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The Effect of an instructional approach by interfering with the random variable exercise of the non-preferred arm on the students' learning of the stroke and the peaceful scoring of the preferred arm of the students

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Abstract
The study aimed to identify the interaction of random exercise of the non-preferred arm of students in learning the skills of high-pitched and peaceful scoring, where the researcher used the experimental method for the sample of (20) students and for the two equal groups for their suitability to solve the research problem, and that the research problem is to focus on one arm (the preferred) The learner has neglect of the other arm in learning performance, which leads to students mastering the skill in one arm only, so the researcher decided to prepare an educational curriculum by interfering a random-variable exercise for the preferred and non-preferred arm, i.e. to learn both arms together for the students, and the researcher used the spass program for statistical treatments, and concluded The researcher said that a random exercise approach has an active and positive role in developing the non-preferred arm and also worked to increase the effectiveness of the non-preferred arm in teaching tapping and peaceful scoring, where the researcher recommended investing the non-preferred party (the neglected) in training, teaching and focusing on it in order to increase its effectiveness and help it in motor performance. To the other arm in all skills in basketball and other sports to reach the optimal performance of the students.

Keywords: Basketball, skill learning, non-preferred, students, stroke

1. Introduction
Basketball is one of the events with special requirements in terms of physical and technical abilities that play a major role during the stages of learning the skills of the game of basketball in which the player's movements change from one skill to another in terms of technical performance of skills. There are still difficulties facing specialists in the educational process in learning and mastering basketball skills, so specialists in the field of educational curricula are trying to find ways and methods that help the teacher and teacher to manage the educational unit and try it and try to reach the most appropriate curricula and educational units that will help in developing the educational process Learning various sports games, especially basketball, in which many methods are used to learn skills, including the tap, which is one of the most important skills that an individual learns in basketball as it is linked to many skills and is the primary means of moving the ball inside the court. It is one of the important teaching methods that help the learner to create motor programs in the brain for the desired skill Learning it, the process of transferring the effect of learning is one of the important learning methods that have an effective role in the process of skill learning and connecting learners to optimal skill performance, including arm exercises that are not preferred in performance.
From here, the importance of the research is evident by seeking to find educational exercises to develop the skill of tamping and the skill of peaceful scoring with the non-preferred (neglected) arm, as well as the preferred arm, which is a step added to the learner's experiences, enhancing the players' abilities and improving their performance with both arms.

1.1 Research problem
The learning process is a big process, and the teacher tries to get acquainted with all the new

ideas and educational methods through which he seeks to develop the players and reach them to the optimal skill performance or the optimal achievement.

Through the researcher's experience in the field of the game and his follow-up to the lessons in the faculties of physical education, he noticed that some workers in this field focus in their teaching of tapping and peaceful scoring on the learner's preferred arm, often neglecting teaching with the unfavorable arm, and that in the basketball game the learner needs both hands in skills Basketball and he has to master or teach in both arms, as well as the player's focus on using his arm without using both arms, as the ease in carrying out motor duties and the difficulty in accustoming the non-preferred arm to performance and mastery, especially if this party has been neglected since the beginning of the learning process, so the researcher found It is necessary to invest the non-preferred arm (neglected) during the training process and focus on it in the training work to know the extent of its impact on learning the drum and peaceful scoring with their favorite arm.

1.2 Research Objectives

The research aims to

1. Preparing an educational curriculum by interfering with the random variable exercise of the non-preferred arm in learning the students' preferred arm patina.
2. Recognizing the effect of the educational curriculum prepared by interfering with the random variable exercise of the non-preferred arm in learning the high clapping of the preferred hand of the students.
3. Recognizing the effect of the educational curriculum prepared by interfering with the random variable exercise of the non-preferred arm in learning the peaceful scoring of the students' preferred hand.

1.3 Research Hypotheses

1. There are statistically significant differences between the pre-test and the post-test for the studied variables and in favor of the post-test.
2. The unfavorable arm exercises have an effect on developing the high clasp of the preferred arm.
3. The unfavorable arm exercises have an effect on developing the peaceful scoring of the preferred arm.

