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The effect of compound exercises on the performance of some offensive skills for junior basketball

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Abstract---It is necessary to focus on training those abilities and using auxiliary training methods in exercises that simulate individual or group offensive performance with the cooperation of two or three players among basketball players for the junior category, as it is the reliable category in the future as the bond and the main pillar of the national teams, so attention must be paid to this age group by preparing Complex exercises linking the physical and skill side to advance the level of Iraqi basketball, as its development in the early stages of life through general physical exercises leads to reaching a high level of performance ability. The first is to enrich scientific research in the sports field by providing new knowledge information that can be used, and the second is that the data that the researcher will obtain through her study will be an important reference for many researchers and trainers to benefit from.

Keywords---compound exercises, offensive skills, basketball.

Research problem

Does the use of compound exercises have a positive effect in developing some modern offensive skills in basketball for the juniors category?

Research aims

- Preparing complex exercises to develop some offensive skills in basketball for juniors.

- Recognizing the effect of compound exercises in developing some offensive skills in basketball for juniors.

Practical part

The researcher used the experimental design with the experimental and control groups for the pre and post-test on Al-Tadamun club players for the junior basketball category aged (15-16) years participating in the Iraqi Junior Basketball League and officially registered in the records of the Iraqi Central Basketball Association for the sports season (2021-2022).), the research community has reached (14) players.

Equality of the sample members

To ensure one initiation line for the two groups, the researcher proceeded to extract the equivalence of the sample in the study variables (offensive skills) all under study for us to know the initiation line for the two groups, which must be equal. The results of the tribal tests for the two groups (the control and experimental), and Table (1) show the equivalence of the control and experimental groups.

Table 1
It shows the equivalence of the two research groups (control and experimental)

Variables	Unit of measure	Control group		Experimental group		Calculated t value	Significance
Euro step lay-up skill Euro step	Degree	4.333	1.032	4.166	0.408	0.366	Not significant
Handoff skill Delivery and receiving (direct with the curtain)	Degree	4.166	0.7527	4	0.632	0.414	Not significant
Floater shoot skill Front Air Shooting	Degree	3.666	0.516	3.833	0.752	0.445	Not significant

Tabular value (t) = (2.201) at the level of significance (0.05) and the degree of freedom (11). It shows that there are no significant differences between the two research groups in these variables, which number (12) players, as the calculated (t) value was greater than (0.05), which means that there are no significant differences between the two research groups in these variables, and this indicates the equality of the two groups in The variables used in the research.

Scientific part

To achieve the main objective of the research, which is to identify the effect of compound exercises using aids in developing the most important motor abilities and offensive skills, the researcher had to follow specific basic steps as well as some detailed steps that she needed to achieve that goal, and from these steps the following:-

Defining offensive skills

To determine some of the modern offensive skills that must be available to young players, the researcher reviewed many Arab and foreign sources that were concerned with offensive skills, and the researcher met with experts and specialists in basketball and deviated from the basic skills and modernity in offensive skills through the researcher's follow-up to the official websites of N.B.Due to the development of basketball in various countries of the world, especially in America and Europe, the researcher designed a questionnaire and presented it to several experts and specialists, whose number was (13) experts in basketball, to express their opinion about some modern offensive skills in basketball. Extracting the percentage of experts' agreement, the researcher chose the skills that took the highest percentage of the experts' agreement, which is (75%).

Offensive skills tests

The researcher modified the tests that she quoted from the researcher (Sajjad Hussain Nasir) (), to adapt the tests to the nature of her research, the game and the sample of her research.

- **First test:** Euro step la-yp skill test
  Test name: Euro step la-yp skill test.
- **Second test:** Floater shoot skill performance test
- **The third test:** Offense Screen Test

Survey experiments

To give a clear and accurate picture of the tests used in the research, the researcher conducted two exploratory experiments on a sample of (6) players from Al-Tadamon Basketball Club (junior category) in Najaf Governorate, and they are from within the research community and from the main research sample, to stand On the negatives and errors that the researcher encounters in an attempt to overcome them, and to ensure accurate and honest results, as indicated by his ears:

First exploratory experience

Date: May 12, 2202, on Thursday at four o'clock in the afternoon.

- **Venue of the experiment:** The closed sports hall in Al-Tadamun Sports Club in Najaf Governorate.

