



*The Effect of Harmonic Exercises on Teaching the Skill of Shooting
from the Basketball Free Throw Line to Specialized School Players*

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ABSTRACT

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The importance of the research lies in the fact that the basic skills in basketball have an important role in the process of skill performance and its accuracy during the implementation of motor duties during the match, so work should be done to develop and teach them well and correctly using the focus of attention in order to increase the correct technical performance, as well as the educational curricula and their preparation in a scientific way are important in developing what should be developed from the basic skills of basketball, which in turn works to develop the skill level, and the **research** problem was Through the researcher's observation of the tournaments of schools, specialized schools and training centers, she saw that there is a problem suffered by learners, which is the lack of compatibility during the process of learning basic skills, and this is reflected in their implementation of duties during play, and thus the inability to have solutions to achieve the main and important goal in the process of learning basic skills, while **the objectives of the research are** the preparation of harmonic exercises.

1- Introducing the research

1-1 Introduction and Importance of the Research:

The scientific progress in the field of sports has witnessed a remarkable development in most sports and its impact has become clear in the advancement of advanced levels, including the game of basketball, which has witnessed a remarkable and significant development, as basketball has now become the first competitor of football in terms of attracting the largest number of players and spectators, because of the fast pace of the game of basketball and continuous maneuvers between attack and defense and what it contains. From a great combination of artistic performance.

The experience of specialized schools has become an integrated institutional work that has passed the stages of experimentation, and it has begun to aim to expand the sports rules in the various Olympic Games, and it has begun to move towards refining the talents and abilities of the players and developing them by following the studied and organized training curricula and internationally accredited tests, with the aim of promoting these promising generations to enter international sports and improving the evaluation of Iraq among the countries. To reach them to what is required, and thus they need applied field studies that avoid improvisation and personal experiences, because of the lack of practical experiences in Iraq in these schools, which depend on the results of these studies in order to include them in their educational and training curricula, and perhaps the physical and skill factor are at the forefront of other psychological and planning factors. Depending on the nature of the human body, practice and repetition facilitate it or affect it with development if they have an organized and deliberate effect.

By virtue of the nature of physical and harmonic exercises, the body performs movements in harmonious forms and with high harmony, which are in the form of movements characterized by fluidity and control of muscular work to show these movements in the required form, and this control depends on the appropriate neural instructions that are carried out according to programmed commands in a way that relies on real-time thinking after mastering them.

As for the importance of the research, it is that the basic skills in basketball have an important role in the process of skill performance and its accuracy during the implementation of motor duties during the match, so it is necessary to work to develop and teach them well and correctly using the focus of attention in order to increase the correct technical performance, as well as the educational curricula and their preparation in a scientific way are important in developing the basic skills of basketball, which in turn works to develop the skill level.

1.2 Research Problem

From this objective understanding of the importance and role of basic skills in basketball, the researcher sought to prepare an educational curriculum according to compatibility exercises to be a help for physical education teachers to improve the level of performance, improve their teams and results, and contribute positively to the development of the game of basketball.

Through the researcher's observation of the tournaments of schools, specialized schools and training centers, she saw that there is a problem that learners suffer from, which is the lack of compatibility during the process of learning basic skills, and this is reflected in their implementation of duties during play, and thus the inability to have solutions to achieve the main and important goal in the process of learning basic skills.

1-3 Research Objectives

1. Preparation of harmonic exercises.
2. Identifying the Effect of Harmonic Exercises on Teaching the Skill of Shooting from the Basketball Free Throw Line to Specialized School Players

1-4 Research Hypotheses

1. There are significant differences between the pre- and post-tests to teach the skill of shooting from the basketball free throw line for specialized school players

2. And in favor of post-tests.

1-5 Research Areas:

1.5.1 Human Field : Players of the Specialized School of Basketball of the Directorate of Youth and Sports in Dhi Qar Governorate for the 2024-2025 Sports Season

1-5-2 Temporal Domain: 15/6/2024 to 20/10/2024

1.5.3 Spatial Field: The closed sports hall in the Nasiriyah Model Forum in Dhi Qar Governorate

2. Research Methodology and Field Procedures:

2-1 Research Methodology:

The researcher used the experimental method by designing one group to suit the nature of the problem .

