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The reciprocal style and its impact on the development of some physical and motor abilities and the accuracy of correction of the Karbaji stability and movement of the team of the Department of Education Hit handball

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Abstract: *The importance of the study lies in preparing an educational curriculum according to the reciprocal method for some physical, motor, and skill-related abilities and identifying the impact of the reciprocal method on developing some physical, motor, and skill-related abilities. The researchers used the experimental method due to its suitability and the nature of the problem. The research sample comprised 14 students from the Hit Education Directorate's middle school team, divided into control and experimental groups. Appropriate statistical methods were used to process the data. Based on the results obtained, the researchers concluded that the reciprocal method outperformed the direct method in the learning process regarding the research variables. One of the main recommendations is the necessity of using the reciprocal method in the skill-learning process.*

Keywords: *Reciprocal Learning, Skill Development, Experimental Method, Educational Curriculum*

1. INTRODUCTION

The basic topic in learning depends on the ability, readiness and time needed by the learner, as the learner is the main pillar of the educational process through the development of his abilities and capabilities, which is the main goal of this process, which requires comprehensive and careful attention in providing various educational situations that serve the learning process and provide an opportunity to achieve optimal performance of sports skills in general and handball skills in particular that reflect the learner's ability to understand the parts of the skill and movement and its components, The use of an educational method and its employment in the educational process serves the need of the learner or student and seeks to correlate between educational situations and the characteristics(Mosleh et al., 2018; Omar et al., 2018), needs and capabilities of each learner through continuous developments in the educational process for its importance in expressing the perception of students or learners and works to reduce the time and effort that accompanies the educational process at the present time, so it has become necessary to take it to apply the educational curriculum.

Through the experience of the field researchers, while watching some of the exercises for the team of the Department of Education Hit handball, they noticed a weakness in the performance of the skill of correction Alkarbaji of stability and movement, and this does not correspond to the level required for this stage as a result of the use of the method followed

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by the teacher who is not commensurate with the skills used, so the researchers decided to use a method of teaching methods, which is the reciprocal method of the implementation of educational units to develop the skill of correction Alkarbaji of stability and movement to reach the desired goal.

Research Objectives:

a. Identify the impact of the reciprocal method in developing some physical and motor abilities and learn the skill of correction of stability and movement handball.
b. Preparing an educational curriculum according to the reciprocal method.

Hypothetical research:

a. There are statistically significant differences between the pre-and post-tests of the control and experimental groups in terms of physical and motor abilities and the skill of correction Alkarbaji of stability and movement.
b. There are statistically significant differences between the post-tests of the control and experimental groups in terms of physical and motor abilities and the skill of correction Alkarbaji of stability and movement.

2. MATERIAL Y METHODS

Research Methodology:

The researchers used the experimental method because it fits with the nature and problem of the research, and by designing the method of the experimental and control groups with pre-and post-tests(Ali et al., 2022; Sabbar et al., 2023).

Research population and sample:

The research population was determined by the players of the school teams for the intermediate stage of the schools of the Hit Education Department, which numbered (88) students distributed over eight schools for the academic year (2023), while the research sample was deliberately selected for the team of the Hit Education Department, which numbered (14) students, divided into two control and experimental groups, each group (7) students, and thus the percentage is (15.90).

Devices, tools, and means used in research(AL-Azawi et al., 2022)**:**

a. Devices
b. Personal computer type (DELL).
c. Personal Calculator Type (CASIO).
d. Electronic clock.
e. Instruments

f. Handball court.
g. Handballs (10).
h. Whistle.
i. Data registration and discharge form.
j. Tape measure.
k. Adhesive tape.
l. Means of collecting information
m. Arab and foreign sources and references.
n. Auxiliary team.

Field Research Procedures:

Skill tests:

First: Al-Karbaji correction from stability (Yasser, 2015)

Purpose of the test: Measure the accuracy of correcting the carbage of stability.

Used tools: (10) handballs, handball goal drawn on a wall measuring (3×2 m), then the goal is divided into nine rectangles to measure the accuracy of the shooting and draws a line on the ground away (9 m) from the goal.

Performance specifications: The tester stands behind the line of (9) m holding the ball and, when hearing the whistle, begins to aim at the squares specified on the wall and then picks up the rest of the balls from the ground and shoots and continues until he finishes the (10) balls.

