables for members of the experimental group, which researchers attribute as a result of their use of specific exercises,

the philosophy and nature of qualitative exercises is the diversification and change in the performance of motor skills with different directions, distances and speeds, up to the ability to perform at a high response speed and the performance of complex skills with basketball and with a high compatibility between them, this is what was found in the qualitative exercises prepared and applied by researchers to the members of the experimental group, as specific exercises are what "help in raising the level of many skillful performances in various sporting activities, and that these exercises reach the highest levels of specialization in the development of skill and physical performance in quantity and quality and timing for performance " [3].

In addition to what was characterized by qualitative exercises with change, composition, overlap and continuous diversification in the means and auxiliary tools, as "the diversity in the tools and their exercises all of this would stimulate the players and increase their motivation towards progress and upgrading the athletic level" [4]. The diversification and change in exercises makes the basketball player ready and ready to deal with all the situations he faces during the match, and the diversification and change in training achieves many goals for the player or the learner during the practice, which is consistent with the actual performance of basketball skills during the competition, "Exercise is a necessary and auxiliary factor in the interaction between the learner and the motor skill, controlling his movements, and achieving coordination between the component parts of the motor skill in a proper sequential performance and in a suitable time"[5].

This is also indicated by (Schmidt 2000) from "The diversification in the method of exercise helps to organize the movement program of the game with a high mechanism so that the learner is prepared to receive playing problems and solve them easily" [6]. Likewise, the qualitative exercises prepared by the researcher included exercises similar to the actual skill performance during game play and simulate them by adopting situations and repetitions similar to performance with the gradual increase in the difficulty of developing the level of kinetic performance of complex skills with basketball, and this is supported by, "The harmonic abilities if they are trained in a standard way and the exercises used in the training are similar in the kinematic performance of the movement to be taught and trained, which is compatible with the characteristics of the dynamic movement as the learning increases and the skill performance improves"[7].

In preparing specific exercises, the researcher emphasized the need for players to perform movement skills in different and variable forms and situations, which in turn leads to adaptation events for players in the skillful performance, as the player always needs to develop his skills and abilities to reach higher levels and to achieve the best achievement, it is necessary for the player to reach the performance of the skill automatically through the constant repetition of performance and the use of various exercises, which are characterized by changing conditions and external factors during the training [8].

This is what the researchers were keen to achieve in all the training units of the experimental research group, and based on the above, the qualitative exercises that were prepared were implemented accurately, which created a state of parity between the development of the ability speed the movement response and the combined skill of basketball(V cat and rotation - Receiving the ball – lay-up shot) for the player who was reflected in the level of development in performance, in addition to the focus on correcting the errors accompanying the performance, the players gained the characteristic of accuracy in performing the complex offensive skills, as well as that a large proportion of those exercises were similar to the state of competition, as well as the careful selection of exercises taking into account their suitability for the research sample and their abilities, taking into account the repetition of the exercise, on an ongoing basis as well as the graduation in the level of difficulty, which guarantees performance by all.

As for the results presented in table (3) that show the preference of the differences in favor of the experimental group in the post-tests, the researchers attribute that the reason for this development of composite skills

in basketball is due to the effectiveness of qualitative exercises prepared by researchers, which were prepared using educational aids and their integration with physical and skill exercises vehicle applied to trial group players, the researchers have been concerned with the gradual difficulty of these exercises, the change, the diversification and the overlap with the harmonic, attention and skill exercises. "Research has shown that the nervous-muscular system responds better when it is excited in a variable manner all the time, and the neuromuscular system needs to be surprised in order to be forced to adapt and this means performing different types of exercises. For a few days and changing the number of repetitions, stresses and exercises from other days [(9)], the researchers also attribute this development also to the overlap between specific exercises designed to develop the speed of movement response and the skill combined with basketball (v cat, rotation, receiving the ball, peaceful correction) and the use of modern aids that facilitate the learning process, improve performance and organize various exercises in learning a number of complex skills Basketball in a way that is consistent with the age stage of the junior group, as Schmidt (2000) asserts that "organizing the exercise in a varied or variable manner and using stimuli or methods is more influential in learning, just as the many repeated attempts constitute a clear development in learning" [(10)].

Conclusions and Recommendations

Conclusions:

Based on the research results reached within the limits of the research community, the following conclusions were reached:

- The duration of the independent variable, represented by the number of training units, was appropriate in creating adaptations that express the extent to which the experimental research group developed the ability to speed the motor response.

- Qualitative exercises contributed to the development of the combined skill of basketball(V cat and rotation - receiving the ball – lay-up shot) for junior basketball.

Recommendations:

In light of the findings of the researchers that have proven the effectiveness of using specific exercises, researchers recommend several recommendations: -

- Researchers recommend the adoption of specific exercises as a basic data when training basketball players.

- The need to legalize specific exercises to suit the age level of players in terms of gender, biological and training age, because of their role in influencing performance.

- Conducting similar studies on other individual and group activities, and on different age groups.

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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved and all experiments were carried out in accordance with approved guidelines.

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