

Designing a device to enhance self-confidence and accuracy of shooting in the basketball (an experimental study)

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Abstract

Achieving good sporting results in any type of sporting activity has become the distinctive character of our present age, and this did not come out of a vacuum, but rather as a result of the use of knowledge and some different sports sciences as well as extensive studies in scientific research, especially in the field of sports training. Basketball is one of the sports that is widely practiced and occupies a good position today, as it has become so beautiful and magnificent that it has made those who practice it have the desire to express their rhythmic performance, as it is the wonderful mixture of many different skills, whether offensive or defensive, which participate to appear in a wonderful painting in which he expresses the players individually and collectively about their abilities in mastering these skills in games, especially when recording points (correction) high skill of accuracy and speed of the player born Wen . Also, the psychological aspect is considered one of the most important and basic aspects in preparing and preparing players for skills in general and correcting in particular. The shooting skill and its various types, especially shooting from afar in basketball, is one of the offensive skills and is the basis of the offensive skill performance, as the entire movements and skills end in the last resort, because this skill is the final outcome of the match's outcome. On the one hand, Youssef Al-Bazi and Mehdi Najm confirm that "Correction is the main goal that must be paid attention to more than other basic skills" (Yusef, 1988) On the other hand, it is a major measure to know the level of players and their ranking in this skill and its various types that are done through scoring points and determining the winning and losing teams as well as their ranking in the league. Therefore, emphasis was placed on the followers of several methods in the field of training. And since the basketball game is one of the games that contain multiple skills as in correction, it is considered the basis of match results, that self-confidence, accuracy and angle of correction is a fundamental factor in the results of matches, the widespread use of devices and tools in developing the game of basketball opens wide horizons for coaches and helps them In terms of physical and artistic and at other times artistic and physical. The importance of the research lies in the importance of the device in developing and enhancing self-confidence and giving it confidence in correcting the fact that this device is designed to develop more accurate and faster correction, because the device contains modern technology through iterations that build accurate movement programs based on the internal construction of the optimal model of performance and thus the player His performance has evolved through these two variables that develop the ideal accuracy of the players and therefore the researchers used this device for the purpose of enhancing confidence in the same player and developing the accuracy of correction and thus obtaining better results in matches as the correction occupies a large place among the skills and what should be worked on in order to develop it to achieve The best level.

Keywords: Design, device, self-confidence, accuracy, shooting, basketball

1. Research Problem

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See researchers that offensive skills in the game of basketball you need to high accuracy and self-confidence, especially in the skill of correction that depend on it match the results of the basketball, and the fact that researchers have a long history of training and through their participation in the Iraqi league and when you follow the games and players found that there is a weakness and decline of in the level of performance of the correction when the players compared to the players, and the back of humiliation as through the large number of failed attempts, where I am you score a few players compared to the number of times correction, and as a result of the lack of devices that have a role in making a difference in the performance of the skill and this problem sought researchers To work to enhance self-confidence and develop the correction of the specialized school players to improve the level of performance and improve their teams and their results and to contribute positively to the development of the basketball game. The development of performance for the accuracy of the skill of correction in the game of basketball must be developed what directs their training towards developing the skill through the use of exercises and assistive devices commensurate with the capabilities of the players.

2. Research Objectives

- 1- Designing a device that enhances self-confidence, developing the accuracy of correction in the basketball search eye.
- 2- To identify the effect of the device in developing the accuracy of correction with the eye of searching the basketball game.

3. Research hypotheses:

- 1- There are statistically significant differences between the pre and posttests of the experimental and control research groups in enhancing self-confidence and the accuracy of shooting a basketball using the (device).
- 2- There are statistically significant differences in the posttest between the experimental and control research groups in self-confidence and accuracy of shooting basketball.

4. Research areas:

- The Human Field: A sample of the female basketball players.
- Spatial domain: the closed hall for sports in Diyala.
- The time range: 1/15/2020 until 19/7/2020.