1.4 Research Areas

1. The human field: students of the first stage of the College of Physical Education and Sports Sciences / Al-Mustansiriya University.
2. Time range: the period from 1/3/2021 to 23/5/2021.
3. The spatial domain: the inner hall in the College of Physical Education and Sports Sciences / Al-Mustansiriya University.

2. Research methodology and field procedures

2.1 Research Methodology

To reach scientific and objective facts, it is necessary to choose the appropriate approach to research, so the researcher chose the experimental method because it is the most appropriate method to solve the research problem. And experience of all kinds. (80:3)

2.2 The research sample

After the researcher was determined, he chose his sample at random with (20) out of (292) students representing the stage D Division in the college, thus forming a percentage of 7% of the research community. A player representing the experimental sample and the same as the second group represented by (10) players used by the researcher as a control group. Use the skew modulus law as shown in Table (1).

Table 1: It shows the homogeneity of the research sample with the variables (height - weight - age)

Variables	Measuring unit	Arithmetic mean	Standard deviation	Mediator	Skew modulus
the age	year	_ 18.211	3.463	18	0.431
weight	kg	_ 69.88	8.032	61	0.772
Length	poison	1 74 .42	13.2 4	1 75	0.291

The researcher also performed equivalence for the research sample as shown in Table (2) for the two groups (experimental and control).

Table 2: It shows the arithmetic means, standard deviations, and the (t) value calculated for the pre-test and for the control and experimental groups in the research variables to equalize the research sample.

Indication	value(t)	The officer		Experimental		Measuring unit	Statistic / Variables
		+ p	s	+ p	s		
random	0,461	1,53	4.75	1,32	4,43	Time	High chuck
random	0,456	1,32	5,30	1,56	5,44	Degree/time	Peaceful scoring

* At the significance level (0.05) and at the degree of freedom (n-2=18)

2.3 Devices, tools and means used in the research

1. A legal basketball court.
2. Basketball number (6).
3. Numbers (5)
4. Whistle number (2).
5. Stopwatch number (1).
6. Tape measure.
7. Colored adhesive tape (1).
8. Medical scale.
9. Four (4) chairs.
10. Nikon type camera) number (1).
11. Data registration form
12. Arab and foreign sources.

2.4 Field procedures for research

2.4.1 The peaceful scoring test after performing the trumpet. (347:9)

The purpose of the test: measuring the ability to change direction, handling the ball with two hands, speed and accuracy in shooting at the basket.

Tools: two (2) chairs, two (2) stopwatches, a basketball goal surrounded by clear and defined borders.

Procedures: Two lines (A - B) are drawn on the ground (12) feet long from the middle of the finish line, and each line makes a 45 angle with the finish line.
A chair is placed next to each line, and one basketball is placed on each chair.
On each of the two side lines, a line of length (24) inches is drawn, and this line is called the starting line.

- Place one foot apart and to the side of this line a chair on which a basketball is placed.
- The player stands next to the chair, and when she is given the start signal, she picks up the ball from above the chair and then returns to the starting line (B) and then pats and runs with it towards the basket, and when she approaches the basket she shoots at it, then picks up the ball, and passes it immediately to the assistant standing next to The chair is at the starting line (B), who in turn receives it and puts it on the chair.
- After the tester passes the ball towards the starting line (B), he runs towards the chair at (A), then she picks up the ball from above the chair and begins to pat it and run with it from the starting line towards the basket, where the run ends with a peaceful shot at the basket, then She picks up the ball after shooting and passes it to the assistant at (A), who in turn receives it and puts it on the chair, and so it continues catching the ball, running and shooting from both sides alternately until it completes (5) times on each side and the sum of the shots on each basket from each side is (10) corrections.
- The run must start with the ball on each side behind the starting line (24) inch.
- The timekeeper calculates the time from giving the start signal to the player until the player catches the ball after shooting it on the basket on the tenth time.
- Each laboratory is given three consecutive attempts, between each attempt and the other, a rest period of not less than (2 minutes).