Performance Conditions:

a. The need to stabilize one of the feet and contact with the ground
b. The laboratory aims within (3) seconds of the whistle
c. Pointing arm swinging back
d. Aim at selected boxes
e. Each laboratory performs (10) balls

How to register: The laboratory shoots from behind the line with a fulcrum step, taking into account the following:

a. Injury to rectangles (9,7,3,1), which represent the corners of the goal of dimensions (60×100 cm), gets (4) degrees.
b. Injury to rectangles (2,8) that represent the area above the goalkeeper's head and between his feet, which Its dimensions are (60×100 cm), and it obtains (3) degrees.
c. Injury to rectangles (4,6) representing the area of the goalkeeper's arms and whose dimensions (80×100 cm) obtains (2) degrees.

d. Injury to the rectangle (5) represents the area of the chest and torso of the goalkeeper, which reaches its dimensions (80×100 cm) obtains (1) degree.

e. If the ball comes out of the goal, the laboratory receives zero.

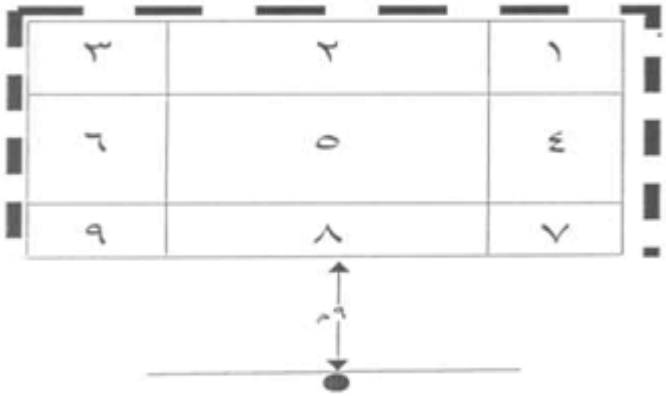

Figure 1. It shows the accuracy of the correction of the stability of carbage

Second: Al-Karbaji's correction from the movement (Nevine, 2012)

Test the accuracy of the correction of the carbage of movement.

Test name: Dribbling test in a straight line and then correcting the carbage of movement.

The test's purpose is to measure the speed of dribbling in a straight line and then aim at the karbaji of the movement.

Used tools: handball, handball goal, whistle, stopwatch.

Performance specifications: The tester stands in the middle of the field with a ball, and when hearing the start signal, the tester bounces the ball in a straight line in the direction of the goal and then shoots the karbaji from the movement near the free throw circle after taking the approaching steps.

Performance Conditions:

Each laboratory is given two attempts, and the best one is scored.

Do not drop the ball and re-bounce again.

The ball does not collide with the foot.

Do not run with the ball more than (3) steps.

The ball does not go out of the goal during shooting.

Swinging the arm, throwing backward.

Looking forward should be when bouncing the ball.

The movement of dribbling should be carried out with one hand and from the wrist of the hand, considering its looseness and flexibility.

Sign up:

The total time of the test is calculated from the start until the ball leaves the hand of the tester at the moment of shooting at the goal to the nearest (1/10) of the second.

(1 second) will be added in case any of the previous conditions are violated.

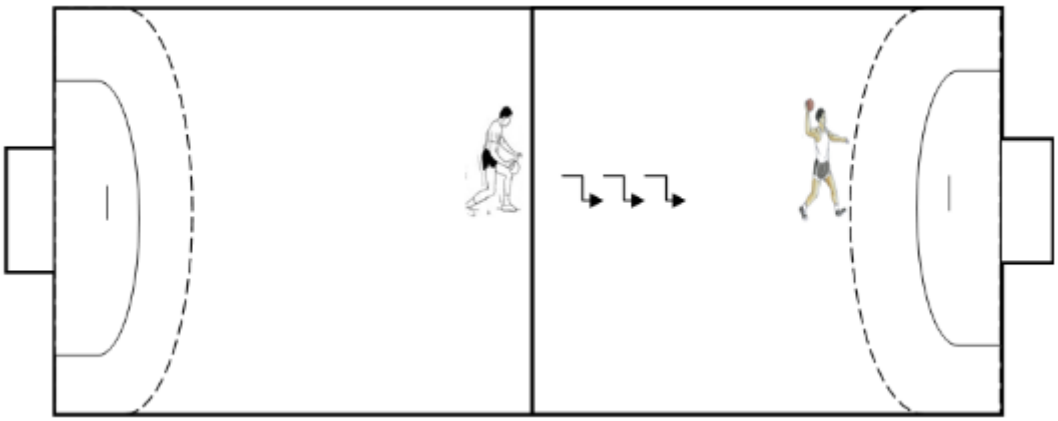

Figure 2. Shows the measurement of the accuracy of the correction of the Karbaji of stability

Physical aptitude tests:

First, the strength characteristic of the speed of the arms (Farhad, 2015)

Test name: Handball throwing test for the farthest distance.

a. Objective of the test: Measure the strength characteristic of the speed of the arm and shoulder.
b. Used tools: handball - handball court - tape measure.
c. How to perform: The tester stands behind the starting line and holds the ball with one of the hands, then throws the handball as far as possible and considers that the tester does not cross the starting line the moment the ball comes out of his hand. The ball is thrown toward the goal area and from stability.