Research methodology and field procedures:

• Research Methodology:

It is the nature of the problem and the objectives of the research that determine the appropriate research methodology because “the procedure for controlling the influencing factors surrounding the experiment except for one factor of the independent variable for the purpose of measuring its effect on the dependent variable” (Dhafer, 2012). The experimental approach is also the closest approach to research to solve problems by the scientific method, which means “As they follow certain logical steps in dealing with problems or phenomena or dealing with scientific issues to reach the discovery of the truth ” (Abdullah, 1999). Therefore, researchers chose the experimental approach in harmony with the nature of the problem.

• Research community and sample:

“The objectives of the sample that the researchers describe for their research and the procedures they use will determine the nature of the sample that you choose” (Wajih, 1993) . The research community was represented by the female athletes of the Specialized School for Talent Care in Basketball. They were deliberately chosen due to the availability of all the research requirements of playground, supplies and players, and their number reached (12A player representing his lineage 100%From the original community,

and (4) Female athletes from Diyala Sports Club represented the exploratory experiment sample, and the research sample was divided into two experimental groups in a random manner and by the method of lottery, as each group consisted of (6(Players whose ages ranged from)16-18) Year,

- **Experimental design:** - Based on the characteristics of the research sample, the researchers used the experimental design with the method of equivalent groups (Thuqan, 1992), as they divided the individuals of the research sample into two equal experimental and control groups (6) A player for each group, as they were divided randomly.

5. Analysis of the research sample work: -

- *The experimental group (first):* They are subject to trainer practice, which uses regular exercises in the training modules.

- *The second experimental group:* Subject to the practice of the proposed curriculum exercises, which use the machine? The researchers also proceeded to conduct homogeneity between the sample members according to the variables (age, height, body mass) if the arithmetic mean, standard deviations, the median and the torsion coefficient were extracted for each variable. As shown in the table below (1)

Table (1) the homogeneity of the sample in the variables (age, height, body mass)

Variables	measuring unit	Arithmetic mean	standard deviation	Mediator	Coefficient of torsion
1- Age of the player	Year	16.983	0.921	17.2	-0.706
2- The length of the player	cm	164.08	9.104	164	0.026
3- Body mass	Kg	55	6.82	53	0.869

- **Devices and Search Tools:**

Search tools and devices: 1- The device: - The device is several pieces of iron, connected to each other, surrounded by a plastic mesh and surrounded by a frame and contains lights around the body with variable colors. The device is based on a plastic wheel (rubber wheel frame with an iron base) and the device contains an operating device to move the device Two-way (right-left) consisting of two controllable speeds and a 12-volt chargerV),, The total length of the device is 3.5 m.

Device tools & used equipment

- 1- Iron for scatheh
- 2- Plastic mesh.
- 3- Frame.
- 4- Lighting
- 5- A tape measure.
- 6- Power cable.
- 7- Electric point.
- 8-Volt Charger (12) V
9. Car tires size of 234
10. Woe a car

One of the most important considerations that aim to use this device is that it helps the player's performance and accuracy, the skill of shooting, and helps him increase self-confidence. The device consists of tools of various shapes and sizes used in the device, which are as follows: -1 - The arm: - (72) Cm Length, (4) Cm Width. 2-Chest: - Width (54) cm. 3- Head: - (21) cm length, the head with neck (27) cm. 4- Neck: - (6) cm

length. 5- The torso: - (62) cm length, (52) width. 6- Basin: - (50) cm wide. 7 - The lower limbs: - (90) cm length. 8- The authority rule: - It is a tire for a rubber steering wheel with an iron support base, the base diameter is (60) cm and the radius is (30) cm. 9- Operating device: - An iron box whose dimensions are (20) cm width, (28) cm length, It consists of two speeds, consisting of turning on and off an iron chain and a plastic lever of (18) cm in diameter, based on an iron platform (18) cm, (electrical socket), lighting along the body, on (the orbit of the body) 10- Plastic wheel (gear box)

Tools used in the search: Basketball court (legal)/ Basketball/ Two (2) passes/ Whistle/ stopwatch

Methods of gathering information:

- 1- Arab and foreign sources.
- 2- Personal interviews.
- 3- Experts and specialists.
- 4- Auxiliary work team.
- 5- Expert opinion survey form to determine the tests.
- 6- Registration forms to confirm test scores.
- 7- International information network (Internet).

