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Special training and its impact to developing the speed and accuracy of basketball passing skills for advanced Al-Muthanna club players

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Abstract

The present study intends to create unique workouts and apply them to Al-Muthanna basketball Club players in order to determine how these exercises affect basketball passing speed and accuracy. The researchers created two equal groups, a control and an experimental group, using the experimental technique to accomplish this purpose.

Al-Muthanna Basketball Club players, who totaled (12 players) and were evenly split into two groups with (6) players each, served as the study sample. Following the application of the pre-tests, the researcher performed homogeneity and equivalence on the two research groups to make sure there were no differences between the two groups after collecting the findings. Then, for the next eight weeks, performed the workouts had created, which incorporated strength training in addition to skill, at a pace of three units each week. Consequently, there are 24 units in all. He finished the activities and started using the post-tests. The statistical software (SPSS) was utilized by the researchers to assess the data once they had gotten the findings. As a result, it was determined that the workouts created by the researchers helped enhance performance speed and accuracy.

Keywords: Developing the speed, basketball passing skills, Al-Muthanna club players

1. Introduction

The world of training is considered one of the most important fields in which many developments have occurred in recent years, due to experiments and scientific research, the sole concern of which was and still is to raise the technical level of sports in general, and to reach the level of athletes to the highest possible level, as there is no longer a limit to reaching it and stopping at it. Everything has become possible to benefit from to improve the level of the athlete.

One of the things that must be provided to sustain the training process in general is crystallized in the use of correct scientific methods and modern scientific training curricula that contain physical, skill, tactical and psychological preparation, as the basis for raising the athletic level in sports, including basketball, is comprehensive physical preparation, which It is focused on using correct scientific training methods that are compatible with the element to be developed, whether physical or skillful.

The game of basketball is one of the team sports that has achieved wide spread throughout the world because of its educational, physical, skillful and mental advantages and characteristics, in addition to the presence of its own elements such as excitement, lively artistic performance and enjoyment for its practitioners as well as for spectators. Hence, careful care was necessary. In proper planning of the sports training process, preparing training curricula for the game and implementing them correctly. The game of basketball requires special physical and skill requirements.

The game of basketball is one of the sports that constantly needs muscular strength (static strength and dynamic strength), which contribute greatly to the development of the players' physical and skill levels, as the diversity of muscular contractions works to develop muscular strength to a greater extent.

Therefore, it is necessary to pay attention to the number of players in a comprehensive manner in all aspects, and to develop offensive skills during the training process, the most important of which is passing. Strength is an important factor in developing these skills if done scientifically according to the players' abilities and capabilities. Hence the importance of research into using special training in developing the speed and accuracy of passing for players. In basketball. Because of its benefit in developing and raising skill capabilities to reach higher levels.

1.2 Research Problem

The research problem lies in answering the following questions:

1. Do special training have an impact on developing the speed and accuracy of basketball passing for Al-Muthanna Club players?

1.3 Research objective

1. Preparing special exercises and applying them to basketball players for Al-Muthanna Club players.
2. Identify the impact of training, especially on the speed and accuracy of passing for advanced Al-Muthanna Basketball Club players.

1.4 Research hypotheses

Special training has a positive effect in developing the speed and accuracy of passing for Al-Muthanna Basketball Club players.

1.5 Research fields

1.5.1 Human field: Al-Muthanna Youth Sports Club basketball players.

1.5.2 Time field: From 10/2/2023 to 25/4/2023.

1.5.3 Spatial field: The closed hall in the Western Youth Forum in Muthanna Governorate.

2. Research methodology and field procedures

2.1 Research methodology: Because the nature of the research necessitates knowledge of a (specific) effect, the researcher used the method of experimental design (two equal groups) and Figure (). The experimental method is the closest research method to solving problems by the scientific method because it attempts to control all the basic variables and factors with the exception of one or more variables, which the researcher changes with the aim of determining and measuring its scientific effect.