- **Purpose of the experiment:** The purpose of this experiment, was for each of the offensive skill tests in basketball, which (Euro step layup. Floater Shoot. offence Screen) for the following objectives:
  - Know the time is taken for each test, and the total time for the tests.
  - Knowing the suitability of the tests to the level of the sample, how to conduct the tests, their sequence, and the extent of their ease and difficulty for the research sample.
  - Ensuring the suitability and validity of the devices and tools used in the research.
  - The suitability of the forms prepared for registration.
  - Diagnosing and identifying the obstacles and negatives that the players may face during the tests to avoid them when applying them in the curriculum and the pre and post-tests.
  - Ensuring the adequacy and organization of the work team assisting in the implementation of the tests and knowing the method of measuring and recording data.
  - The best place to photograph.
  - Extracting the scientific bases of the tests (honesty, reliability, objectivity).

Through the first exploratory experiment, the researcher reached the following results:

- The tests were compatible with the level of the sample, but there are notes about the detailed explanation of each test in a good way and the player's attention to the test presentation.
- The clarity of illumination for the players through hanging lamps.
- Adequacy of the number of the assistant work team and their good training, stabilization of their places and their understanding of the tests.
- The researcher ensured the adequacy and safety of the tools and devices placed and the appropriate place for the tools and their dimensions.
- Give enough time between the tests to return to the normal situation so the players can be safe from injuries and not have the effect of fatigue on the test results.
- Explanation of the order of the tests according to their logical sequence.

The scientific basis for the tests

To reach the most accurate results and to ensure the validity of the tests, the research tests were subjected to scientific bases that are determined by reliability, honesty and objectivity. Where (Muhammad Al-Yasiri) states, “The test is not considered a valid tool for measurement unless it fulfils certain conditions, and the validity, stability, and positioning of this tool are among the most important of these conditions. The researchers found scientific bases for it, and thus they are standardized tests. The standardized test “is the test whose vocabulary is formulated and its instructions are written in a way that ensures its stability if it is repeated. It also includes its validity in measuring the trait or phenomenon that was designed to measure it. It is a test given before to many samples or groups

under standardized conditions. And set her standards. On this basis, the researcher conducted the scientific basis for the tests under study, as follows:

Test validity

Validity is defined as “the ability of the test to measure what was set for it or the characteristic to be measured.” (3) The validity of the test is one of the important scientific foundations for a good test that the test-taker or the conductor of the test must take into account the validity of the test results. All the details of the tests in the questionnaire form (□) and presented to the experts and specialists, whom all confirmed the validity of the test in measuring what was set for it, so the researcher relied on the validity of the content for its suitability to the nature of the work.

Test stability

To know the extent of the stability of the test results, the researcher calculated the stability of the research tests using the method of applying the test and returning it to the exploratory sample of (6) players from the research community and the basic sample. On Thursday, 5/19/2202, after (7) days of the first application, in the same place and time, with the same circumstances, the same conditions, the same tools, and the assistants, i.e. using its method (testing and re-formatting) the test. In determining the degree of stability of the practical test in physical education, the data has been statistically processed by calculating the simple correlation coefficient (Pearson) between the first and second applications if the value of the level of morale is less than (0.05%), which indicates that all tests have high stability.

Field Research Procedures
Pretest

After the researcher made sure of the homogeneity of the sample members and divided them into two groups (control and experimental) and made parity between the two groups, the researcher, with the help of the assistant work staff, started the following procedures: The tribal tests of offensive skills were conducted on the research sample for the two groups (controller and experimental), which are Al-Tadamun basketball players for juniors in Najaf Governorate on Wednesday and Thursday, 25-26/5/2202 in the sports hall in Al-Tadamun Club at four in the afternoon, to obtain On the results of the tests for the study variables (offensive skills) with the help of the work team, as the first day on 25/5/2022 corresponding to Wednesday began to conduct special tests and the tests were according to the following sequence:

- Euro step lay-up skill.
- The skill of hand-off delivery and receipt (direct with the curtain).
- The skill of the Floater shoot.

