The excellence Journal in Sciences Techniques Of Physical Activity And Sports
Volume: -10 N° 02 -2025 P: 84 -104
ISSN: 2507-7201 EISSN: 2602-6899 NDL: 787-2016
ASJP: https://www.asjp.cerist.dz/en/PresentationRevue/208

The effect of educational program using two methods problem solving and reciprocal on improving some basic skills (passing, dribbling, shooting) in basketball for secondary school students (15-16 years old)

Fortas Youcef*[1], Bounaas Haroun[2], Benali Zohir[3]

[1] Mohamed Lamine Debaghine University - Setif2, y.fortas@univ-setif2.dz

[2] University - Setif2, bounaasharoun.43@gmail.com

[3] University - Setif2, zouhirbenz77@gmail.com

Received: 29/06 /2025 ***Accepted***: 28/11 /2025 ***Published***: 30/11 /2025

Abstract:

The study aimed to know the effect of using a proposed educational program using the problem-solving and reciprocal methods in improving some basic skills (passing, dribbling, shooting) in basketball for secondary school students (15-16 years old). The researchers used the experimental method with an equal groups design, and the sample was selected by a simple random method, divided into two equal groups consisting of 20 students, the first group studies using the problem-solving method and the second studies using the reciprocal method. The study concluded that the problem-solving and reciprocal methods have a positive impact on improving some basic skills in basketball for secondary school students.

Keywords: Teaching methods; problem-solving method; reciprocal method; basic basketball skills.

ملخص:

هدفت الدراسة إلى معرفة أثر استخدام برنامج تعليمي مقترح بأسلوبي حل المشكلات والتبادلي في تحسين بعض المهارات الأساسية (تمرير، تنطيط، تصويب) في كرة السلة لدى تلاميذ التعليم الثانوي (15–16سنة)، حيث استخدم الباحثون المنهج التجريبي ذو تصميم المجموعات المتكافئة، وتم اختيار العينة بطريقة عشوائية بسيطة، تم تقسيمها إلى مجموعتين متساويتين تتكون من 20 تلميذ، المجموعة الأولى تدرس بأسلوب حل المشكلات والثانية تدرس بالأسلوب التبادلي. وقد توصلت الدراسة إلى أن لأسلوبي حل المشكلات والتبادلي تأثير إيجابي في تحسين بعض المهارات الأساسية في كرة السلة لدى تلاميذ التعليم الثانوي.

الكلمات المفتاحية: أساليب التدريس، أسلوب حل المشكلات، الأسلوب التبادلي، المهارات الأساسية في كرة السلة.

1-Introduction:

* *Corresponding author.*

The reality of modern teaching requires us to use active and effective methods that rely on the principle of participation in finding solutions to learning situations and addressing the problems presented through continuous interaction and constant exchange between teacher and learner, making them partners in the educational process. The teacher employs their scientific knowledge, practical skills, and unique methods, playing the role of a critical guide and mentor. The learner is a central focus of the process through participation, practice, and creativity, guided by the teacher to achieve self-realization of knowledge. Teaching plays a fundamental role in the educational process in the field of physical education and sports. It is a set of theories and facts applied to transform skills into experiences through learning and practice to achieve established goals (Al-Khalaf and Dhiabat, 2013, p. 155). Many diverse teaching methods and approaches have been used in teaching physical education and sports and in conveying relevant information and expertise. Mosca Mosten emphasized that there is no ideal teaching method, and that the teaching method depends entirely on the educational situation and environment (Hamad, 2000, p. 68), considering that the issue is related to the teacher and the extent of their interest in the desired results. Despite the multiplicity and diversity of teaching methods, ranging from direct to indirect methods for learning basic skills and movements, they vary from one teacher to another and from one educational situation to another, depending on the educational environment and need. Among these methods used in teaching physical education and sports under the competency approach are the problem-solving method (divergent thinking method) and the reciprocal method (peer-guided learning method). The problem-solving method is defined as the method through which the teacher poses a set of vague questions and challenges that enable students to move freely by reviewing the efficiency of movement and its components (Al-Mufti, 2000, p. 54). The essence of this method is the special relationship between the teacher and the learner. The teacher poses a set of questions that represent stimuli, and the learner answers them, providing an explanation or solution through interaction and response to the proposed situations. This develops the student's ability to diversify, which in turn leads to the discovery of multiple alternatives that can be expressed through movement. The reciprocal method is characterized by student-to-student interaction and gives the