Research steps

- Determining the tests used in the research: The researchers designed a questionnaire to choose the appropriate tests and was presented to a group of experts and specialists , to choose the appropriate tests for the skills of this study that contribute to the appropriate accurate measurement of the research sample, as it was agreed upon a set of tests whose questionnaires were distributed to a group of experts and specialists in several fields. Including specialists in the subject of tests, measurement, basketball and training, and then choosing the necessary tests by extracting the percentage of experts' agreement on them, as a skill test was determined to measure the accuracy of shooting with basketball and the table2)(It shows the percentage of the experts' agreement when the selection was made that achieves a percentage70%(And more) (Luay, 2010) .

Table (2) Special tests nominated and percentage of expert opinion

The name of the skill	Candidate tests for identification	The percentage of tests identified
- Aiming	Test the accuracy of the correction from jumping upwards with the ball raised in front of the head so that it does not obstruct the view of the basket (10) attempts.	64%
	Test The accuracy of the peaceful correction is (10) attempts.	75%

Tests used in the research: -

1- Jumping Shooting Accuracy Test (Winner, 1987)

- Test name: Test of jumping shot accuracy.
- Objective of the test: To measure the accuracy of the shot from a jump and its accuracy during ten attempts towards the basket.
- Measurement tools: basketball court, balls basket number (12), whistle, stopwatch, number of constructive mode (2), registration form assistant device.

- Performance description: When instructed, the player is aiming by jumping from inside the forbidden area at the device that was placed away 50Poison on the throat for ten attempts.
- Calculation method: The ten corrected attempts are counted and as follows when entering the ball antenna and not touching any part of the throat or board gives three points and when touching the throat or board and entering the ball gives two points and when the ball touches the throat or the board it gives one point and if the ball does not enter To either throat or plate a zero is given.

2- Exploratory Experiences: The first exploratory experience using the device: The pilot experiment is one of the necessary procedures that the researcher performs before performing the basic experiment. The reconnaissance experiment was conducted on February 28, 2020, corresponding to Friday at ten in the morning. The exploratory experiment was conducted on a sample of (4) players from Diyala club, but they were randomly outside the original research sample in order to identify the following purposes: -

- 1- Safety and adequacy of the tools used in the tests.
- 2- Calculating the time allotted for the test.
- 3- How to score the test.
- 4- Calculate the time allotted for the test.
- 5- The interaction of the research sample with the researcher.
- 6- The effectiveness of the assistive device

The second exploratory experience of the device: The researchers conducted the survey experiment on 2/3/2020, corresponding to Monday, on the same research sample on which the previous survey experiments were conducted, for the purpose of the following:

- 1- Know the time taken while taking the test.
- 2- Learn how to use the device and its features.
- 3- Learn about the player's data recording mechanism.
- 4- Identify the obstacles that face the researcher while performing the test.

Pre-Tests:

The pre-tests were conducted under the supervision and assistance of the assisting work team, and the procedures for the test were explained, the number of attempts in it, how to calculate and score points, and other test conditions The tribal tests were conducted on the research sample of (12) women representing. The experimental group and the control group, at a rate of (6) players for each group. Where performed. Alachtbaart tribal experimental groups and control group on Sunday , (8 \ 3 \ 2020) Clock nine in the morning in the stadium Gifted basketball (specialized schools where were written Asmaelaabat and recording their age and height and Awasenhm as well as) a test correction jumping test correction and peaceful have the researchers to explain and clarify How to apply the test

Main Experience:

The researchers prepared the exercises that included (24) training modules that were applied during the (main section) of the training unit, by relying on scientific resources and experts in the basketball game, as the application of the exercises began on (6/6/2020) corresponding to Thursday, as The researchers supervised the application of the exercises for the experimental sample only and applied them to the research sample of the assistant staff and trainers, as the exercises included a part of the training unit, which is the main section, equivalent to (45) minutes at a rate of three units per week, as the training unit included (17) exercises distributed On the training modules, the researchers took into account the gradual application of exercises from easy to difficult and from simple to complex with a gradual increase in performance difficulty.

