The journal « The challenge »: ISSN: 9859-1112 EISSN:2602-6619
Volume: 18 Issue: 01 / 2026, Pages 328 - 340

# The Effect of Semi-Sport Games on the Reception Skill in Volleyball among Middle School Pupils Aged 12–14

# أثر الالعاب الشبه رياضية على مهارة الاستقبال في الكرة الطائرة لدى تلاميذ الطور المتوسط 12-14 سنة

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**Received: 05/10/2025** **Accepted: 09/11/2025** **Published: 09 /02/2026**

**Abstract:**

The aim of this research is to investigate the effect of semi-sport games on the reception skill in volleyball among middle school pupils (12–14 years old). To achieve this objective, we proposed the following scientific hypothesis: semi-sport games positively affect the reception skill in volleyball among middle school pupils. For this purpose, we relied on a sample of 20 pupils from Djellad Ahmed Middle School – Tlemcen Province, aged between 12 and 14 years, divided into experimental and control groups, deliberately selected from an original population of 433 pupils. We employed the experimental method and used the serve reception accuracy test. The following statistical tools were applied: arithmetic mean, standard deviation, correlation coefficient, test validity, and the t significance coefficient. After discussing the results, it was concluded that the proposed units had a positive effect on developing the reception skill in volleyball among middle school pupils. Finally, we presented a set of recommendations and suggestions, the most important of which is the application of semi-sport games during physical education classes, given the specificities of this age group.

**Keywords:** Semi-sport games; Reception skill; Volleyball; Middle school pupils.

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## Introduction:

Physical education and sport constitute an important educational medium in the social upbringing of adolescents, as they fulfill their needs and play an effective role in creating comfort and well-being. Researchers have found that there is a critical period in an individual's life during which psychological and social problems emerge—namely, adolescence. Opinions among scholars differ on this matter, but it is widely regarded as a crucial crisis stage for the child. Philosophers even referred to it as the "second birth," since it is characterized by morphological and psychological disturbances (Taha, 1999, p. 19).

The field of sports has witnessed remarkable development in terms of scientific research, with increasing studies and knowledge related to this domain, as it intersects with various other disciplines. Consequently, interest has expanded to cover different aspects that could contribute to this field. Researchers and specialists in sports sciences have therefore hastened to develop studies aimed at raising the level of different sports. Numerous theories and methods of practicing various sports have emerged, making the field fertile ground for the growth of knowledge and the renewal of acquired skills and expertise.

Volleyball is one of the team sports that has spread widely across the world, as it can be practiced in most places and times, by different age groups and both genders, which has given it a prominent place. Due to its importance, volleyball has been introduced into school curricula, institutes, and departments of physical education, with the aim of preparing qualified cadres to work in teaching and training. This game essentially depends on the mastery of its basic skills, given the rapid and numerous performance variables dictated by the course of play. This requires teachers and coaches to devote more effort and time to ensure the mastery of these skills.

The serve reception skill is one of the fundamental skills in volleyball, which all team members must perform efficiently. Otherwise, the player becomes a weak point for the team. For this reason, coaches always seek to select players with a high level of integrated skill performance and to continuously refine this skill until reaching the ideal level.

Semi-sport games have gained great importance in the field of training, as they increase motivation and enhance achievement in practical settings. They are considered a means or a set of playful and entertaining activities derived from the concept and purpose of play, aimed at developing physical and mental abilities in an active way, such as small games. They are inspired by children's activities and drawn from the traditions and customs of peoples, and can be regarded as a foundation for games. Semi-sport games have multiple functions: on the one hand, they help the trainee learn according to his abilities; on the other hand, they assist the coach in conducting the training session effectively and enjoyably, with the aim of achieving and developing the desired objectives.