2-2 Research Population and Sample:

The research population was identified, which are the players of the Specialized School of Basketball of the Directorate of Youth and Sports in Dhi Qar Governorate for the sports season 2024-2025, which are (12) players, and (8) players representing the research sample and representing (66.66%) of the population were selected.

2-3 Sample homogeneity:

The coefficient of difference was used to find out whether there was a difference or not, and the value of the coefficient of difference was less than 30%, which means that the sample is homogeneous, and Table (1) shows this.

Table (1) shows the homogeneity of the research sample

Divergence coefficient	Standard deviation	Arithmetic mean	Unit of Measurement	Morphological Measurements	t
7.51 %	0.91	12.11	year	lifetime	1
9.63 %	4.92	51.09	kg	Mass	2
3.42 %	5.57	162.48	poison	Length	3

2.4 Means and tools used

2.4.1 Means of Information Collection:

1. Arab and foreign sources.
2. Expert opinion poll form to determine the skills as well as the appropriate tests for the research sample.

2.4.2 Tools and devices used in research

"The research tools are the ones that help the researcher in collecting his data and solving his problem in order to achieve the research goals, regardless of the tools such as data, samples and devices" (Wajih Mahjoub, 1993, p. 179) Therefore, the researcher used a set of tools and devices, which are as follows:

1. 6 homemade wooden signs.
2. Basket balls (15) of the type (Mekasa) of Chinese origin.
3. Personal interviews.
4. Leather tape for measuring length.
5. ACS-23 type medical scale of Chinese origin.
6. 2 Casio electronic stopwatches of Japanese origin.
7. Basketball court legal.
8. Crayons
9. Non-stretch rope.
10. Whistle number (2) of Chinese origin.

11. Screws.
12. Notification.
13. Tests and measurement.
14. Legal basketball goals.
15. Adhesive tape with a length of (1.50) m.

2.5 Tests used in the research:

- **Shooting test from behind the free throw line (10 throws)** (Ali Salloum, 2004, p. 189)

Purpose of the test: Measure the scoring accuracy of the free throw.

Necessary Tools: Legal Basketball Court, Legal Basketball Goal, 15 Legal Basketballs.

Performance Description

- ❖ The player takes a standing position with the ball behind the middle of the free throw line.
- ❖ Each player performs two sets each consisting of (5) consecutive throws.
- ❖ The player has the right to score on the basket in any appropriate way.
- ❖ Each player has only one attempt.

Test Management

- ❖ Recorder – Calls names first to record the results of the throws.
- ❖ Hermit – Stands next to the player to give the ball and observe the correct performance and count.

Calculating Grades

- ❖ One score is counted and scored on each successful shot (the ball enters the basket).
- ❖ No score is counted for the player when he does not enter the basketball (failed).
- ❖ The player's score is the total points he gets in (10) throws.

2.6 Scientific Basis of Tests

The researcher relied on the scientific foundations of the tests (consistency, honesty, and objectivity) to determine the extent of the process of the tests used in the research, which is the scoring test from behind the free throw line.

First: Test Stability

Test consistency means "that if it is repeated to the individuals themselves, it gives the same results or similar results under similar conditions" (Marwan Abdel Majeed, 1999, p. 70.)

The researcher used the method of retesting on a group of (4) players, and the first test was conducted on Friday 21/6/2024, and the test was repeated for the second time on Friday, 28/6/2024 in the hall of the Nasiriyah Model Forum, and it was found that the value of the correlation coefficient between the two tests was as shown in the table (3).