Dimensional tests:

The researchers applied the post tests on the experimental and control research groups. After completing the main experiment, the researchers carried out the post tests on the research sample at (ten in the morning) on (Sunday) 7/19/2020, as it followed the same method that was Followed in the tribal tests, taking into account the spatial and temporal conditions, the testing methods, the same tools, and the support team that conducted the same tribal tests.

Statistical methods

The researchers used the statistical bag (SPSS) to complete the course of his research and determine the difference between the initial and posttests, as well as the difference between the post tests of the experimental and control groups.

- Arithmetic mean.
- Mediator.
- Standard deviation.
- Coefficient of torsion.
- Law (T) for independent samples.
- Percentage

Presentation, analysis and discussion of results:

- **Statistical description of test results**

Table (3) shows Arithmetic means, standard deviation, and standard error of pre and post tests

Variables	Type of test	Arithmetic mean	the sample	standard deviation	Standard error
Shooting from the bottom of the basket	Tribal	4.417	12	0.996	0.288
	after me	5.917	12	0.900	0.260
Shooting from the free throw line	Tribal	3.917	12	0.793	0.229
	after me	5.417	12	0.900	0.260

Through Table (3), the following results for the search variables appeared in the search sample in the test (correction from the bottom of the basket). The arithmetic mean in the pre-test reached (4.417) with a standard deviation (0.996) and with a standard error (0.288), while the arithmetic mean of the test was reached Dimensional (5.917), standard deviation (0.900), and standard error (0.260). For posttest (5.417), standard deviation (0.900) and standard error (0.260) when comparing the results, we find that there are differences in the test and in favor of the posttest.

- **The significance of the differences in the results of the pre-posttests for the researched variables**

Table (4)

Variables	Type of test	Circles teams	Difference deviations	Standard error of circles	t	Degree of freedom	mistake percentage	Indication level
Shooting from the bottom of the basket	Before me - after me	- 1,500	1.087	0.314	- 4.780	11	.001	moral
Shooting from the free throw	Before me -	-	0.905	0.261	-	11	.000	moral

line	after me	1,500			5.745			
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Below the significance level (0.05) and degree of freedom 11

Table (4) shows, when comparing (T) The calculated and compared to the level of significance, we find that there are significant differences in the two tests and in favor of the posttest. Through Table (4), the following results for the search variables appeared in the search sample in the test (aiming from the bottom of the basket). The difference in the circles reached in the post and pre-test. - (- 1.500) and the difference of deviations (1.087) and standard error of media (0.314) and reached its value t) -4.780). The results of the test (aiming from the free throw line) appeared, so the difference in the circles in the post and pretest test reached (-1,500) and the difference of deviations (0.905) and standard error of media (0.261) the value is t (-5.745).