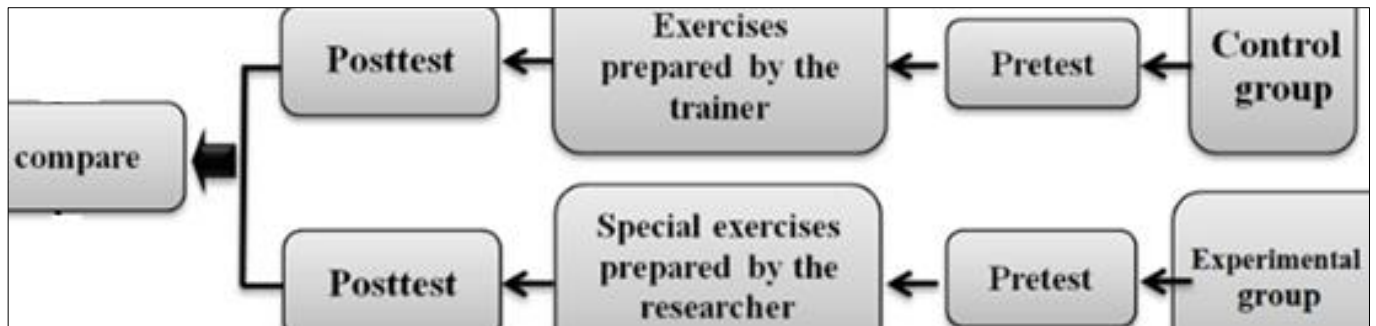


Fig 1: Explains the experimental design of the research groups

2.2 The research community and its sample

The researcher identified his research community represented by the Samawah Basketball Club players, who numbered (14) players. As for the research sample, "which is part of the original community that contains some elements selected from it with the intention of studying the characteristics of the original community", the community was divided by drawing lots, two groups are drawn: A control group and an experimental group, and each group has (6) players.

2.3 Research tools and devices used

The researcher employed several of them to do this, and what is meant is the means or technique by which he may solve his issue, whatever it may be, including tools, data, samples, or equipment:

2.3.1 Methods of data collection

- Arab and foreign sources.
- Tests and measurement.
- Registration Form.

2.3.2 Tools and devices used in research

- A medicine ball weighing (3 kg).
- Measuring tape.
- Signs.

- Adhesive tape.
- Basketball number (10).
- Weights in the form of discs.
- Chalk.
- Smooth wall.
- LENOVO electronic calculator.

2.4 Description of the research test

First - the wall scroll test: (Abdel Dayem, Muhammad Mahmoud & Hassanein, Muhammad Sobhi, 1999, p. 113) [1].

- **Purpose of the test:** To measure scrolling speed
- **Tools used:** Wall, basketball, stop watch
- **Procedures:** Draw a line on the ground at a distance of 2.5 m from the wall and draw a square measuring 60 cm.
- **Method of performance:** The tester stands behind the line, facing the wall, and when he hears the start signal, he passes the ball to the wall to make 15 chest passes without taking a step forward.
- **Recording:** The time taken by the tester is calculated from hearing the start signal until touching the ball on the accuracy square on the fifteenth pass, and Fig (2) shows this.