The problem of the present study emerged from the researcher's review of studies that addressed semi-sport games and their relation to skill learning. Among these studies are:

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Ibrahim Hassan Mujahid (Hassan, 2024), Ali Othman Awad (Awad, 2023), and Al-Qeizi Al-Houari (Al-Houari, 2023). These studies agreed that semi-sport games occupy an effective place in physical education classes and play a major role in developing the skill aspect of volleyball. Through field visits to schools and interaction with supervisors and specialists, it became clear that semi-sport games are not being relied upon in preparing physical education sessions. Hence, the problem of this study revolves around semi-sport games and their effect on the reception skill in volleyball, which requires answering the following questions:

**General Question**

Do semi-sport games affect the improvement of the reception skill in volleyball among middle school pupils (12–14 years old)?

**Sub-Questions**

- Are there statistically significant differences between the pre-test and post-test of the control and experimental groups in the reception skill?
- Are there statistically significant differences between the control group and the experimental group in the post-test of the reception skill?

**Hypotheses**

Based on the research question, we formulated the following scientific hypothesis:

**General Hypothesis:** Semi-sport games positively affect the reception skill in volleyball among middle school pupils (12–14 years old).

**Partial Hypotheses:**

- There are statistically significant differences between the pre-test and post-test of the experimental group in the reception skill.
- There are statistically significant differences between the control and experimental groups in the post-test of the reception skill.

**Research Objectives**

The objectives of this research are reflected in the following points:

**General Objective:** To highlight the extent of the effect of semi-sport games in improving and developing the reception skill in volleyball.

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**Specific Objectives:**

- To highlight the role of semi-sport games in improving the pupil's reception skill.
- To generalize the concept of play in its various forms and its use as a method to achieve objectives.

## 1. Semi-Sport Games

Semi-sport games are an educational tool aimed at enhancing learners' motivation and achieving educational goals. They are defined as simple, organized games, easy to perform, requiring no major motor skills, and can be practiced anywhere without fixed rules. The teacher may establish rules appropriate to the age group and educational objective.

The types of semi-sport games are varied, including: running and chasing games, games with simple organization, team games, relay games, as well as role-playing, singing games, and fitness games.

Semi-sport games aim to develop psychomotor, cognitive, and physical aspects among pupils. Psychomotor objectives include improving basic movements and manual skills. They also contribute to developing cognitive abilities through distinguishing between auditory and visual perceptions. Physical objectives include endurance, strength, speed, and flexibility.

Cognitive objectives relate to the extent to which the child benefits from knowledge, understanding, and analysis through practice. Affective objectives concern generating the desire and determination to learn and developing the social dimension. Likewise, semi-sport games provide an atmosphere of vitality and enjoyment during lessons.

When selecting games, the teacher should take into account the educational objectives, the stage of growth, gender differences, and the place of play. The choice of the game must be consistent with the available facilities and easy to understand and implement.

Semi-sport games play an important role in developing pupils' physical and psychological abilities. They also improve psychological well-being and foster a spirit of cooperation. Moreover, they serve as a preparation for team games by developing motor skills.

These games are effectively used in physical education lessons, where they have contributed to changing teaching methods and adding an element of fun. They are also fundamental in sports training, as they help develop physical components and basic skills while creating a positive psychological environment (Mahmoud, 2015, p. 45).

## 2- The Reception Skill

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Reception in volleyball is considered one of the most important basic movements. It is defined as the first pass to receive the ball after it crosses the net. The team relies on this skill to defend itself against the opponent's spikes. If performed incorrectly, it may lead to the loss of a point, whereas a good reception provides an opportunity for an effective attack.

The serve reception skill consists of three main types: reception from a standing position, reception from the side, and reception from a dive. Serve reception is one of the fundamental defensive skills that help players build successful attacks. The importance of reception lies in the fact that if the player commits an error, the team loses a potential point.

The method of serve reception requires the player to be well-prepared by moving quickly to the appropriate position and adopting the correct body posture. The stages of reception include: receiving the overhead ball by adopting the correct stance, receiving the side ball through a side step, and receiving the front distant ball by quickly changing body position. The distant back ball is handled in the opposite manner to the front balls.