learner a key role in the learning process. This allows them to make many decisions related to assessment, correcting mistakes made by their peers, and providing them with direct feedback during the implementation of the performance with the aim of achieving the desired goals of the educational process. The teacher divides the learners into paired learning groups, with one student serving as a performer and the other as an observer, who serves as a guide, providing their peer with instructions and explanations previously prepared and explained by the teacher. The learners then correct mistakes. After completion, the learners switch roles. (Al-Mufti, 2000, p. 44). This method is distinguished by the fact that it gives learners a leadership role and opens the way for them to be creative and interact socially within the class, especially in the intermediate and secondary education stages, which have special advantages in forming and preparing the learner properly. The latter stage is considered an important stage in the life of the adolescent learner, as the latter is experiencing a sensitive and decisive stage, which is considered one of the most sensitive stages of development due to the problems and psychological pressures that the learner suffers in his life. Based on the above, the researcher poses the general question that represents the text of the problem from which this study begins:

Does the use of problem-solving and reciprocal methods have an impact on improving some basic skills (passing, dribbling, shooting) in basketball among secondary school students (15-16 years old)?

Based on the general question, we pose the following partial questions:

- Are there statistically significant differences between the pre- and post-tests in improving some basic skills (passing, dribbling, shooting) in basketball using the problem-solving approach, in favor of the post-test?

- Are there statistically significant differences between the pre- and post-tests in improving some basic skills (passing, dribbling, shooting) in basketball using the reciprocal approach, in favor of the post-test?

- Are there statistically significant differences between the post-tests of the two experimental groups in improving some basic skills (passing, dribbling, shooting) in basketball?

2- Study hypotheses:

Based on the general question and the partial questions, the hypotheses were formulated as follows:

2-1- General hypothesis: Using the problem-solving and reciprocal approaches has an impact on improving some basic skills (passing, dribbling, shooting) in basketball among secondary school students (15-16 years old).

2-2- Partial hypotheses:

- There are statistically significant differences between the pre- and post-tests in improving some basic skills (passing, dribbling, shooting) in basketball using the problem-solving approach, in favor of the post-test.
- There are statistically significant differences between the pre- and post-tests in improving some basic skills (passing, dribbling, shooting) in basketball using the reciprocal approach, in favor of the post-test.
- There were statistically significant differences between the post-tests of the two experimental groups in improving some basic skills (passing, dribbling, shooting) in basketball.

3- Study objectives:

The objective of this study is to:

- Design an educational program in basketball using two teaching methods: the problem-solving method and the reciprocal method.
- Identify the difference between the pre- and post-tests in improving some basic skills (passing, dribbling, shooting) in basketball using the problem-solving method.
- Identify the difference between the pre- and post-tests in improving some basic skills (passing, dribbling, shooting) in basketball using the reciprocal method.
- Identify which of the two methods under study is better at improving some basic skills (passing, dribbling, shooting) in basketball.

4- Importance of the Study:

- Assisting physical education and sports teachers in overcoming the difficulties they face.
- Opening new horizons for students and researchers with a new study that will serve as a reference and starting point for conducting new studies in the field of learning using the reciprocal method and problem-solving approach.
- Researching the most effective and influential methods in teaching physical education and sports in light of the competency-based approach and new curricula.

- Enriching the university library and contributing to the dissemination of scientific information within the country regarding improving some basic basketball skills using different teaching methods.
- Moving away from traditional methods and toward the use of modern methods in teaching physical education.

5- Definition of terms:

5-1-Teaching methods: Technically, a teaching method is defined as "the teaching style preferred by a teacher." It can be defined as the way a teacher approaches the teaching method during the teaching process, or as the method a teacher uses to effectively employ teaching methods that distinguish them from other teachers who use the same method. Therefore, a teaching method is fundamentally linked to the teacher's personal characteristics. (Chiber et al., 2014, pp. 25-26)

5-2-Problem-solving approach (divergent thinking approach): Technically: "A method in which the learning process takes place by raising a problem that prompts the student to think, reflect, study, research, and work under the supervision of their teacher to arrive at a solution or some solutions." (Al-Zuwaini, 2015, p. 97)

5-3-Reciprocal approach (peer learning approach): "Jonce (1996) defined the reciprocal approach as: 'A method in which feedback is provided to learners among themselves, whereby one learner performs while the other provides feedback. Roles are then exchanged. The teacher's role is to plan the tasks to be completed. If intervention is necessary during instruction, the teacher should only interact with the observing peer." (Homs and Hablous, 2013, p. 117)

5-4-Basic basketball skills: are all the movement components with different duties that are performed within a legal framework, whether with or without the ball. The team members' proficiency in all basic skills is one of the most important factors leading to success and excellence. There are no skills that are more important than others, as players are in dire need of all the game's skills throughout matches, even though they may not use some skills because the circumstances of the match do not allow them to use them. (Ismail, 2003, p. 41)

6-Research Methodology and Field Procedures:

6-1-Study Methodology: The researcher used the experimental method with an equivalent group design, following pre- and post-measurements for each group, to suit the nature of the study.