Second: The Validity of the Test:

The validity of the test depends "on the extent to which the test measures the skill or quality to be measured, and the measure is true when it measures with sufficient precision the phenomenon it was designed to measure." (Muhammad Hassan Allawi and Muhammad Nasr al-Din Radwan, 1988, p. 322.).

The researcher used two methods to find out the validity of the test, the first method is self-truthfulness.

Therefore, the researcher used the self-truthfulness method to extract the value of the honesty coefficient for each test, as also shown in Table (2).

Table (2)

Shows the consistency and honesty coefficient of the tests used in the research

Honesty	constancy	Unit of Measurement	auditions	t
0.94	0.90	Grade	Free Throw	1

Third: The objectivity of the test:

One of the most important qualities of a good test is that it should be objective in measuring the phenomenon that it was originally intended to measure, and that there should be a full understanding of what all the testers will perform, and that there should be a clear explanation for everyone, and that there should be no opportunity to understand another meaning that is not intended to be understood, as objectivity in its general sense means "freedom from bias and intolerance and not to introduce personal factors into it." (Marwan Abdel Majeed 2000, p. 44).

The researcher calculated them "by correlating the scores of two judges who set the scores for one group of individuals at the same time" (Muhammad Hassan Allawi and Muhammad Nasr Al-Din Radwan, 2007, p. 299), when applying the studied tests, the results after being statistically processed showed that all tests have high objectivity as shown in Table (3).

Table (3)
Shows the objectivity of the tests

Objectivity	Unit of Measurement	auditions	t
0.88	Grade	Free Throw	1

2.7 Exploratory Experiment

The researcher conducted a reconnaissance experiment on Friday, 21/6/2024 at four o'clock in the afternoon on (4) players from outside the sample, as the exploratory experiment is used to avoid the shortcomings while determining the place, time and duration of the experiment (Wajih Mahjoub, 1993, 65), and the purpose of conducting the exploratory experiment was:

- 1- Finding the scientific basis for the test.
- 2- Prepare and guide the assistant team according to the research objectives.
- 3- Configure the necessary devices and tools.
- 4- Recognize the time needed for the test.

2-8 Field Research Procedures:

2.8.1 Pre-tests for the research sample:

The pre-tests of the research sample were conducted on Sunday 30/6/2024 to test the shooting from behind the free throw line (10 throws) at four o'clock in the afternoon.

The researcher and the assistant team took into account the suitability of all the conditions and the method of implementation, as well as the sequence of tests, and the researcher was keen to document the test.

2.8.2 Curriculum

The researcher began to prepare the educational curriculum after reviewing many scientific resources available in the field of motor learning and basketball, as well as benefiting from the opinions of experts and specialists in the field of basketball, motor learning and sports training.

Their opinions were taken after the educational curriculum was presented to them in order for the research to achieve its goals, because "the basis of it is to reach the level of the player to the best possible degree of progress in his specialized activity." (Amr Allah Al-Basati, 1988, p. 53).

The educational curriculum included two modules that contain a simplified explanation of the law of the game, the dimensions of the arena, and finding a kind of harmony between the learner and the ball and how to perform the correct grip of the ball so that the individual can form an incomplete initial image at first, as Mohamed Othman states that "the educated individual must recognize the purpose and purpose of the movement in order to enable him to understand the motor duty assigned to him, and this is largely related to the speed of learning, especially in the new skills." (Muhammad Abdul Ghani Othman, 1987, p. 130), and these two units were given to the research group.

After the completion of the introductory modules, the application of the educational curriculum began on Sunday on 7/7/2024, which consists of (24) educational units and lasted (8) weeks, distributed on Saturdays, Sundays, and Fridays.

The time of the educational unit was (45) minutes, as the educational curriculum is applied in **Main Section** This section included the theoretical part, which lasts (10) minutes, which includes an explanation of the skill, with a presentation of a model of application in front of the learners, either the part. **Practical(Applied)** Its time was (20) minutes, and this part included practical applications of skill exercises in basketball.