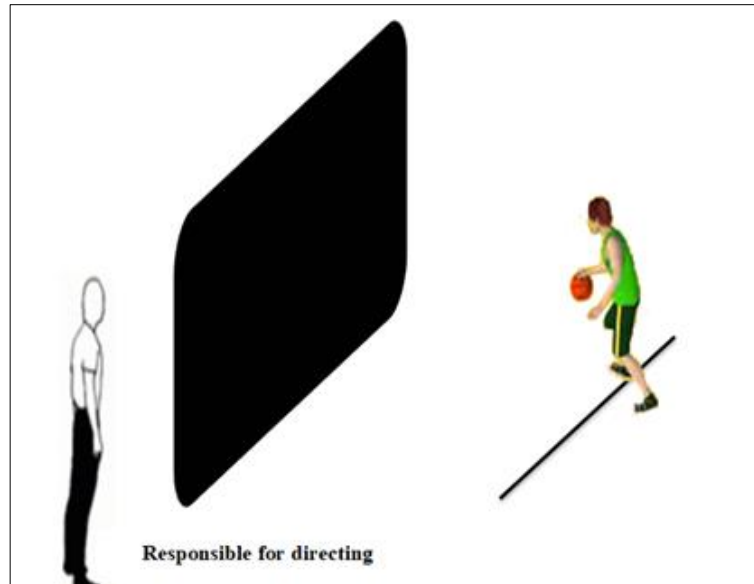


Fig 2: Responsible for directing

2.5 Exploratory experience

Scientific research experts recommend conducting exploratory experiments for the tests used in research in order to obtain the necessary reliable results and information to benefit from when conducting the main experiment. The exploratory experiment is “a preliminary experimental study carried out by the researcher on a small sample before carrying out his research with the aim of testing the research methods and tools.” (Al-Shoukm, Nouri Ibrahim & Al-Kubaisi, Rafi Saleh Fathi, 2004, p.89) [2].

Accordingly, the researchers conducted an exploratory study on (2) players from the Al-Muthanna Basketball Club. This experiment was applied on Saturday, February 11, 2023 AD, in the closed hall of the Al-Gharbi Forum at 4:30 pm.

The aim of conducting the exploratory experiment is several points, including:

- Identifying the negatives and positives that the researcher encounters in the main tests
- Knowing the safety of the devices and ensuring their validity.
- The availability of the required capabilities in terms of the suitability of the specific places to conduct the tests, as well as the availability of appropriate devices and tools for the tests.
- The adequacy of the assistant team and their understanding of how to apply the test vocabulary and distribute them to know their tasks when conducting tests for the research sample.
- The suitability of the time period specified for the test for one player and for the other players.
- Extracting the scientific foundations of tests (validity, reliability, objectivity).

This experiment achieved its purpose

2.6 Scientific basis for test results

2.6.1 Validity of the test: It is anticipated that the exam truly measures the aptitude, characteristic, attitude, or

disposition that it was created to assess. In other words, it measures what it is supposed to measure (Al-Yasiri, Muhammad Jassim, 2010, p.72) [3], to calculate the validity coefficients of the tests, the researcher used experimental validity, and this type of validity is calculated by finding the test’s correlation coefficient with a test. External or internal, as the correlation of the test score with an internal or external criterion is an indicator of the validity of that test. If the researcher does not have a suitable external criterion, he resorts to the total score of the test as it is the best criterion in calculating this relationship. Accordingly, the researcher adopted the Pearson correlation coefficient, between the scores of the subtests and the total score of the test in calculating the validity coefficient, and Table (1) shows this.

2.6.2 Test reliability

Reliability means “that the test gives the same or close results if it is repeated more than once on the same group and under the same conditions” (Al-Zyouid, Nader Fahmy & Alyan, Hisham Amer, 2005, p. 145) [4]. The reliability of the test was calculated using the method (testing and re-application of the test), and for this reason the researcher repeated the tests on Monday, February 13, 2023, on the same sample of the exploratory experiment and under the same circumstances and context, and extracted the reliability coefficient from between the two tests by means of the law of the correlation coefficient (Pearson). As shown in Tables (1).

2.6.3 Objectivity of the test

Objectivity means that “the tests used are not affected by the change of arbitrators” (Radwan, Muhammad Nasr Al-Din, 2006, p. 208) [5] “as the tests were conducted objectively in the presence of two arbitrators, as the Pearson correlation coefficient for their results was extracted and the results emerged with high objectivity for the arbitrators, as shown in table (1).

Table 1: Scientific basis for test results

Variables	Validity coefficient		Reliability coefficient		Objectivity coefficient	
	R value	Sig level	R value	Sig level	R value	Sig level
Passing accuracy and speed	0.9333	0.000	0.992	0.000	0.999	0.000

2.7 Main experiment

2.7.1 Pre-tests

The researchers conducted the tests, after preparing the research requirements, tools, and the supporting work team. The tests were applied to (12) players. The tests were applied in the closed hall of the Western Youth Forum at 4:30 p.m., according to the following sequence:

- Wednesday 15/2/2023 for testing the accuracy and speed of basketball passing.