The steps of training the serve reception skill include explaining the skill, performing it without the ball to learn the correct stance, using teammates to throw the ball, and gradually increasing the distance between players during practice. The defender must receive the ball correctly and direct it to a designated player. (Al-Jumaili, 2015, p. 25)

### 3- Adolescence

Adolescence is the transitional period from childhood to maturity, usually beginning at the age of 15–16. During this stage, significant physical and psychological changes occur, as boys begin to show signs of manhood and girls begin to show signs of womanhood. These changes focus on physical, mental, and social growth.

The characteristics of growth in adolescence include physiological changes that raise hormone levels affecting the body, such as testosterone. Clear differences between the sexes appear, such as body strength and speed. Males usually experience an increase in muscle mass and lung capacity, while females may experience an increase in body fat percentage.

Morphological growth includes increases in height and weight, with adolescents growing at an average rate of 10 cm in height and 9.5 kg in weight. During this period, adolescents experience difficulty in controlling their bodies due to rapid and irregular growth. As for motor growth, difficulties in motor coordination appear.

On the emotional level, the adolescent's feelings are linked to both his external and internal world. Social growth is characterized by the expansion of social relationships and the adolescent's desire to assert himself. At this stage, the adolescent often shows rebellion and resistance to advice, which causes conflict with parents.

Regarding mental growth, the adolescent moves from concrete thinking to abstract thinking, showing a better ability for logical reasoning and hypothesis formation.

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The third and fourth stages of study require greater effort from students, as they strive to affirm their positions within their groups. Rapid behavioral changes may affect their actions, making them in need of support and reassurance. (Zahran, 2005, p. 165).

## 4- Research Methodology and Field Procedures

### 4-1- Exploratory Study

The exploratory study is the first step that helps the researcher gain an overview of the aspects of the field study.The researcher visited Djellad Ahmed Middle School, located in the Agadir neighborhood of Tlemcen Province, in order to examine the site where the study would be conducted, determine the sample on which the study would be applied, verify the validity of the tool used for data collection, as well as inspect the equipment used and identify the appropriate time and schedule for conducting the tests. This was done to arrive at the best method for carrying out the tests and to avoid obstacles and problems that might be encountered during fieldwork.

### 4-2- Scientific Foundations of the Tests

**Reliability:** To calculate the reliability coefficient, the test–retest method was used on 25/01/2024 and 29/01/2024 with a sample of 10 pupils (the exploratory sample), who were excluded from the main study sample. The reliability coefficient was calculated using Pearson's correlation coefficient.

**Validity:** To determine the intrinsic validity of the reception test used, we calculated the square root of the reliability coefficient.

**Table 1. Psychometric Characteristics of the Reception Test**

| Test | Test | | Retest | | Reliability | Intrinsic Validity |
|---|---|---|---|---|---|---|
| | Mean | Standard Deviation | Mean | Standard Deviation | | |
| **Reception** | 4.20 | 1.69 | 6.50 | 1.90 | 0.90 | 0.95 |

From the results in the table, we observe that both the reliability and intrinsic validity coefficients of the test are high, with the first reaching 0.90 and the second estimated at 0.95. This indicates that the test is both valid and reliable.

**Objectivity:** The tests used in this research are simple, easy to understand, not open to interpretation, and far from self-assessment. Therefore, the tests employed are considered to have good objectivity, as they were reviewed by a group of experts and specialists.

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### 4-3- Research Method

The choice of the appropriate method to solve a research problem essentially depends on the nature of the problem itself. The methods used vary according to the objective the researcher seeks to achieve. Given the problem under study, we adopted the experimental method with two groups (control and experimental). This method is considered one of the most important in the sports field, as it differs from others in that the researcher plays an active role in the research situation, which consists of making a deliberate change in the situation under specific conditions and observing the resulting change.

### 4-4- Research Population

The research population consists of middle school pupils in Tlemcen Province, totaling 433 pupils.

**Research Sample:** Our research sample consisted of 30 pupils, deliberately selected from Djellad Ahmed Middle School in Tlemcen. Their ages ranged between 12 and 14 years, and all were male.