6-2-Study Variables:

- Independent Variable: The proposed educational program, which relies on two teaching methods (problem solving and reciprocal).
- Dependent Variable: Some basic basketball skills (passing, dribbling, shooting).

6-3-Study Population and Sample:

6-3-1-Study Population: The original study population consists of first-year secondary school students (15-16 years old) studying at the Martyrs Boulesnan Bouzid and Sadik High Schools in Tajnant, Mila. The total number of students is 163, distributed across five educational classes, for the 2019-2020 academic year.

6-3-2-Study Sample: The study sample was selected by simple random drawing of lots, with (40) students divided into two equal groups, with (20) students per group. Students exempted from physical education and sports classes, those belonging to sports clubs outside the institution, and those suffering from obesity and poor motor control were excluded.

Table N°1: shows the distribution of sample members

Group	Instructional Method	Number of Sample Members	
		Males	Females
First Experiment	**Problem Solving**	10	10
Second Experiment	**Reciprocal**	10	10
Total Sample		40	

Table N°1 shows the distribution of sample members across the two experimental groups, with both genders participating in equal numbers 10 males, and 10 females in each group.

6-3-3-Sample Equivalence: In order to obtain an equitable sample, the researcher homogenized the sample members in terms of variables that could have an impact on the study results, including the following:

- Certain growth rates (weight, height, age).
- Performance level in the basic basketball skills (passing, dribbling, shooting) under study.

Table N°2: shows sample equivalence according to variables (weight, height, age).

Variables	Problem-solving group		Reciprocal group		t-value Calculated	significance level	type of statistical significance
	Mean	S.d	Mean	S.d			
Weight(kg)	58.90	12.22	58.70	12.17	-0.3982	0.87	Not significant
Height(cm)	160.95	8.37	161.90	7.51	-0.378	0.70	Not significant
Age (years)	15.40	0.50	15.47	0.51	-0.351	0.72	Not significant

From the table N°2 we can see sample equivalence according to growth rates (weight, height, age), as the arithmetic means were close for both experimental groups (problem-solving, reciprocal). The t-test values between the two measurements for the variables (weight, height, and age) were (-0.39, -0.37, and -0.35), respectively. The calculated significance values were (0.87, 0.70, and 0.72), which are greater than the significance level ($\alpha = 0.05$). This indicates that there are no statistically significant differences between the two measurements. From this, we conclude that the two experimental groups are equivalent in terms of growth rates.

6-4-Tests Used:

6-4-1-Test one: Passing Against the Wall Test

- **Purpose of the test:** To measure the speed and accuracy of passing and receiving.
- **Performance Specifications:** A rectangle measuring 129x9cm is drawn on the wall, with the bottom edge of the rectangle 89 cm above the ground. A mark is drawn 299 cm from the wall. The student stands on this mark, holding the ball and ready to perform. Upon hearing the start signal, the player passes the ball continuously towards the rectangle without letting it fall to the ground, to perform the greatest number of chest passes. If the ball falls to the ground, the player must pick it up and start from behind the starting line. The performance lasts 29 seconds, during which the number of correct passes is recorded. The student receives a point for each correct pass (Salem, 1981, p. 115).