Test Conditions:

The ball is thrown higher than the shoulder level and towards the goal area.

Each laboratory is given (3) consecutive attempts.

a. Scoring: The distance recorded by the tester is calculated in the best attempt to the nearest (quarter of a meter) from the starting line point to the point of landing the ball, and when using the measuring tape, it should be noted that the tape is perpendicular to the throwing line.

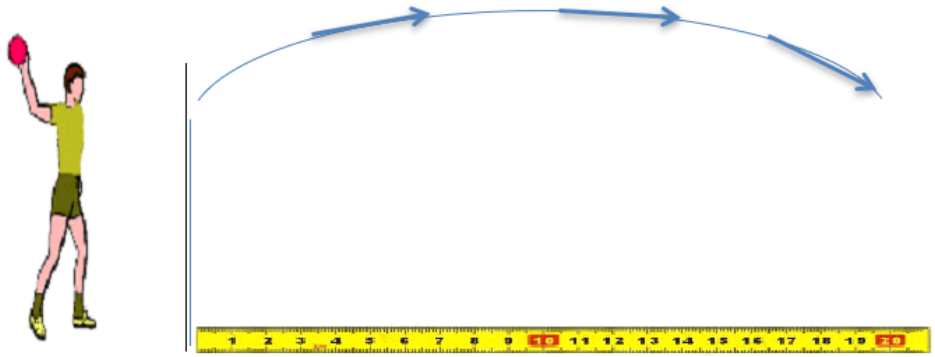

Figure 3. Demonstrates the test of throwing a handball to the farthest distance
Second: The power characteristic of the speed of the two men (Kamal & Mohamed, 2001)

Test Name: Wide jump test of stability.

The objective of the test is to measure the ability to jump wide for a distance of stability.

Tools used: tape measure.

Performance specifications: draws a line of elevation, the tester stands behind the line of elevation so that it touches the tips of the toes, the start mark, and the feet are slightly apart, swinging the arms back and forth and bending the knees and then spreading them to push the body as far as possible.

Performance Conditions:

Each laboratory has three attempts and counts the best.

Not to exceed the ascent line when jumping.

Registration: The distance bounced by the laboratory from the ascent line to the last footprint on the ground and to the nearest cm is calculated.

Figure 4. Wide jump test shows stability

Exploratory Experiment:

To find the best way to carry out the research procedures and obtain reliable results, the researchers conducted the exploratory experiment on Friday, 3/2/2023. On (4) students

from the original research community, where they were excluded from the research sample, and the purpose of conducting the exploratory experiment was as follows(Abdulrazzaq, n.d.):

a. The suitability of the tests with the level of the sample members.
b. Knowing the time it takes to perform tests and the main experiment.
c. Avoid the number of errors when implementing the main experiment and tests(Ali et al., 2024).

Main experience:

Pre-tests:

The pre-tests for the control and experimental groups were conducted on Saturday and Sunday, 4-5/2/2023, at the Hit Youth Forum Hall.

Preparation and implementation of the main experiment:

The main experiment was carried out on Tuesday, 6/2/2023 using the (reciprocal method), which contains a worksheet prepared in advance by the researchers, and this paper includes the technical performance of the skill and its common mistakes, and the technical performance and errors were presented in the form of pictures containing different colors inside, which makes the nature of the presentation for learners interesting that attracts their attention to it and increases interaction with it, as well as educational units also included "various exercises to develop physical and motor abilities, The teacher explains the skill to silver and practically and uses a number of students to display the skill and correct errors, if any, and then he distributes the students into two groups The control group uses the commanding method The experimental group uses the reciprocal method where the teacher himself teaches the control and experimental groups and each group according to its style, where the reciprocal method includes the distribution of students in pairs represented by the performing student and the other the observer student, where the teacher plays the role of observation and communication with the observer student because the observer student is the one who provides Information for the performing student and correcting errors, if any, and the number of educational units (16) educational units by (3) units per week duration of each educational unit (90) minutes. The experiment was completed on Thursday (14/3/2023).