- Control group: 10 pupils
- Experimental group: 10 pupils
- Exploratory sample: 10 pupils

**Homogeneity of the Control and Experimental Groups:**

**Table 02. Differences between the Control and Experimental Groups in the Pre-Test of the Reception Skill**

| Test | Experimental Group | | Control Group | | Calculated T | Tabulated T | Error Rate | Degree of Freedom | Statistical Significance |
|---|---|---|---|---|---|---|---|---|---|
| | Mean | Standard Deviation | Mean | Standard Deviation | | | | | |
| Reception | 8.20 | 4.32 | 6.40 | 3.06 | 1.08 | 2.10 | 0.05 | 18 | Not significant |

From the results in Table (02), we observe that the mean value of the experimental group in the pre-test of the reception skill was 8.20 with a standard deviation of 4.32, while the mean value of the control group was 6.40 with a standard deviation of 3.06.

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We also note that the calculated *t* value between the control and experimental groups in the pre-test of the reception skill was 1.08, which is lower than the tabulated *t* value of 2.10 at an error rate of 0.05 and 18 degrees of freedom. This indicates that there are no statistically significant differences between the control and experimental groups in the pre-test of the reception skill. Hence, we conclude that the two groups are homogeneous.

### 4-5- Research Domains

- **Human Domain:** 30 pupils enrolled in middle school.
- **Spatial Domain:** Djellad Ahmed Middle School – Agadir neighborhood – Tlemcen Province.
- **Temporal Domain:** 2023–2024 (from December until March).

### 4-6- Research Variables

Controlling variables is a necessary element in any field study, in order to manage them as much as possible. Such control helps in interpreting and analyzing the results of the field study and in reaching more scientific and objective conclusions.

- **Independent Variable:** Semi-sport games
- **Dependent Variable:** Reception skill in volleyball

**Research Tools:** This study relied on:

- A set of semi-sport games
- A reception test validated by specialists

### 4-7- Method of Applying the Program with the Experimental Sample

The pre-test was conducted on the sample, and the training program was implemented from 05 February 2024 to 26 February 2024. It lasted 4 weeks and included 12 sessions, divided into 3 sessions per week. Each session lasted one hour, beginning with a warm-up, followed by an explanation of the game, and then the training session itself.

### Description of the Test Used in the Study: Serve Reception Accuracy Test:

- The tested player stands in zone (A) and receives the ball from the server (T), attempting to direct it to zone (B).
- The performance is repeated 3 times for each zone (A), (B), and (C).
- 4 points for a ball directed to the target.

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- 3 points for a ball inside the quarter of the target.
- 2 points for a ball touching the net.
- 1 point for a ball away from the target but inside the attack zone.
- 0 points for an incorrect ball.
- The maximum score for the test is 36 points.

### 4-8- Statistical Tools

We used the following statistical tools: arithmetic mean, standard deviation, Pearson's correlation coefficient, and Student's *t*-test.

## 5- Presentation and Discussion of Research Results

### 5-1- Presentation of the Experimental Sample Results

**Table 03. Differences between the Pre-Test and Post-Test of the Reception Skill in the Experimental Sample**

| | Pre-Test | | Post-Test | | Calculated T | Tabulated T | Error Rate | Degree of Freedom | Statistical Significance |
|---|---|---|---|---|---|---|---|---|---|
| | **Mean** | **Standard Deviation** | **Mean** | **Standard Deviation** | | | | | |
| **Reception** | 8.20 | 4.32 | 20.50 | 5.40 | 10.31 | 2.26 | 0.05 | 09 | Significant |

From Table (03), we observe that the mean value of the experimental sample in the pre-test of the reception skill was 8.20 with a standard deviation of 4.32, while the mean value in the post-test was 20.50 with a standard deviation of 5.40.

We also note that the calculated *t* value between the pre-test and post-test of the reception skill in the experimental sample was 10.31, which is greater than the tabulated *t* value of 2.26 at an error rate of 0.05 and 9 degrees of freedom. This indicates the presence of statistically significant differences between the pre-test and post-test of the reception skill, in favor of the post-test.