2.8.3 Post-tests for the research sample:

The post-test of the research sample was conducted on Sunday, 1/9/2024, after the completion of the period of applying the educational curriculum, and the researcher was keen to provide the conditions of the pre-test and its procedures for the research tests.

2.9 Statistical Methods:

- Arithmetic mean.
- Standard deviation.
- Divergence coefficient.
- Pearson correlation coefficient .
- T)) test for threaded samples.
- Favorable Percentage.

3. Present, analyze and discuss the results:

3-1 Presentation and analysis of the results of the pre- and post-tests of the sample

Table (4)

Shows the values of the arithmetic medians, standard deviations, and the (T) value calculated for the tests

Conclusion	Sig	T calculated	(Next)		(Qibla)		Unit of Measurement	Indicators accuracy
			on	Going to	on	Going to		
Moral	0.000	7.16	0.12	7.22	1.13	4.95	point	Aiming Te

* Significant at the significance level of \geq (0.05)

Table (5) shows the arithmetic media, standard deviations and the value of (t) calculated between the results of the pre- and post-tests, as the results presented in the table showed that the value of the significance level in the free throw shooting test was (0.000) which is less than the value of the significance level (0.05), which indicates that there are significant differences between the pre- and post-tests of the sample.

3-2 Discussion of the Results:

Through Table (5), it was shown that there is a significant difference in the results of the post-tests of the research group, which the researcher attributes to the regularity of the sample in the educational units allocated to it according to the pre-prepared curriculum, as well as the repetitions in performance and the continuation of the application of the units dedicated to teaching basic skills in basketball, in addition to the fact that the research sample from the age of (13-14) years is the age group called the junior category, and this age group develops rapidly in the skill or physical aspect of what these individuals possess. Age group, and this is confirmed by (Qasem, 1998) "The goal of this stage is to acquire motor skills in general, not to complete mastery and the stability of the art of motor performance, but the main purpose of this should be to acquire the ability to perform different movements to an acceptable degree of compatibility with the learner's ability to save effort" (Qasim Hassan Hussein, 1998, p. 34)

The development of the sample also came due to the use of compatibility exercises during the educational units with the exercises for developing and teaching the skill of shooting in basketball, which were introduced in the vocabulary of the educational curriculum, especially in the main section of the learning units.

Also, the development obtained by the experimental group came as a result of the desire and motivation of the learners, as the generation of desire and motivation in the learner makes him reach a level of good performance, especially when the researcher strengthened the educational curriculum with a large number of balls that were given to the learners, and made each learner have a basketball while performing the exercises according to the assigned learning units and each according to the exercise and its quality, which led to maintaining the number of repetitions and performing them on time and according to what is required to perform the exercise or skill. This is consistent with what Mahjoub (1993) pointed out that "practicing with a tool (such as a ball) moves the learner to perform better during practice." (Wajih Mahjoub, 1993, p. 48).

This is also consistent with what Louay and Ali (1991) have pointed out that "a good basketball player is one who puts the development of mental and physical skills in the first place, and must devote time to this goal." (Louay Muhammad Issa and Ali Jafar Samaka, 1991, p. 36)

The effectiveness and role of the compatibility exercises that were given to the learners in the research group through the educational curriculum and during the sequential educational