6-4-2-Test Two: (Ahmed Amin's Dribbling and Change of Direction Test)

- **Purpose of the test:** To measure dribbling ability and dribbling.
- **Performance specifications:** Four chairs are placed on a line, with a 4 meters separation between each pair. The player stands with the ball behind the line 4 meters away from the first chair. The player begins dribbling between the chairs using a twisting motion for 20 seconds. When passing a chair, the ball must be on the side farthest from that chair. This requires changing the dribbling hand when passing a chair. The player receives a point for each chair he passes correctly. No point is awarded for a chair he passes while dribbling with the hand closest to the chair. (Al-Nimr and Saleh, 2000, p. 167)

6-4-3-Test Three: (Ahmed Amin Shooting Speed Test)

- **Purpose of the test:** To measure shooting speed and accuracy.
- **Performance Specifications:** The player stands with the ball anywhere near the basket, on either side of it. At the signal, he begins shooting the ball continuously, from the right side once and from the left side again, for a period of 30 seconds. Two points are awarded to the player for each shot. The shot is disallowed if the player commits any foul or legal violation. (Al-Nimr and Saleh, 2000, p. 177)

6-5-Exploratory Study: The exploratory study is one of the most important research procedures undertaken by a researcher. In this regard, Al-Abadi (2015) believes that an exploratory experiment is a miniature version of the main experiment. Its purpose is either to uncover some scientific facts, to test the work to identify obstacles and drawbacks facing the implementation of the main experiment, or to train some support staff on the work. The purpose of this experiment is as follows:

- To establish the scientific foundations for the tests and measurements used (validity, reliability, and objectivity).
- To identify the appropriate tools and devices for conducting these tests.
- To identify the appropriate time and place for conducting them.
- To familiarize the support staff with how to administer these tests.
- To identify the difficulties and problems facing the researcher in implementing these tests before implementing them in the main experiment. (Al-Abadi, 2015, pp. 128-129)

A survey study was conducted on 07/11/2019 on a sample of first-year secondary school students (Martyrs Boussenane Bouzid and Al-Sadiq Secondary School - Ouled Khalouf Municipality - Tajnanat District - Mila Province), whose number was estimated at 15 students (8 males and 7 females), who are from the study community and outside the main study sample.

6-6-Scientific foundations for selected skill tests:

6-6-1-Reliability: To ensure the reliability of the tests, the researcher calculated reliability using the test-retest method. He administered the tests to the survey group on 07/11/2019, and re-administered them on 21/11/2019, with a two-week interval. The reliability coefficient values for the tests under study were shown in Table N°3.

Table N°3: Represents reliability by test-retest method

Tests	Test		Test-Retest		Correlation "R"	Reliability
	Mean	Standard Deviation	Mean	Standard Deviation		
Chest Pass	14.87	3.88	14.73	3.80	0.86	0.86
Dribbling	3.33	0.97	3.40	1.12	0.78	0.78
Shooting from Standing Position	2.73	1.33	3.60	2.64	0.73	0.73

From table N°3: It is clear that there is a strong correlation between conducting the test and retesting the three basic skills, as they are characterized by a high degree of stability.

6-6-2-Validity: "Test validity is that the test measures what it was designed to measure" (Khader, 2014, p. 215). To ensure the validity of the tests, the researcher calculated validity using two methods:

6-6-2-1-Discriminant validity: The validity of the tests was calculated using the two-tailed comparison method, also known as discriminant validity, which is essentially based on arranging the values in descending order, then taking (27□) from the highest and lowest ends, and then comparing them using the t-test after verifying the conditions for its application:

Table N°4: shows the results of discriminant validity

Skills	Non-Distinctive Class		Distinctive Class		t.test	Significance Level	Type of Statistical Significance
	Mean	Standard Deviation	Mean	Standard Deviation			
Chest Pass	6	1.225	13.60	1.14	10.15	0.00	Significant
Dribbling	1.00	1.00	4.60	0.54	7.06	0.00	Significant
Shooting from Standing Position	0.80	1.095	5.20	1.095	6.35	0.00	Significant

Table N°4 shows that the value of (t) is equal to (10.15, 7.06, 6.35), respectively, and the calculated significance values were (0.00), which is less than the significance level (0.05), and this indicates the presence of statistically significant differences between the averages of the distinguished and non-distinguished categories, and accordingly the skill tests have discriminatory validity.

6-6-2-2-Self-reliability: This type of validity is calculated by calculating the square root of the reliability coefficient calculated using the test-retest method. The following table illustrates the results obtained:

Table N°5: shows the results of self-reliability

Tests	Reliability Coefficient (test-retest)	self-reliability
Chest Pass	0.86	0.92
Dribbling	0.78	0.88
Shooting from Standing Position	0.73	0.85

Table N°5 shows that the values of the square root of the reliability coefficient (0.86, 0.78, 0.73) are equal to (0.92, 0.88, 0.85),

respectively indicating that the tests enjoy a high degree of self-reliability.