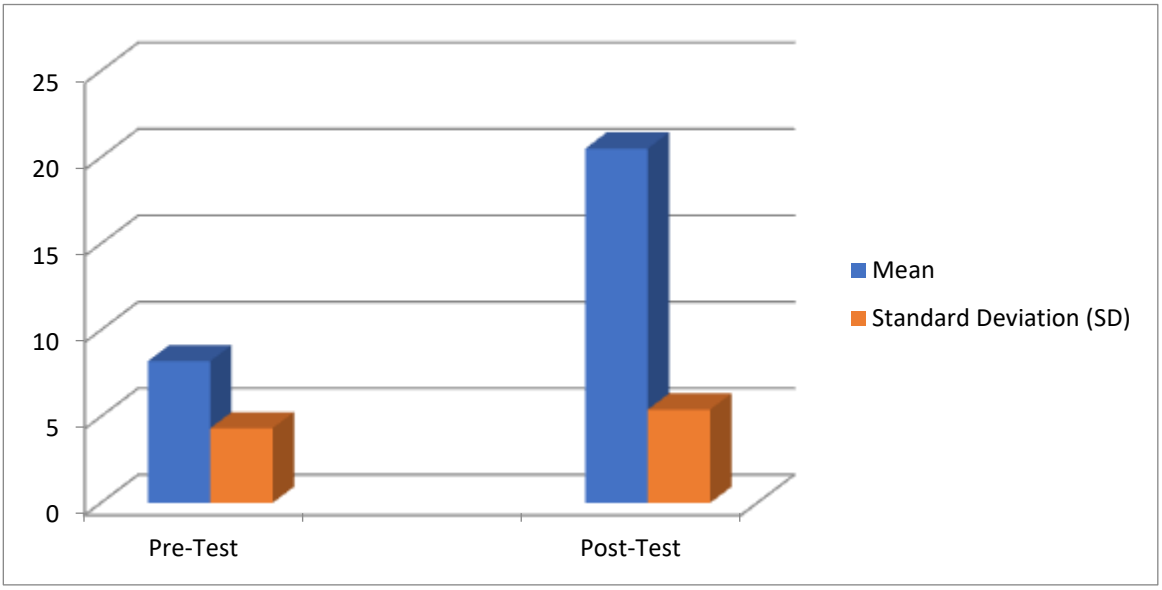
We conclude that the experimental sample achieved improvement in the reception skill, and this improvement is attributed to the training program applied to the experimental sample using semi-sport games. This finding is consistent with the results of Yuni Astuti, who in her study on the effect of sports modifications and small games on improving physical fitness among students of the adaptive physical education course, concluded that

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modifications of sports games and play have a significant impact on enhancing students' physical fitness (Astuti, 2024).

**Figure 01. Shows the level of the experimental sample in the pre-test and post-test of the reception skill**




## 5-2- Presentation of the Control Sample Results

**Table 04. Differences between the Pre-Test and Post-Test of the Reception Skill in the Control Sampl**

| Test | Pre-Test | | Post-Test | | Calculated T | Tabulated T | Error Rate | Degree of Freedom | Statistical Significance |
|---|---|---|---|---|---|---|---|---|---|
| | Mean | Standard Deviation | Mean | Standard Deviation | | | | | |
| Reception | 6.40 | 3.06 | 6.20 | 2.39 | 0.45 | 2.26 | 0.05 | 9 | Not significant |

From Table (04), we observe that the mean value of the control sample in the pre-test of the reception skill was 6.40 with a standard deviation of 3.06, while the mean value in the post-test was 6.20 with a standard deviation of 2.39.