2.7.2 Homogeneity and equivalence

Additionally, in order to achieve a uniform and equal level for the sample in the variables under investigation, which are thought to be relevant in the experiment, they must be controlled in order to eliminate impacts that might alter the research's findings as a consequence of individual variances among the students. Because of this, the researcher carried out homogeneity and equivalence analyses, as shown in tables (2) and (3).

Table 2: Homogeneity between the two research groups

Variables	Measuring unit	Control group		Experimental group		Levene value	Sig level	Sig type
		Mean	Std. Deviation	Mean	Std. Deviation			
Passing accuracy and speed	Second	15.923	1.570	15.844	1.378	0.247	0.881	Homogeneity

Table 2 demonstrates that the (LEVENE) test's significance level values were larger than (0.05), which demonstrates

that there was homogeneity among the sample members for each group.

Table 3: Equivalence between the two research groups:

Variables	Measuring unit	Control group		Experimental group		Levene value	Sig level	Sig type
		Mean	Std. Deviation	Mean	Std. Deviation			
Passing accuracy and speed	Second	15.923	1.570	15.844	1.378	0.633	0.724	Sig

Table (3) shows that the significance level values of the (t) test for independent samples were greater than (0.05), and this indicates that there are no significant differences between the control and experimental groups.

2.7.4 Special exercises prepared by the researcher

The researchers applied the special exercises that he prepared and under his direct supervision on a sample of the experimental group, which numbered (6) players, from Sunday, February 26, 2023 until Thursday, April 20, 2023. When developing the exercises, the researchers took into account some foundations and principles based on as follows:

- The activities were implemented over the course of eight weeks, with three training units each week. Consequently, there are 24 training units in total for the exercises.
- The exercises were carried out during the days (Sunday - Tuesday - Thursday) of each week.
- The researcher used the high-intensity interval method in applying the exercises, with an intensity ranging from (80-95%).
- Intensity was regulated based on repetition.
- The ratio of work to rest in the training units was (1 effort: 2 rest).
- The number of special exercises reached (16).
- The exercises were gradually graduated, moving from easy exercises to difficult exercises and from simple to complex exercises.
- The special exercises were skill exercises using force

- In distributing the intensity, the researchers took into account the fluctuation between the daily training units, using the fluctuation (2: 1).
- The exercises were applied at the beginning of the main section and immediately after the warm-up, so that the player could be at a level of mental and physical preparation and neuromuscular compatibility to achieve the goal of the exercises.

2.7.5 Post-test

After completing the special exercises, the researchers began applying the post-tests to (12) players. The tests were administered at the Gharbi Youth Forum at 4:30 pm, according to the following sequence:
- Friday 21/4/2023 for strength and speed tests.

2.8 Statistical methods

The researchers used the statistical system (SPSS) for statistical information and the program (EXCEL).

1. Mean.
2. Standard deviation.
3. The value of the LEVENE test.
4. Simple correlation coefficient (Pearson).
5. The value of (t) for correlated samples.
6. The value of (t) for independent samples.

3. Presenting, analyzing and discussing the results of the control and experimental groups in the post-tests

Table 9: Arithmetic means, standard deviations, t value, and significance of differences between the control and experimental groups in the tests of strength characterized by speed and accuracy of shooting a basketball for the post-tests

Variables	Measuring unit	Control group		Experimental group		Calculated t value	Sig level	Sig type
		Mean	Std. Deviation	Mean	Std. Deviation			
Passing accuracy and speed	Second	15.896	1.222	13.172	0.881	5.336	0.000	Sig

The results of the table above show that the significance level values of the (t) test for independent samples for variables were smaller than the error rate (0.05) at a degree of freedom (10). This means that there are differences between the control and experimental groups in the research

variables in the post-tests and in favor of the experimental group.

4. Discussing the results of the control and experimental groups in the post-tests: According to the data, there were substantial disparities between the control and experimental

groups in the post-tests, favoring the experimental group's outcomes.