6-6-3-Objectivity: In this study, the researcher ensured that the tests used were objective, free from bias, clear to the sample members, and standardized in terms of instructions, conditions, and results recording.

6-7- Study Limits:

6-7-1- Spatial Limits: The study was conducted at the basketball court of the Martyrs Boulesnan Bouzid and El Sadek High Schools, Ouled Khalouf Municipality, Tadjenanet District, Mila Province.

6-7-2- Temporal Limits: The study was conducted between January 2020 and April 2020.

6-7-3- Human Limits: The study consisted of first-year high school students (15-16 years old).

6-8- Proposed Educational Program: The researcher implemented the proposed program on the two experimental groups during regular classes during the period from 12/01/2020, to 05/04/2020. One class per week was taught for each teaching method, with each class lasting one hour (60 minutes), the time allocated for teaching group activities in physical education and sports.

- The proposed educational program contains 24 educational units, 12 for the problem-solving method and 12 for the reciprocal method.
- The program includes some basketball skills, including the chest pass skill, from a stationary position and from a moving position, and ball dribbling skill, from a stationary position and from a moving position, and One-handed shooting skill.

6-9-Statistical Processing: To process and statistically classify the obtained data for interpretation and utilization, we used a set of statistical methods, relying on the Statistical Package for the Social Sciences (SPSS 25) to verify the study's hypotheses and achieve its objectives.

7-Presentation and discussion of the study results:

7-1- Presentation and analysis of the results of the hypotheses:

7-1-1- Presentation and analysis of the results of the first partial hypothesis: The hypothesis states that: "There are statistically significant differences between the pre- and post-measurement in improving some basic skills (passing, dribbling, shooting) in

basketball using the problem-solving method, in favor of the post-measurement"

Table N°6: shows the statistical results for the first experimental sample.

Skills	Pre-test		Post-test		t.test	Significance Level	Type of Statistical Significance
	Mean	Standard Deviation	Mean	Standard Deviation			
Chest Pass	10.75	3.09	16.95	1.39	8.17	0.00	Significant
Dribbling	1.14	2.05	6.40	1.23	11.56	0.00	Significant
Shooting from Standing Position	2.50	3.50	7.10	2.19	15.38	0.00	Significant

From table N°6 it is clear to us that the value of the (t) test between the pre- and post-measurements of the first experimental group for basic skills (passing, dribbling, shooting) is equal to (8.17, 11.56, 15.38) respectively, and the calculated significance values reached (0.00), which is less than the significance level (α = 0.05), which indicates that there are statistically significant differences between the pre- and post-measurement of the first experimental sample using the problem-solving method in basic skills, in favor of the post-measurement.

Table N°7: shows the statistical treatments for the effectiveness of the educational program for the first experimental sample.

Skills	Effect Size d_{Cohen}	Effect size Es	Eta squared (n^2)
Chest Pass	2.58	2.08	0.75
Dribbling	3.11	3.49	0.62
Shooting from Standing Position	1.57	3.04	0.63

7-1-2- Presentation and analysis of the results of the second partial hypothesis: The hypothesis states that: "There are statistically significant differences between the pre- and post-measurement in improving some basic skills (passing, dribbling, shooting) in basketball using the reciprocal method, in favor of the post-measurement"

Table N°8: shows the statistical results for the second experimental sample.

Skills	Pre-test		Post-test		t.test	Significance Level	Type of Statistical Significance
	Mean	Standard Deviation	Mean	Standard Deviation			
Chest Pass	6.70	2.55	15.25	2.12	50.11	0.00	Significant
Dribbling	0.85	0.93	4.15	1.84	7.14	0.00	Significant
Shooting from Standing Position	3.40	2.06	3.50	2.03	0.15	0.87	Not Significant

From table N°8 it is clear to us that the value of the (t) test between the pre- and post-measurements of the second experimental group for the basic skills (passing, dribbling) is equal to (50.11, 7.14), respectively, and the calculated significance values reached (0.00, 0.00), which is less than the significance level ($\alpha = 0.05$), which indicates that there are statistically significant differences between the pre- and post-measurement of the second experimental sample using the reciprocal method in the basic skills (passing, dribbling) in favor of the post-measurement. While the value of the (t) test in the shooting skill was equal to (0.15), and the calculated significance value was (0.87), which is greater than the significance level ($\alpha = 0.05$), it can be said that there are no statistically significant differences between the pre-measurement and post-measurement of the second experimental sample in the shooting skill using the reciprocal method.