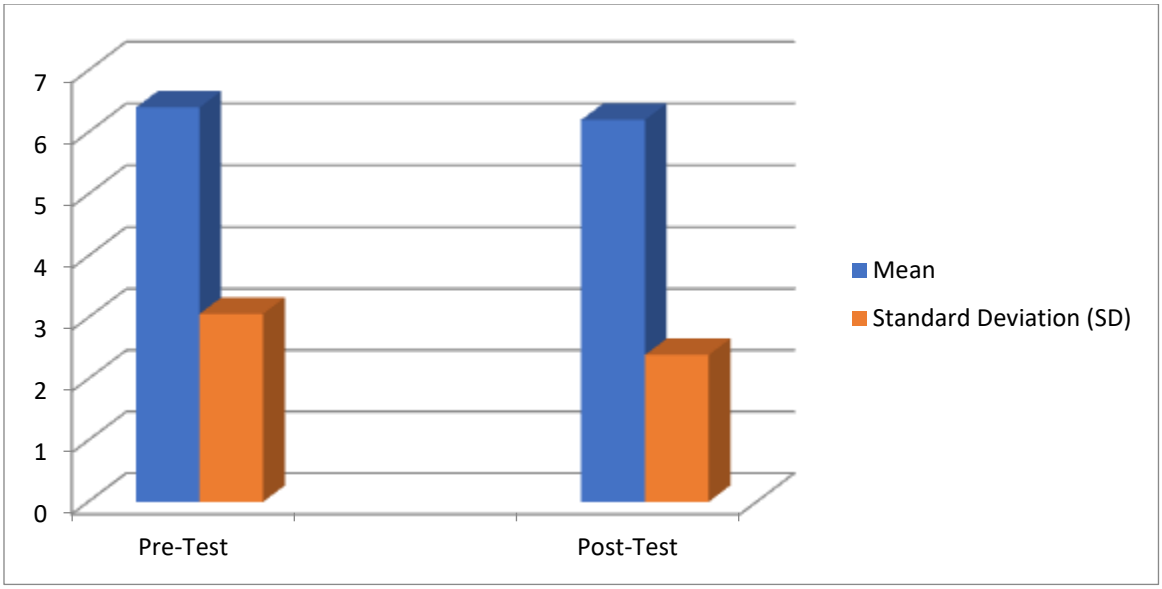
We also note that the calculated *t* value between the pre-test and post-test of the reception skill in the control sample was 0.45, which is lower than the tabulated *t* value of 2.26 at an error rate of 0.05 and 9 degrees of freedom. This indicates that there are no

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statistically significant differences between the pre-test and post-test of the reception skill in the control sample. In other words, the control sample did not improve in the reception skill.

**Figure 02. Shows the level of the control sample in the pre-test and post-test of the reception skill**




From Figure (02), we conclude that the control sample did not achieve differences in the means of the pre-test and post-test.

### 5-3- Presentation of the Post-Test Results

**Table 05. Differences between the Control and Experimental Samples in the Post-Test of the Reception Skill**

| Test | Experimental Group | | Control Group | | Calculated T | Tabulated T | Error Rate | Degree of Freedom | Statistical Significance |
|---|---|---|---|---|---|---|---|---|---|
| | Mean | Standard Deviation | Mean | Standard Deviation | | | | | |
| Reception | 20.50 | 5.40 | 6.20 | 2.39 | 7.66 | 2.10 | 0.05 | 18 | significant |