Main Experiment Procedures

After completing the preparation of the complex exercises (physical - skill) and their suitability to the nature of the research sample, as well as making sure that parity is achieved between the two research groups (control and experimental) and addressing the issues mentioned by the exploratory experiments and benefiting from them in organizing work and preparing for the main experiment, the researcher conducted the main experiment On the sample of the research by introducing the independent stimulus within the practical side of the special training units in the development of motor abilities and offensive skills targeted in this research and the work in the experiment was as follows:

First: The number of compound exercises

To achieve the objectives of the research, the researcher prepared and organized a set of complex exercises (physical - skills) by training methods (interval, high intensity and repetition) and their suitability to the nature of the research sample to develop some offensive skills, which are used to develop the motor and skill performance of junior basketball players in terms of speed and strength The accuracy in performing the skills studied, which helps to develop the technical level of the sample members according to the complex exercises, by reviewing many Arab and foreign scientific sources related to the game of basketball and the Internet, and conducting personal interviews with specialists and experts in sports training and basketball, referred to previously, To take advantage of their scientific opinions and observations to reach the complex exercises that are compatible with the specifications of the age group in the research, the available possibilities. One, and that the preparation of the exercises was based on scientific foundations in terms of:

- The suitability of the content of the compound exercises to the level and abilities of the research sample members.
- Taking into account the purpose of the number of compound exercises.
- The researcher distributed the research sample into two groups (control and experimental), where the experimental group uses the training curriculum prepared by the trainer with the introduction of compound exercises using training aids to develop the abilities and offensive skills investigated. These compound exercises were used in the main part of the training unit, while the control group This group uses the training curriculum prepared by the trainer in developing the complex abilities and offensive skills investigated without using compound exercises using training aids, while the experimental group is training and it was under the supervision of the trainer and his approach that he followed only.

Second: the application of compound exercises

- The (24) complex exercises were implemented in the practical part of the main section, for a period of (10) weeks, at a rate of (3) training units per week at a rate of (30) training units on days (Sunday, Tuesday and Thursday) for the experimental group out of (6) Training units per week, and Friday is a rest for the team, in the special preparation stage and the semi-

competition stage, and these three days were determined after referring to the training curriculum and taking into account the undulation in the training units prepared by the coach, and the researcher relied on the method of periodic training with high intensity (80- 90%), and the method of repetitive training (90-100%) in developing the variables under investigation, which are offensive skills (Euro step layp skill, Hand off and offense Screen skill, Floater shoot skill, Offense Screen skill) and to achieve the purposes and objectives of the training process from During the measurement of the maximum performance time for repetitions and for each exercise using the 1RM method, the time of the training unit was (90 minutes), where the compound exercises were carried out with a time of (13.85 d - 58.85 d) minutes from the main training unit and by (4) compound exercises, and the researcher did not interfere in any section who is harsh Or the training unit, except for the time allocated for the compound exercises, and the team coach (*) was the one who trained (the experimental group), making the player change in the traditional training methods as well as using training methods, auxiliary tools and devices to help him develop offensive skills, and the researcher was keen on the progress and follow-up of the units Training in order to ensure adherence to the application of compound exercises, provided that the proposed exercises have several characteristics:

- Taking into account the rest periods, which were guided by the researcher through the exploratory experiment by the ratio of work to rest to ensure that the players do not reach the stage of abnormal fatigue and to ensure that the functional devices reach the appropriate period for repetition or the subsequent group.
- Gradual (1:2) method was used to increase the load between daily and weekly training units when applying compound exercises using high intensity and repetitive interval training.
- The researcher coordinated with the trainers of the experimental and control sample to work on unifying the time and number of applied training units. The minimum intensity was 80% for the motor and skill performance units, and the upper limit was 100%.
- Intensity (80-90%) was used for the first and second week and intensity (90-95-100%) for the following weeks, and the maximum performance time is re-measured at the beginning of the second month and the beginning of the third month of the training curriculum.
- Below is a detail on how to use these exercises with the mentioned training methods.
- The training program was presented to the experts, and there was a 100% agreement.
- The researcher was keen on the conduct and follow-up of the training units to ensure adherence to the application of the compound exercises prepared by the researcher and directed at developing agility and compatibility between the hand and the eyes and between the legs and the eyes, as well as helping to develop the offensive skills in question.

Post-tests

The post-tests were conducted on (Monday and Tuesday) on 8/8/ 2022 and 9/8/ 2022 at exactly four o'clock in the afternoon in the sports hall in Al Tadamun

Sports Club. And the work team to achieve the same or similar conditions as possible to the atmosphere of the pre-test for the research sample, that is, as the pre-tests were conducted and the conditions, specifications and conditions they contain.

Statistical means

The researcher used the statistical methods through the statistical package (SPSS:21) and the appropriate biological treatments to extract the results.