Test instructions

- The test must be started every time the laboratory tries to run and tap the ball and shoot the basket from behind the 24 inch line.
- The ball must be patted while running in a legal manner in accordance with the law of the game.
- Not jumping twice with the ball in one shot.
- he attempt does not count as valid if the lab did it by tamping and jogging, then stopped and then resumed it again.
- The timekeeper calculates the time and records the errors in which the laboratory falls.
- The scorer calculates the points resulting from hitting the target and saves the number of goals scored by the tester, and notes the timer when the tester reaches the ninth shot.

Calculation of grades
The score is calculated by linking the time it takes to the laboratory and its accuracy in shooting at the basket.
The time is calculated from the moment the tester gives the start signal until the moment of catching the ball after shooting it to (1/10) of a second.
Accuracy in shooting is calculated as follows:

a. The laboratory is given a score of (2) for each ball that enters the basket.
b. Given to the laboratory (1) for each ball that hits the ring from the top and does not enter the basket.
c. The laboratory shall not be given any score when the basketball misses or touches the ring.
d. One second is added to the total time recorded by the laboratory, when a violation of the test instructions is committed.

The final score of the test is (the sum of the degrees and the sum of the seconds, and the best score of the three attempts is calculated for the laboratory).

2.4.2 The 20-meter high chuck test with the dominant arm (101:5)
The purpose of the test: To measure the speed of the high chuck.

Instruments: basketball court, electronic stopwatch, basketball, tape measure, start whistle
Number of Attempts: Each lab is given only one attempt.

Calculation of points: The laboratory's score is the time it takes to perform the test from the moment it was given the start to the time it completes the test.

2.5 Scientific bases for the tests
1. Test stability
The (test and re-test) method is one of the most widely used methods for test reliability, and it is worthy of being followed in experimental research by applying the test twice in a row on two different days (162:14).
(The correlation between the scores of the first application and the scores of the second application on the test reliability coefficient) (58:4)
As the assistant work team, under the supervision of the researcher and supervisor, applied the tests on Sunday (3/2/20212020) to a sample of (4) students from the same stage, and the test was repeated on the sample on Sunday (10/2/2020) under the circumstances. The same, then the correlation coefficient between the two tests was extracted by Pearson's simple correlation coefficient law for each test and it was found that the tests have a high degree of stability as shown in Table (2).

2. Objectivity
For the purpose of ascertaining the objectivity of the tests, the researcher used the scores of arbitrators* recorded during the re-tests on 3/11/2020, and after their results were statistically processed using the Spearman correlation coefficient, the objectivity of all skill tests was confirmed.
Veracity of tests.
Honesty depends on the extent to which the test measures the skill or ability to be measured, and that honesty means (the test measures what is intended to be measured) (23:10)., see Appendix (3), and they agreed that these tests measure the ability and skill that they were designed to measure. Since the validity coefficient depends on the reliability coefficient, it increases with its increase and decreases by its decrease (118:2), so the researcher used self-honesty where there is a link between stability and self-veracity, which is measured by calculating the square root of the test reliability coefficient. As shown in Table (3).

Table 3: Which is measured by calculating the square root of the test reliability coefficient

Indication level	Indication	Objectivity	Self-honesty	Indication level	Indication	Constancy	Physical and skill tests	T
Moral	0.000	0.986	0,994	Moral	0.005	0.990	20m high chuck test	**1**
Moral	0.002	0.862	0,910	Moral	0.021	0.815	Peaceful scoring test	**2**

2.6 The exploratory experiment: The date of the experiment: 1/3/2021 am.

- **Place of the experiment:** the closed hall in the College of Physical Education University of Karbala.

- **Sample:** The survey sample consisted of (5) students from the first stage in the College of Physical Education and Sports Sciences - Al-Mustansiriya University and who were not participating in the main experiment.

- **Objectives of the experiment**

1. Introducing the assistant work team to the nature of the tests and knowing the extent of their efficiency.
2. Avoiding the obstacles facing the researcher during the implementation of the tests.
3. Knowing the approximate time taken for each test and the time taken to conduct the tests.
4. Ensuring the scientific transactions of the tests.
5. Identify the appropriate time for the exercises used.