Table N°9: shows the statistical treatments for the effectiveness of the educational program for the second experimental sample.

Skills	Effect Size d_{Cohen}	Effect size Es	Eta squared (n^2)
Chest Pass	3.64	3.27	0.92
Dribbling	2.26	1.08	0.65
Shooting from Standing Position	0.049	0.02	0.026

7-1-3- Presentation and analysis of the results of the third partial hypothesis: The third hypothesis states that: "There are statistically significant differences between the two post-measurements of the two experimental groups in improving some basic skills (passing, dribbling, and shooting) in basketball."

Table N°10: shows the statistical results of the two post-measurements of the two experimental groups

Skills	Post-test of the first experimental sample		Post-test of the second experimental sample		t.test	Significance Level	Type of Statistical Significance
	Mean	Standard Deviation	Mean	Standard Deviation			
Chest Pass	16.95	1.39	15.25	2.12	2.99	0.51	Not Significant
Dribbling	6.40	1.23	4.15	1.84	4.54	0.00	Significant
Shooting from Standing Position	7.10	2.19	3.50	2.03	8.42	0.00	Significant

From table N°10, it is clear that the t-test value between the two post-measurements of the two experimental groups in the skills was as follows:

- The t-test value for the passing skill was 2.99, and the calculated significance value was 0.51, which is greater than the significance level (α=0.05). This indicates that there are no statistically significant

differences between the two post-measurements of the two experimental groups in this skill.

- The t-test value for the dribbling skill was 4.54, and the calculated significance value was 0.00, which is less than the significance level (α=0.05). This indicates that there are statistically significant differences between the two post-measurements of the two experimental groups in this skill, in favor of the first group, which used the problem-solving method.
- The t-test value for shooting skill was 8.42, and the calculated significance value was 0.00, which is less than the significance level (α=0.05). This indicates that there are statistically significant differences between the two post-measurements of the two experimental groups in this skill, in favor of the first group, which used the problem-solving method.

7-2-Interpretation and Discussion of Hypotheses:

7-2-1-Interpretation and Discussion of the first partial hypothesis:

Which states: "There are statistically significant differences between the pre- and post-tests in improving some basic skills (passing, dribbling, shooting) in basketball using the problem-solving approach, in favor of the post-test." After reviewing the results of the first sub-hypothesis through table N°6, it was proven that there were statistically significant differences between the pre-tests and post-tests, in favor of the post-test. Supporting the results are the effect size table N°7, which, taken together, indicate a significant impact of the program. This indicates the high effectiveness of the proposed educational program in improving some basic basketball skills using the problem-solving approach. The researchers attributes the improvement in the results of the students in the first experimental group to the program based on learning through the problem-solving approach. which is characterized by giving students great freedom to present their ideas, solutions, and perceptions of the educational situations proposed in the educational program. Rashid Mohammed Rashid also pointed out in this regard that problem-solving skills are characterized as a skill that enables the learner to play a new role, one in which they are active and organized in their experiences and learning topics. Therefore, several justifications can be cited that highlight the importance of problem-solving training as a learning method (Rashid, 2009, p. 91). Dr. Alaa El-Din Ibrahim Saleh also stated in this regard that the field of physical education and sports is

rich in opportunities for discovery and innovation. There are always possible movements and more beautiful ones, or other ways to pass the ball, or other playing strategies, or other formations that engage the learner in exploratory production. (Saleh, 2009, p. 199)

The results of this study are consistent with the results of Yahyaoui and Al-Nahwi (2015), which concluded that there were statistically significant differences between the experimental sample taught using the problem-solving method and the control sample in terms of ability motivation, indicating the effectiveness of the problem-solving method in teaching. It also agreed with the results of the study of Al-Dawoud and Al-Waisi (2016), which concluded that the use of the problem-solving method in learning some basic skills in football (passing, running with the ball, heading the ball, shooting with the foot) was effective for students of the Faculty of Physical Education at Yarmouk University.

7-2-2- Interpretation and discussion of the second partial hypothesis:

Which states: "There are statistically significant differences between the pre- and post-tests in improving some basic skills (passing, dribbling, shooting) in basketball using the reciprocal method, in favor of the post-test".