Post-tests:

The researchers conducted the post-tests for the research sample after completing the period scheduled for the experiment on Friday and Saturday, corresponding to 15-16/3/2023.

Statistical methods used:

The researchers used the statistical bag (SPSS) in analyzing the results of the research, including.

a. Arithmetic mean.
b. Standard deviation.
c. Test (t) for correlated samples(Saeed, Khalaf, et al., 2024).
d. Test (t) for independent samples(Saeed, Sabti, et al., 2024).

3. RESULTS

Presentation of the results of the pre-and post-tests of the control group:

Table 1. The arithmetic mean, standard deviation, and value (T) between the averages of the pre-and post-measurements of the control group for the tests for the research (under research)

	Unit of measurement	**Pre-test**		**Post-Test**		**Value (v)**	**The difference between the two averages**	**Standard deviation of difference**	**Impact size**
		M	**SD**	**M**	**SD**				
The skill of correction of the carbage of stability	degree	12.4286	2.07020	17.8571	2.91139	0.728	5.4286	1.39728	0.083
The skill of shooting the carbage of movement	second	3.8386	0.11006	3.6914	0.07581	4.753	0.1471	0.11206	0.912
Speed power of the arms		28.2014	3.36845	29.1043	3.34427	6.769	0.9029	0.49795	0.201
The power characteristic of the speed of the legs		171.0000	2.82843	172.8571	3.80476	5.984	1.8571	1.86445	0.220

Tabular value (T) (3,707) at the degree of freedom (7-1=6) and significance level (0.01)

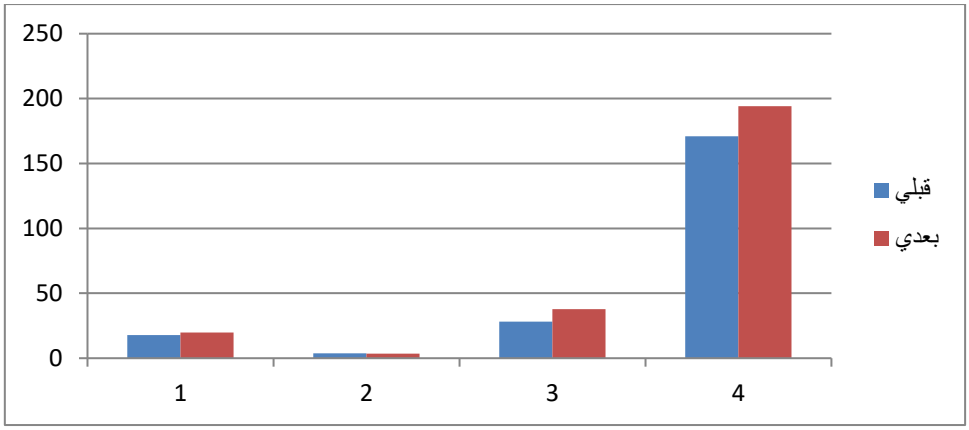

Figure 5. Shows the values of the arithmetic media of the pre-and post-tests of the control group.

Presentation of the results of the pre-and post-tests of the experimental group:

Table 2. The arithmetic mean, standard deviation, and value of (T) between the averages of the pre-and post-measurements of the experimental group of tests for research (under research)

	Unit of measurement	Pre-test		Post-Test		Value (v)	The difference between the two averages	Standard deviation of difference	Impact size
		M	SD	M	SD				
The skill of correction of the carbage of stability	degree	14.000	2.70801	19.8571	2.73426	0.728	5.8571-	0.69007	0.083
The skill of shooting the carbage of movement	second	3.4257	0.24589	3.0143	.18420	4.753	0.4114	0.09529	0.921
Speed power of the arms	م	37.7929	4.88817	41.4286	4.67189	6.769	3.6357	0.94497	0.201
The power characteristic of the speed of the legs	م	194.1429	11.06690	205.4286	9.30694	5.984	-11.2857-	3.72891	0.220