2.7 Tribal tests

The researcher conducted the tribal tests on 3/3/2021 in the closed hall at the College of Physical Education and Sports Sciences - Al-Mustansiriya University at ten in the morning.

2.8 Educational Curriculum

The researcher prepared a curriculum consisting of exercises by overlapping the two methods for the random and variable exercise, where the curriculum contained a set of skill exercises for the arm that are not preferred by the sample individuals for the skill of high drumming and peaceful scoring. The implementation period of the curriculum took (10 weeks), at a rate of (2 units) per week and days the number of units reached (20 units), and the main section was used only (70) minutes

(14/3/ 2021 until 20/5/2021) The researcher also used a set of exercises according to the goal and purpose intended for it. The principle of gradation was also used as from easy to difficult in giving skill exercises in both fixed and variable methods. The researcher also took into account the principle of gradation and undulation in the difficulty of performing the exercise according to the difficulty of performance, as for the rest between repetitions according to the difficulty of performing the exercises as well as the rest between groups.

2.9 Post-tests

The post tests were conducted on Saturday 23/5/2021 for the experimental and control groups and on the tennis court, where the conditions and instructions for implementing these tests were taken into account and under the same conditions and possibilities available and used in the initial tests, in order to obtain objective results with high stability that depend on It has to make the decision.

2.10 Statistical means

The (SPSS) program was used on the electronic calculator to reach the search results.

4. View the results

The researcher presented the results obtained through the implementation of the research after processing it statistically and the results were arranged in the form of tables illustrating the research variables for both the experimental and control groups in the pre and post tests.

Table 4: It shows the arithmetic means, standard deviations, the value of the mean difference and deviation, and the (T) value calculated for the pre and posttests of the studied variables for the experimental group.

Indication	Calculated T value	QQ	Q	Experimental group post test		Experimental group pre-test		Measuring unit	Variables
				± _	S	± _	S		
Moral	4.65	1,22	2,68	0,86	3,99	1,32	4,43	Time	High chuck
Moral	4,021	0.53	3,86	0,98	7,30	1,56	5,44	degree/time	Peaceful scoring

At the significance level (0.05), the degree of freedom (n-1 = 9) and the tabular degree (1,833).

Table 5: It shows the arithmetic means, standard deviations, the value of the mean difference and deviation, and the (T) value calculated for the pre and posttests of the studied variables for the control group.

Indication	Calculated T value	QQ	Q	The control group was post-test		The control group pre-test		Measuring unit	Variables
				± _	S	± _	S		
Non moral	1,471	0.55	0,42	0,45	4,51	1,53	4.75	Time	High chuck
Non moral	1,770	1,17	5,39	1,76	5.01	1,32	5,30	Degree/time	Peaceful scoring

*At the level of significance (0.05) and at a degree of freedom (n-1 = 9) and at a tabular degree (1,833)

Table 6: It shows the arithmetic means, standard deviations, the value of the mean difference and deviation, and the (T) value calculated for the pre and posttests of the studied variables for the control group.

The significance of the differences	value (t) calculated	control group		experimental group		Measuring unit	Variables
		P	S	P	S		
Moral	1,821	0,45	4,51	0,86	3,99	Time	High chuck
Moral	1,730	1,76	5.01	0,98	7,30	degree/time	Peaceful scoring

* At the level of significance (0.05) and at a degree of freedom (20-2 = 18) and at a tabular degree (1,734)

4. Discuss the results

Table No. (4) Shows that there are significant differences between the pre and posttests of the experimental group in the skill of high clapping and the skill of peaceful scoring. The researcher believes that the reason for this development is due to the fact that the experimental group passed educational experiences through an educational program that was prepared based on the application of theories The scientific method through the overlapping of the random and variable exercise, and therefore it gave a positive effect in the high-pitched skills and the skill of peaceful scoring and was reflected on the change in the result of the technical performance, by giving the learner a clear picture of the technical performance of the motor skill during the theoretical part during the exercises for the skills under study and thus helped the learners to acquire Distinguished motor performance, as well as creating the educational environment in an effective manner and its reliance on practice and spreading the feature of repetition within the educational unit has its distinctive effect on building movement. In the behavior of the individual and in fact a constant change in the processes that allow the individual to perform a certain action in the future L." (28:6)