After reviewing the results of the second partial hypothesis through table N°8, it was proven that there were statistically significant differences between the pre-tests and post-tests, in favor of the post-tests. Supporting the results are the effect size table N°9, which, taken together, indicate a significant impact of the program. This indicates the high effectiveness of the proposed educational program in improving some basic basketball skills using the reciprocal method. The researchers attribute the improvement in the results of the students in the second experimental group to the program based on reciprocal learning. One of its advantages is that students interact with one another. It also gives the learner a key role in the learning process, empowering them to make many decisions related to assessment, correcting mistakes made by their peers, and providing them with direct feedback. The teacher also plays a role by providing feedback, guidance, and assessment, which increases students' motivation and desire to learn using the reciprocal teaching method. (Al-Khalaf and Dhiabat, 2013, p. 165)

Abdul Aziz and Al-Saber also mentioned in this regard that this method typically helps students improve their technical performance, especially in the early stages of skill learning. The best feature of this method is the widespread spirit of cooperation among students, which is equivalent to providing a teacher for each student. (Abdul Aziz and Al-Saber, 2004, p. 35)

Abdul Rahman Maher Al-Shanti also stated in this regard that this method is applied to many sports and movements, such as basketball skills and various gymnastic movements, which require assistance. This method is considered to be equivalent to providing a teacher for each student. (Al-Shanti, 2016, p. 24)

The researchers also believe that there are a number of obstacles that make it difficult to implement this method in learning. These obstacles are considered among its negative aspects, including students' inability to adapt to the standardized card and the difficulty of implementing the learning situations imposed by some students due to individual differences. This is evident in the lack of differences between the pre- and post-tests in shooting skills. In this regard, Al-Khalaf and Dhiabat stated that a drawback of this method is that it is sometimes difficult to control the implementation of the required objectives represented by the homework sheet. This leads to unnecessary discussions among students about the requirements, which is reflected in the burden on the reality and on the teacher to resolve problems related to the implementation of the required homework by the students. (Al-Khalaf and Dhiabat, 2013, p. 157)

The results of this study are consistent with the study by Khaled Nabil Khadir (2001), which concluded that the peer-guided application method has a more positive impact than the self-application method and the traditional method in developing some of the physical and skill attributes under study.

They are also consistent with the results of the study by Ben Sassi Radwan (2017), which concluded that there is an improvement in learning some basic handball skills using the reciprocal and guided discovery methods. There are statistically significant differences between the reciprocal and guided discovery methods in favor of the reciprocal method.

7-2-3-Interpretation and discussion of the third partial hypothesis:

Which states: "There are statistically significant differences between the two post-measurements of the two experimental groups in improving some basic skills (passing, dribbling, shooting) in basketball".

After reviewing the results of the third partial hypothesis through table N°10, it was proven that there were no statistically significant differences between the two post-measurements of the two experimental groups in improving the skills (passing, dribbling). Regarding the skill (shooting), the results indicated the presence of statistically significant differences in favor of the first experimental sample using the problem-solving method. The researchers attributes the absence of differences between the two experimental groups to the effectiveness of both methods in improving the basic basketball skills under study. Despite the superiority recorded for the first group in the shooting skill, which used the problem-solving method, over the second group, which used the reciprocal method, the researchers attribute this to the uniqueness of the problem-solving method in stimulating the learner's mental processes, which leads to the development of thinking and creativity, through the student's search for alternatives to solve the problem they encounter in educational situations. The results of this study are consistent with the following studies:

The study by Al-Khalaf and Dhiabat (2013), aimed to investigate the impact of using the imperative and reciprocal teaching methods on teaching some basic table tennis skills to beginners, and to identify the most effective method in the educational process.

The study concluded that the use of both the imperative and reciprocal teaching methods had a positive impact on teaching beginners some basic table tennis skills, with a clear statistically significant advantage for the reciprocal method in teaching the basic skills of the game.

It also aligns with the study by Basharat Amr Muhammad Rafiq (2017), The results of the one-way analysis of variance showed statistically significant individual differences in the level of learning basic football skills among sixth-grade male students at Tamoun Basic School, based on the post-test for the experimental and control samples (implementation) on all skill tests, using teaching methods (peer-guided application, multi-level self-application)

8- Conclusion:

At the end of this study, which aims to identify the impact of using a proposed educational program using the problem-solving and reciprocal methods on improving some basic basketball skills (passing, dribbling, and shooting) among secondary school students (15-16 years old), it is clear that it is important to study direct and indirect teaching methods in physical education and sports. This is due to their importance in stimulating students' interest and inclinations and motivating them to work positively and effectively in class. In this study, we concluded that the use of both methods has an effective impact on improving the aforementioned basic skills. We found clear statistically significant differences between the pre- and post-tests for the first experimental sample using the problem-solving method in improving passing, dribbling, and shooting skills. Meanwhile, the use of the reciprocal method revealed differences between the pre- and post-tests for the second experimental sample in passing and dribbling skills, but no differences were found in shooting skills. Ultimately, the researchers believe that both methods have a positive and effective impact on improving basic basketball skills. Both are considered the optimal link between teacher and learner, but the rate of improvement varies depending on the educational environment and the proposed learning situation.