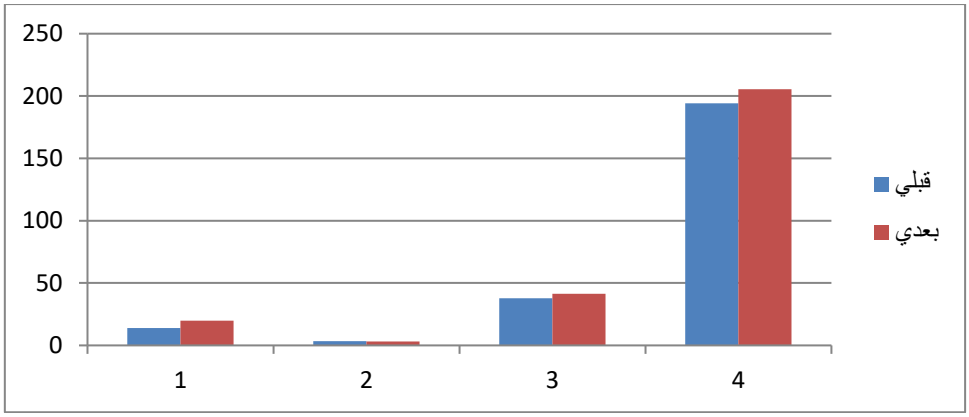

Figure 6. Shows the values of the arithmetic media of the pre-and post-tests of the experimental group

Presentation of the results of the post-tests for the control and experimental groups

Table 3. The arithmetic mean, standard deviation, and value of (T) between the averages of the two-dimensional measurements of the control and experimental group for the tests for the research

	Unit of measurement	**Control group**		**Experimental Group**		**Value (v)**	**Error level**	**Significance**
		M	**SD**	**M**	**SD**			
The skill of correction of the carbage of stability	degree	17.8571	2.91139	19.8571	2.73426	1.325	0.005	Moral
The skill of shooting the carbage of movement	second	3.8386	0.11006	3.4257	0.24589	4.055	0.005	Moral
Speed power of the arms		28.2014	3.36845	37.7929	4.88817	4.275	0.005	Moral
The power characteristic of the speed of the legs		17.0000	2.82843	194.1429	11.06690	5.3-60	0.005	Moral

Tabular value (T) (3,055) and significance level (0.01) at the degree of freedom (14-2=12)

4. DISCUSSION

Discuss the results of pre-, post, and post-tests for the control and experimental groups:

Through what has been presented, Table (1) shows that the calculated values of (t) are greater than the value of (t) tabular, and this indicates the existence of statistically significant differences in favor of the post-test of the control group. Researchers attribute the reason for these differences to the method followed by the teacher in the implementation of the physical education lesson, as well as to the rush, commitment, and desire by students towards learning and mastering the skill. "The success of learners depends on continuous learning, and the learners' mastery of basic skills requires learning for long hours." As well

as their regularity, the application of educational units, and the explanation and interesting pictures they contain for students. (Abdel & Mohamed, 1999)

Table (2) (3) shows that the value of (t) calculated for the experimental group was greater than the value of (t) tabular variables of the research (correction of the Karbaji of stability, correction of the Karbaji of movement, force characteristic of speed of the arms, force characteristic of speed of the legs) and researchers attribute the reason for these differences to the effectiveness of the reciprocal method, which included the worksheet that was prepared by the researchers, where the success of this method depends on the clarity of this paper and its safety, as it is an important factor. It contains clear and interesting educational units that are easy to understand, as well as contains an explanation and description of the performance, the number of repetitions, and the distances of each exercise, as well as an accurate description of the work and its fragmentation into interconnected and sequential parts and verbal behavior used when feedback to address the most common mistakes of the skill in addition to that there are illustrative pictures of the technical stages of the skills and common mistakes for them. "The availability of skill information will develop more learnability for motor skills than those who did not have extensive information before training." (Wajih, 2001)

In addition, the information provided by the teacher was highly effective, which reflected positively on the level of learners. Rashid Abdelaziz (2006) asserts that "practice alone is not enough to learn, but must be supported by feedback." (Rashid & Khalid, 2006).

In addition, the educational units prepared by the researchers were concerned with the number of repetitions and gradation in the dimensions of the distances for exercises and the use of medical balls during the educational units, which contributed significantly to the development of the physical aspect of the learners. "Training and repetition improve both physical qualities and skill performance. (Mohamed, 1981; Razzaq et al., n.d.)

5. CONCLUSION

Based on the results of the research reached within the limits of the research community, the following conclusions can be reached:

a. The reciprocal method has a positive impact on the learning process and the acquisition of the skill of correction of stability and movement, as well as the development of the strength characteristic of speed for the arms and legs.

b. 2- The commanding style and the reciprocal style have a positive impact on the process of learning skills and developing the strength characteristic of speed for the arms of the two men.

c. 3 - proved the reciprocal style superiority of the style of command in the learning process.

Recommendations: In light of the conclusions reached by the researcher, the researcher recommends:

a. The need to use the reciprocal method in learning skills.

b. Conducting similar studies on different sports skills and events.

Conflict of Interest:

The authors declare that there are no conflicts of interest.

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