Discussing the results

• **1-2-4Discussing the results of the experimental group**

He appeared across the table (4) there are significant differences between the pre and posttests in the search variable, as the results of the tests showed the significant differences and in favor of the posttest, it was found that the accuracy has evolved from what it was before the pre-test. The researchers attribute this development to the effectiveness of the device to enhance self-confidence, to develop the accuracy of the aiming and focus on aiming at the basket and to avoid randomness in selection and correction, as well as to the exercises that were applied to this group, which are the correction exercises from the bottom of the basket and the correction from the free throw line, as two shooting sites were chosen via The training unit for this group that uses the device and its exercises with appropriate repetitions, and thus the accuracy of correction was gradually developed and the speed of performance increased as the training stages of this group progressed, as (Essam Amin) emphasized: "The increase in repetition and training on the skill leads to an increase in mastery of that skill." (Essam 1977), the device and the exercises have their effect on enhancing confidence and developing the accuracy of shooting, as the device was designed on the basis of reducing the number of random throws for the player and focusing her attention on one point, and the player's duty to aim on it, and by repetition of the performance from different angles and places, the skill of shooting accuracy is refined as he indicates (Talha Hussein) pointed out that "there are several variables that affect the accuracy of performance, the most important of which are a sense of direction, distance, timing, the amount of force required, and the ability to control the game." Muscle boredom and its control "(Talha, 1993). The assistive devices and tools with the exercises direct the motor performance of the learner to the correct paths for optimal motor performance, and thus the sense of the motor path will generate in the learner a sensory effect and a perceptual knowledge of how the body parts move in the required directions (Mahmoud, 1990).

• **Discussing the results of the group tests for the pre and posttests : -**

Appeared across the table (3) For the results of the pre and posttests of the group A, it has achieved a moral difference in favor of the dimensional test of skill performance, and the researchers attribute this to the regularity in training on the curriculum, as the trainers emphasize the importance of shooting from the free throw line and aiming from the bottom of the basket in their daily training, because of their philosophy that it is more secure On points during the match, as well as the way in which training is carried out has a major role in influencing the player's performance. The training process, when modern methods are used in it, develops the capabilities and skills of the players required by the game and the skill involved, as (Mahmoud Al-Shati and others) indicated, "that there is a close relationship between The motor skills and the physical character that the player acquires during the training process " (Mahmoud, 1990) .

- **3-2-4Discussing the results of the four research groups and analyzing them in the dimensional skill tests**

The researchers attribute the results of the test (correction), as the development was observed at a high rate in the test (correction), due to the fact that the device has added, with the designed exercises that were applied in the units to the players, a lot of development in skill performance and thus the development of correction, and the reason for this is due to the angle of vision They have become more narrow than the randomness in the kinematic performance of aiming and when using the device it reduced the percentage of randomness in aiming by aiming at specific and clear areas for them and thus they have a clear and accurate point to aim towards and neglect the rest of the random points and thus the correction was developed and this made it Players are rushing towards training and shooting as a result of what training added to the device, as well as the suspense that aroused them for performance and correction on the throat, and with this we have achieved several goals, which are that the correction has evolved as well as the impulse towards training has increased, and with this impulse it helped repetition in performance, as he mentioned (Mahdi Najm and others), according to the report. On (Kurt Maynell 1987) that “the continuous repetition of exercises, be it physical or skillful, raises the ability of the level” (Mahdi, 1995 Mahdi, 1995) These make it reach a level of good quality performance, which led to the preservation of the number of iterations and their performance within the specified time and according to the requirements of the performance of the exercise or skill and this is consistent with what he indicated (Mahjoub, 2001) that “the exercise with the tool moves the learner to better performance during Practice ” (Wajih, 2001) .

Conclusions and recommendations

- **Conclusions**

In light of the research results, the researcher came to the following conclusions:

- 1- The device has contributed to increasing self-confidence and developing the accuracy of correction in the search variables for the experimental group with which I use the device.
- 2- The results of the post- tests between the two research groups showed a remarkable development in all the skill tests.
- 3- The experimental group achieved statistical differences in all the pre-posttests in favor of the post test

- **Recommendations**

- 1- The necessity of using the device in the training units because of their effective impact on enhancing self-confidence and developing the correction skills of the players.
- 2- Attention to developing a special curriculum that includes the device in training centers, clubs and all groups because of its effective impact on developing skills faster than training that does not contain the device.
- 3- Researchers recommend excellent class trainers to take advantage of the device, as it gave very advanced results.
- 4- The use of devices to develop accuracy in aiming with basketball, because it is more accurate than eye viewing and keeps pace with the mathematical development and its requirements such as the device as it helps in developing the accuracy of shooting with high accuracy in the modern way.
- 5- Researchers recommend conducting similar research with different samples.

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