units, and these exercises depend mainly on the basic skills of basketball, and it has become clear that their positive and effective effect on the skill (handling and receiving) is one of the important basic skills in the game of basketball, and it needs muscular neural coordination between the eye, the ball, the aiming and receiving hand, and also needs good accuracy and attention to the movement of the arms and their compatibility with the learner's eyes, so the practice and application of the Learners of the educational curriculum prepared for them, which includes, as mentioned above, attention coordination exercises, has positively affected the creation of neuromuscular adaptations by focusing attention and visualization to repeat the skill over and over again, and the motor sensation of the skill increases accurately with the repetition of the skill and the continuous practice of it, and that the increase in the repetition and practice of the skill will give a preference in determining the accuracy of the movement and reducing the percentage of its errors, and this is what he pointed out (Muhammad & Mohammed, 1987), that the sense of skill mentally and physically, contributes to its development, especially If it is part of a program based on the scientific standards to which the educational process is subjected." (Muhammad Hassan Allawi & Muhammad Nasreddin, 1987, p. 115) also pointed out (Mohammed, 1975) that "the high degree of mastery of motor skills is not only related to training qualifications but also to the individual's ability to focus his attention." (Muhammad Hassan Allawi, 1975, p. 55)

4. Conclusions and Recommendations:

4-1 Conclusions:

In light of the results obtained, the researcher concluded the following:

1. The educational curriculum according to compatibility exercises has a positive effect on learning the accuracy of shooting from the basketball free throw line.
2. There are significant differences between the pre and post test to learn the accuracy of the shooting skill from the basketball free throw line and in favor of the post-test.

4-2 Recommendations:

- 1- Specialists in the science of motor learning in addition to other sciences should be provided in order to help coaches to know and diagnose errors in performance and develop appropriate solutions for the coach to solve these mistakes and develop performance by developing appropriate exercises for players.
- 2- Conducting similar studies in other skills that were not addressed in the study.
- 3- Conduct similar studies for other age groups and other educational methods related to the development of basic and complex skills and find out the results of these studies.
- 4- Paying attention to conducting tests and measurements periodically.

Sources

Amr Allah Al-Basati: Rules and Foundations of Sport Training and its Applications, Alexandria, Ma'arif Press, 1988, p. 53.

Ali Salloum: Tests, Measurement and Statistics in the Field of Mathematics, Ministry of Higher Education and Scientific Research, University of Al-Qadisiyah, Al-Taif Printing, 2004.

Qasim Hassan Hussein: Foundations of Sport Training, 1st Edition, Amman, Dar Al-Fikr for Printing and Publishing, 1998.

Louay Muhammad Issa and Ali Jaafar Samaka: The Training Guide in Modern Basketball, Ministry of Higher Education and Scientific Research, University of Baghdad, Faculty of Physical Education, 1991.

Mohamed Hassan Allawi and Mohamed Nasr El-Din Radwan: Measurement in Physical Education and Sport Psychology, Cairo, Dar Al-Fikr Al-Arabi, 2007 .

Mohamed Hassan Allawi, The Science of Sport Training, 3rd Edition, Dar Al-Ma'arif, Egypt, 1975.

Muhammad Abdul Ghani Othman: Motor Learning and Sport Training, Kuwait, Dar Al-Ilm, 1987.

Marwan Abdel Majeed: Foundations of Scientific Research for the Preparation of University Thesis , 1st Edition, Amman, Al-Warraaq Foundation, 2000.

Marwan Abdel Majeed: Scientific Foundations and Statistical Methods for Tests and Measurement in Physical Education, 1st Edition, Amman, Dar Al-Fikr for Printing, Publishing and Distribution, 1999.

Wajih Mahjoub: Methods and Methods of Scientific Research , 1st Edition, Baghdad, Dar Al-Hekma for Printing and Publishing, 1993.

Supplements Module Module Template

Unit Time: 45 minutes

Details	Time	Module Sections
- Stand up and start the module with general body warm-up and exercise.	10D	Preparatory Section
- General information (general idea of the game of basketball, the history of its origin and development, the dimensions of the arena, the dimensions and measurements of the goal board, the number of players, the weight of the ball, as well as introducing them to the skills to be learned.	30D 10D	Main Section Educational Part
- How to feel, hold and control the ball – perform standby to perform handling and receiving skills and how to perform arm movements.	20D	The Applied Part
- Calm-down and relaxation exercises.	5D	Concluding Section