Results

Presenting, analyzing and discussing the results of the tests of the basic skills under study for the experimental and control groups: Presentation of the results of the arithmetic means, standard deviations, the value of (t), the level of error and the significance of the differences between the results of the pre and post-tests of the offensive skills under study for the experimental and control groups and their analysis:

Table 2
It shows the arithmetic means, standard deviations, the calculated (t) value, the level of error and the significance of the differences between the results of the pre and post-tests in the offensive skills of the experimental group

the test / Variables	Unit of measure	Pretest		Posttest		Calculated t value	Indication type
Euro step lay-up	Degree	4.333	1.032	7.333	0.816	11.618	significant
Floater Shoot	Degree	3.666	0.516	7.5	0.836	23	significant
Hand off and offense Screen	Degree	4.166	0.7527	7.666	0.516	15.652	significant

Tabular value (t) = (2,571) at the level of significance (0.05) and the degree of freedom (5).

Table 3
It shows the arithmetic means, standard deviations, the calculated (t) value, the level of error, and the significance of the differences between the results of the pre and post-tests in the offensive skills of the control group

the test / Variables	Unit of measure	Pretest		Posttest		Calculated t value	Indication type
Euro step lay-up	Degree	4.166	0.408	5.001	0.632	5	significant
Floater	Degree	3.833	0.752	5.166	0.408	6.324	significant

Shoot							
Handoff and offence Screen	Degree	4	0.632	5.166	0.752	7.001	significant

Tabular value (t) = (2,571) at the level of significance (0.05) and the degree of freedom (5). Presenting the results of the arithmetic means, standard deviations, (t) value, the level of error and the significance of the differences between the results of the post-test for the two experimental and control groups in the basic skills tests under study and analysis:

Table 4

It shows the arithmetic means, standard deviations, the calculated (t) value, the level of error, and the significance of the differences between the results of the post-test for the two experimental and control groups in the offensive skills tests

the test / Variables	Unit of measure	Control group		Experimental group		Calculated t value	Indication type
Euro step lay-up	Degree	5.001	0.632	7.333	0.816	5.307	significant
Floater Shoot	Degree	5.166	0.408	7.5	0.836	5.856	significant
Handoff and offence Screen	Degree	5.166	0.752	7.666	0.516	6.368	significant

Tabular value (t) = (2.201) at the level of significance (0.05) and the degree of freedom (11)

Discussing the results of offensive skills

The researcher attributes this moral difference to the effectiveness of the complex exercises using the auxiliary training tools during the training units, which had a clear impact on developing the offensive skills under discussion, and through the process of continuous and continuous training, which led to an increase in the sample's ability to implement what is required of it. The kinetic aspect has developed with the skills The exercises used. And the practice and application of the research sample members to offensive skills exercises had a positive impact on finding neuromuscular compatibility by focusing attention and visualization to repeat skills again and again, and thus the motor sense of skills increases and is more accurate with continuous repetitions, and the increase in performance of repetition and practice of any skill gave An advantage in determining the performance of the movement and reducing the percentage of its errors, and this was indicated by (Nahida Abdel Zaid) "The sense of skill, both mentally and physically, contributes to its development, especially if it is within a program based on scientific standards that the educational process is subject to" (1).

As for the control group, the results of the offensive skills tests under the study table (17) showed that there was a significant difference between the pre and post-tests and in favour of the post-test. Ahmed Abdel-Fattah and Ahmed Nasr El-Din 2003) as "the use of exercises that are consistent in the nature of their performance with the general form of the performance of specialized skills leads to better results" () and the use of sufficient repetitions of exercises in the training process leads to a significant improvement in the performance of the players and points out (Ahmed Abd al-Rahman Raja al-Masalmah) "The enhanced repetition through which we notice a gradual improvement in the player's performance as a result of the reinforcement that occurs as a result of the internal stimuli that provide the player with knowledge to reach the correct performance and confirms (Amin Anwar al-Khouli and Osama Kamel Ratib)" that repetition is a basis for learning and identifying The number of repetitions of the movement is an important matter, as it depends to a large extent on the acumen and experience of the trainer in determining the optimal number of repetitions appropriate for each tooth journey.

Conclusions

After analyzing the research results statistically and discussing them, the researcher reached the following conclusions:

- There is a positive effect of the proposed approach, which includes complex exercises using training aids.
- The necessity of using high-intensity compound exercises to develop offensive skills in basketball.
- Compound exercises helped develop some offensive skills in Euro step lay-up basketball, Floater shoot and offence screen.
- The variety of exercises used in the proposed curriculum helped in developing (agility and coordination) and some offensive basketball skills.

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