9- References:

Books:

1-Al-Nimr, Abdul Aziz and Saleh, Madhat (2000). *Basketball*. 2nd ed. Professors of Sports Books. Cairo.

2-Al-Zuwaini, Ibtisam Sahib Musa. (2015). *Teaching Methods, Old and New*. 1st ed. Amman: Dar Al-Manhajiyya for Publishing and Distribution.

3- Hammad, Mufti Ibrahim. (2000). *Methods of Teaching Ball Games*, Egypt: Dar Al-Amir for Printing.

4- Homs, Mohsen Mohamed Darwish and Hablous, Abdel Latif Saad Salem .(2013). *Methods of Teaching Physical Education and Multiple Intelligences*, 1st ed., Alexandria: Dar Al-Wafa for the World of Printing and Publishing.

5-Ismail, Mohamed Abdel Rahim. (2003). *Basic and tactical skills in basketball*. 2nd ed. Alexandria: Publishing House Manshaat Al Maaref.

6-Khedr, Abdul Basit Metwally. (2014). *Scientific Research Tools and its Preparation Plan, 1st ed.*, Cairo: Dar Al-Kitab Al-Hadith.

7- Mukhtarn, Salem. (1981). *With Basketball*, Dar Al Maaref, Beirut.
8-Saleh, Alaa El-Din Ibrahim. (2009). *Teaching Methods in School Physical Education*. Egypt: Rashid Publishing and Distribution.
9-Shabr, Khalil Ibrahim, Jamil, Abdul Rahman and Abu Zaid, Abdul Baqi. (2014). *Fundamentals of Teaching*. 1st ed. Amman: Dar Al Manahj for Publishing and Distribution.

Magazines, and theses:

10- Al-Mufti,Widad. (2000). *The effect of using teaching methods on learning some offensive skills in basketball and investing academic learning time*, College of Physical Education, University of Baghdad.
11-Al-Dawoud, Rateb Muhammad Ali, and Al-Waisi, Nizar Muhammad Khair Faleh. (2016). *The Effect of Using Problem-Solving Methods on Learning Some Basic Football Skills for Students of the Faculty of Physical Education at Yarmouk University*. Studies: Educational Sciences, Vol. 43(4), pp. 1733-1745.
12-Al-Shanti, Ali Maher Abdel Rahman. (2016). *The effect of using the reciprocal method and the self-application method in developing the sensorimotor perception of some basketball skills among students of the Faculty of Physical Education at An-Najah National University, Palestine*. Master's thesis - Faculty of Graduate Studies - An-Najah National University - Palestine.
13-Al-Khalaf, Muin Muhammad and Dhiabat, Muhammad Khalaf. (2013). *The effect of using imperative and reciprocal teaching methods in teaching some basic table tennis skills to beginners.* Journal of Educational Sciences, Faculty of Physical Education, University of Jordan, Yarmouk University. Vol. 40(3).
14-Basharat, Omar and Muhammad, Rafiq. (2017). *The effect of a proposed program using three teaching methods on learning some basic football skills among sixth-grade students*. Master's thesis, Faculty of Graduate Studies, An-Najah National University, Nablus, Palestine.
15- Khader, Khaled Nabil (2001). *The effect of using peer-guided and self-application methods on some physical and skill components of handball beginners*. PhD thesis, Suez Canal University, Faculty of Physical Education, Egypt.
16-Radwan, Ben Sassi. (2017). *The effect of the reciprocal method and guided discovery on learning some basic handball skills during physical education and sports lessons under the competency-based approach for secondary school students in Tiaret Province*. Journal of

Sciences and Practices of Physical, Sports and Artistic Activities. Vol. 7(1), pp. 17-23.

17-Yahyaoui, Al-Saeed and Al-Nahwi, Al-Taher. (2015). *The effect of using the problem-solving method on the motivation for athletic achievement of secondary school students during physical education and sports class*. Journal of the Sports System. Vol. 5 (1), pp.292-310.