The researchers believe that the special exercises prepared contributed to developing the strength distinguished by speed, so the researcher was keen to pay attention to training them from exercises of a physical skill nature that all players performed with precision and high proficiency, "because these exercises aim to raise physical ability by using skills and movement direction close to the type of specialization and employing these exercises using the muscle groups involved in motor performances,

because muscular strength is considered a factor independent of general endurance, indicating that physical ability depends on muscle strength and the efficiency of the connection between them and the nervous system, while general endurance depends mainly on the efficiency of the circulatory and respiratory systems in transporting the oxygen and nutrients necessary for the continuation of muscular work and the speed of disposal of metabolic waste (Bashtawi, Muhannad Hassan Al- & Al-Khawaja, Ahmed Ibrahim, 2010, p. 325) ^[6]".

The researchers believe that the training units include exercises in which rubber resistances and medicine balls were used to develop strength endurance (for the legs and arms), as the forms of these exercises were closely related to the offensive skills studied in basketball, as they included jumping movements and forward, backward and lateral movements with resistances that are completely similar to the movement of a basketball player.

The researchers were keen to add the element (strength) in addition to skill to the exercises prepared by him for the experimental group so that the player could perform the motor skill comfortably and in an optimal and appropriate manner. This was reflected positively in the development of the various muscles working in the body, in addition to organization and progression by increasing the training load and concentration. Through exercises to increase muscle capacity, especially the muscles of the legs and arms, by using strength endurance exercises using medicine balls, rubber balls, jumps, and jumping from different positions. "This led to an increase in the ability of the working muscles in the body, in addition to the use of exercises with maximum and sub-maximal intensity, which are sufficient to develop the strength endurance of the body's muscles, as (strength endurance training is determined by the ability of a large load when compared to the conditions of competitions and working with high resistance) (Hussein, Qasim Hassan & Nassif, Abd Ali, 1987, p. 157) ^[7]".

This is what the players did in the training program, as most of the training included this ability, as well as continuity in training and the time of the program, which gave sufficient opportunity for development. All of these things mentioned contributed effectively to showing positive results between the post-tests for the experimental and control groups, and in favor of the post-test for the experimental group.

"Recently, most of the skill, speed, and strength exercises are performed with the ball in all training sessions. This leads to building the required athletic condition and skill, and thus achieving perfection in technique." (Tadeusz ulatowski, 1981, 141) ^[8] Linking technical performances to special physical abilities in the game of basketball has a positive impact on the level of these performances. Each of the player's movements requires muscular work with a certain force and speed, and the player's ability to perform the skill for a good period of time during the match is one of the goals of the training prepared by the researcher by integrating muscle strength training with skill training. We added to that teaching the player how to perform the skills

with. A colleague and under pressure from the defender." Tadeusz also explained that "choosing the opponent is the basis of the work. How can the discount be based on the high load and intensity of the work? Choosing the discount depends on the period and degree of training and the skillful application of repetition. they also added that this method is suitable for those who have many years of training and is less suitable for others, and that the colleague's contribution to training in the form of (competition), whether defensively or offensively, has a distinctive effect in increasing the effectiveness of the activity "(Zuhair Qasim Al-Khashab & others, 1991, p. 70) ^[9] such as booking and then receiving and shooting or performing accuracy." Shooting with holds, peaceful shooting, and defensive footwork, and all of these skills have become mainly used in most modern basketball plans. Therefore, the researcher was keen to focus on performing these skills and repeating them, taking into account the speed and strength of performance, as modern basketball and the development of individual and team defense have greatly developed the player must perform the skill with high efficiency throughout the match.

5. Conclusions and recommendations

5.1 Conclusions

Special exercises that include strength-accompanying skill exercises prepared by the researcher have a positive impact on developing the accuracy and speed of basketball passing for Al-Muthanna Club players.

5.2 Recommendations

1. It is necessary to include strength exercises in the training units in addition to skill exercises because of their positive impact on developing the accuracy and speed of basketball passing.
2. Conducting other studies by applying special exercises and knowing their effect on basketball skills, which the researchers did not address.

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