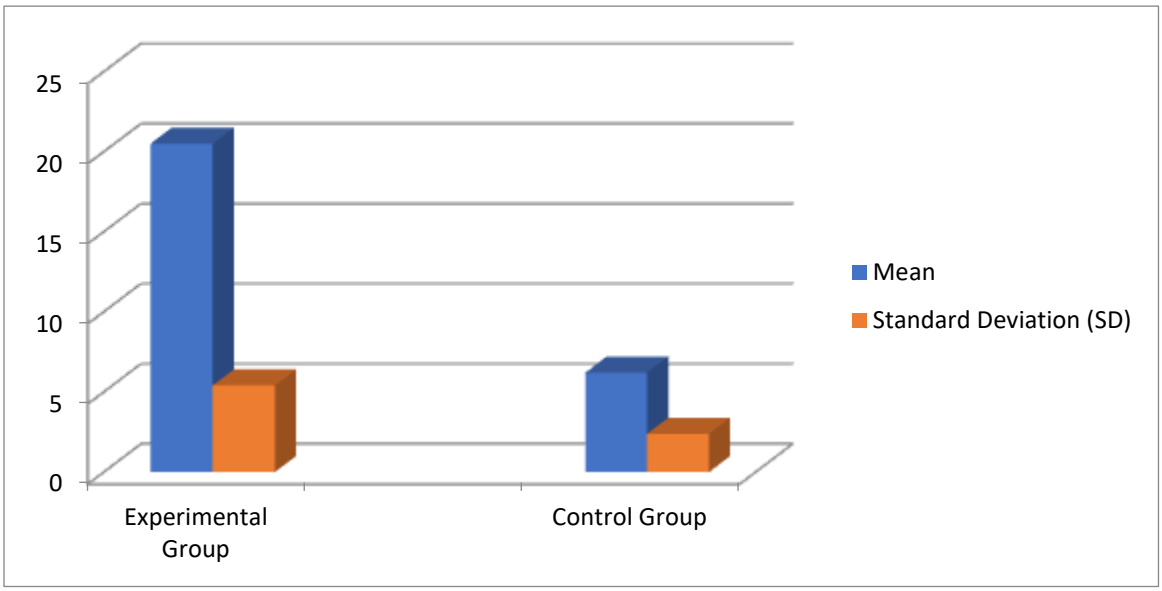
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From Table (05), we observe that the mean value of the experimental sample in the post-test of the reception skill was 20.50 with a standard deviation of 5.40, while the mean value of the control sample was 6.20 with a standard deviation of 2.39.

We also note that the calculated *t* value between the control and experimental samples in the post-test of the reception skill was 7.66, which is greater than the tabulated *t* value of 2.10 at an error rate of 0.05 and 18 degrees of freedom. This indicates the presence of statistically significant differences between the control and experimental samples in the post-test of the reception skill, in favor of the experimental sample. This difference is attributed to the training program applied to the experimental sample using semi-sport games. This finding is consistent with the results of researchers Abdelsalam Jaber Hussein and Sadiq Khaled Al-Hayek, who demonstrated that small volleyball games positively influenced the improvement of students' life, skill, and motor abilities (Alhayek, 2012).

**Figure 03.** Shows the level of the control and experimental samples in the post-test of the reception skill




From Figure (03), we conclude that the experimental sample improved in the reception skill, unlike the control sample. This improvement is attributed to the training program applied to the experimental sample using semi-sport games.

## Conclusion

From the results of the tables, it is clear that there was improvement in the level of the experimental sample in the targeted skill, and this is due to the effect of the proposed program, which relies primarily on semi-sport games. These games have advantages that align with the specificities of the child at this stage, particularly in their motivational aspect, which plays a major role in attracting pupils' attention. They also help to energize the

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session and create an atmosphere of fun and enjoyment. This confirms the research hypothesis.

This is also supported by the study of Younsi Oussama and Zerrouki Boubaker, which highlighted the role of semi-sport games in physical education sessions and their relationship to the development of volleyball skills among middle school pupils (12–16). It also agrees with the findings of Dr. Moufti Abdelmounaim and the study of Zerroui Aziz (2018–2019), both of which confirmed the positive impact of semi-sport games in physical education sessions.

Jean Piaget considered play to be an indicator of a child's growth and maturity, as well as an essential and necessary requirement for development in all its forms—cognitive, social, emotional, physical, sexual, and affective. He also viewed play as the foundation of cognitive development and its progression; without it, cognitive growth does not occur. Among the most important objectives of play are the development of memory, association, insight, and observation.

Through practicing sports games, the pupil discovers and learns concepts, knowledge, and information about the activity being practiced. He can also observe, analyze, and distinguish his surroundings in terms of space, peers, and the practiced activity.

Based on the above, the researcher recommends the necessity of applying semi-sport games during physical education sessions in order to create a suitable learning environment, relying on the use of semi-sport games that are appropriate to the psychological and physical characteristics of the child.

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