It is clear from Table (6) that there are significant statistically significant differences after comparing the calculated (T) value with the tabular value and in favor of the experimental group that used the educational curriculum prepared by the researcher, and who used the (random variable) exercise. The researcher believes that the reasons for the development are due to the effectiveness of the random variable method, which contributed to maintaining the correct kinesthetic awareness through the exchange of attempts to practice a specific skill and a large number of variables according to the random variable method, followed by a second skill and returning to the first and so on.

That is, the practice of the variable random exercise presents the educational tasks at random to the learner so that (the exercise on the motor skills or duties is overlapping and the learner can rotate between these skills with the results without practicing the same skill in two successive attempts). (45:7) and all of this worked to make the retention of the skill more distinct than the rest of the groups in the post-tests, and this is consistent with what (Yarub Khayun) indicated that when the learner trains and learns using the random exercise method, his performance during the learning period is less successful. 57:11).

From the learner who trains or learns using the sequential exercise method, but when the training continues after a period of time (retention period), the learner who trains and learns by using the random exercise method, his performance is more effective and shows more retention (15:1).

In order to explain the researcher's findings, we shed light on the details of Table (6). Through this table, it is clear that the control group used the preferred arm during the training units and for a period of 8 weeks, and that the experimental group did not use the preferred side during the training unit except in the last two weeks (the seventh And the eighth), but the results showed the superiority of the experimental group over the control group in the effectiveness of the performance of the preferred party, but if we return to how to build motor programs in the brain, we find that it goes through stages for the purpose of building the motor program (Yarob. 2002) [11]. The last stage in building the kinetic program is generalization, which means generalization is the use of the kinetic program in different and varied circumstances. But to increase the effectiveness and accuracy of the motor program, its use in the preferred arm may reach the plateau (Plato), and this plateau cannot be crossed using the party concerned with performance, but rather reaches the automatic mechanism in (performance) (416:13).

The mechanism in performance does not mean the highest levels of accuracy, but rather stability in performance. Therefore, training a new and neglected party on a motor program stored in the brain requires high and additional sensory capabilities in implementing this program, and that the use of a neglected party in implementing a motor program for a frequently used party will be in The beginning of the matter is implemented with difficulty and inaccurately, and this becomes clear when we want to write with the non-favorite arm. Therefore, the more training on the unfavorable part, the more pressure there is in the mental processes, and this calls for more efforts for the purpose of implementation and accuracy of response. (312:12).

This (second) hypothesis developed by the researcher, which relied on the principle of developing kinetic programs, may open new horizons for our sports reality, but this may be used in advanced countries in the field of sports.

5. Conclusions and recommendations

5.1 Conclusions

In light of the results reached by the researcher, the following was concluded:

1. There is an effect of the educational curriculum of the (random) educational exercises used by the research sample (the experimental group) for the non-preferred arm in developing the high thrust and the accuracy of peaceful scoring with the non-preferred arm
2. Training the non-preferred arm (neglected) increases the effectiveness of the motor performance of the skill and increases its accuracy, which positively affects the results of the preferred arm.
3. There is a preference for the exercises used with the non-preferred arm (neglected) in developing the high drum and the accuracy of peaceful scoring in the research sample (the experimental group) compared to (the control group).

5.2 Recommendations

In light of the conclusions reached by the researcher, he

recommends the following:

1. Investing the non-preferred party (the neglected) in training a skill and focusing on it in order to increase the effectiveness of the preferred party.
2. When the player's favorite party is injured, training on the non-favorite party can be used to maintain the accuracy of skills and invest time in returning to the stadiums in the least possible time while maintaining the level of the player's performance.
3. It is necessary to conduct similar research that includes other age stages and different sports to determine the extent to which this hypothesis can be generalized.
4. To improve the accuracy of the high chuck and the accuracy of peaceful scoring, it is necessary to allocate time to the process of the chock and both arms with the training focus on the non-preferred arm.

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