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## The effect of ground ladder exercises on developing the skill of deception and shooting in handball

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### Abstract

The purpose of this paper is to preparing exercises using the ground ladder in the skill of deception and shooting for handball players, and identifying the effect of exercises on the skill of deception and shooting for handball players. The researchers followed the experimental approach in their current research by designing two equivalent experimental and control groups with pre- and post-measurement to suit the requirements of the research. The research community was determined by the players of the Gifted Handball Center in Wasit, numbering 36 players. The research sample was chosen using a simple random method by drawing lots. (12) Players were chosen from the research community and divided into two groups (Experimental and control) (6) players for the experimental group and (6) players for the control group. The research sample constituted 33.33% of the original research community. One of the most important results reached by the researcher is that: Using ground ladder exercises positively affects the skill of deception, and using ground ladder exercises has a better effect than the exercises usually used in training units in the skill of deception and shooting. One of the most important recommendations recommended by the researchers is that: The necessity of paying attention to coordination exercises because of their importance in developing the basic and complex skills in handball, including ground ladder exercises in training programs because of their major role in developing the movement of the legs (Foot work) and the skill of deception, and conducting similar studies and research on other samples.

**Keywords:** Ground ladder exercises, deception skill, shooting skill, handball training, footwork

### Introduction

The development in the sports field leads to achieving good sports results at all levels. This development does not come out of nowhere, but rather came as a result of using knowledge, various sciences and modern scientific methods by relying on field studies and research to achieve progress to bring athletes to the highest achievements. Training performs a basic and important role in raising the level of skill preparation and ensuring a high technical level, as well as using auxiliary means in the training process that have a significant and effective impact in helping the coach perform his task well. The use of such means does not reduce the impact of the person in charge of the training process, but rather works to create a state of blending between everything new in the educational and training process. Handball is one of the team games in which the success of any team depends primarily on the extent to which its members master the basic skills of the game. Among the skills of great importance in handball are deception and shooting, as the skillful movements that the team executes during the attack at some times of the match create a gap in the defense line, which requires the players to exploit it. Deception generally puts the defender in an inappropriate position, which creates a larger gap through which the player can penetrate. The speed of movements and change of direction provide opportunities for these gaps in the defense, thus the possibility of shooting comfortably. Deception is defined as (movements performed by the player with his body or part of it with or without the ball in order to attract the attention of the opposing player and obtain a certain reaction). The attacking player uses deception as a means of getting rid of the defense to attract the attention of the defender to the direction opposite to the original movement of the attacker, which allows the attacker to get rid of defensive control or reduce the defensive pressure on him and move to a better attacking

position. Because of its great impact on the match, it is a contributing factor that enables the team to decide matches if it reaches mastery in performance, especially if it is coupled with shooting or a decisive pass, or it is employed to serve the rest of the skills, so a lot of time and effort is given to learning this important skill, but performing this skill is not without difficulty and making many mistakes, especially in the early stages of learning. In light of the above, the importance of the current study is evident in using the ground ladder in training units to facilitate the process of learning the skill of deception and shooting in order to help coaches develop the various skills of deception and shooting among players by reducing the effort for the coach and the time for the players.

### Research problem

Handball is one of the open team games that is characterized by the abundance of skills that players must learn and master, including the skill of deception and shooting through the experience of researchers in the sports field, and through field knowledge of the reality of handball. Following up on the training units for players in the Talent Sports School in Wasit Governorate, it was found that most players face weakness in performing the deception and shooting process, which is considered one of the important solutions in the match and may give the player an advantage in shooting, especially in individual confrontations, as its performance requires precise and complex coordination of the movements of body parts, including movements that require great fluidity and agility. The researchers believe that training this skill in curricula requires a lot of time and effort from those in charge, and that despite the existence of good training curricula, they lack the devices and tools used that can serve the entire training process, by providing important information and details for the skill.

### Research objective

- Preparing exercises using the ground ladder in the skill of deception and shooting for handball players
- Identifying the effect of exercises on the skill of deception and shooting for handball players

### Research hypotheses

- There are significant differences between the pre- and post-tests in favor of the two research groups and in favor of the post-tests due to the influence of ladder

exercises Ground to develop shooting and deception for handball players

- The presence of significant differences in the post-tests between the control and experimental groups in favor of the experimental group in the research variables

### Research fields

- **Human field:** Handball players at the specialized school in Wasit Governorate
- **Time field:** (30/10/2023) to (10/3/2024)
- **Spatial field:** Martyr Maitham Habib Hall for Sports in Wasit Governorate

### Research methodology and field procedures

#### Research Methodology

One of the most important approaches is the experimental approach in research that attempts to develop appropriate solutions to educational problems. Therefore, the researchers followed the experimental approach in their current research by designing two equivalent experimental and control groups with pre- and post-measurement to suit the requirements of the research. Experimentation is a deliberate and controlled change to the specific conditions of an incident and observing the resulting changes in the incident itself and interpreting them (Ali Saloum Jawad and Mazen Hassan Jassim. 2011, p. 140) [3].

**Community and sample research:** The research community was determined by the players of the Gifted Handball Center in Wasit, numbering 36 players. The research sample was chosen using a simple random method by drawing lots. (12) players were chosen from the research community and divided into two groups (Experimental and control) (6) players for the experimental group and (6) players for the control group. The research sample constituted 33.33% of the original research community.

#### Homogeneity of the research sample

Before starting to implement the exercises in order to adjust the variables and obtain accurate results, the researchers resorted to verifying the homogeneity of the research sample in the variables represented by morphological measurements.

Homogeneity was performed on the two research groups in the variables of height, weight, chronological age and training age, as in Table (1).

**Table 1:** shows the homogeneity of the research sample:

Variables	Measuring unit	Mean	Std. Deviations	Skewness	Leven
Length	m	1.63	0.042	0.290	0.442
weight	Kg	53.766	5.102	0.415	0.623
Chronological age	Year	14.583	3.996	0.388	0.575
Training age	Year	2.21	0.606	0.373	0.554

Table (1) shows that the two research groups are homogeneous in all the influential variables, as the results showed that the values of the skewness coefficient were limited between ( $\pm 1$ ), which means that the distributions of the sample scores in each variable were not skewed and that they are close to the normal distribution, and the main benefit of ensuring the homogeneity of each group is to judge whether there are differences between the pre- and

post-tests of each group, differences due to the influence of the independent variable and not to chance factors.

**Equivalence of the two research groups:** Before starting to implement the exercises in order for both groups to start from one starting point, the researchers conducted an equivalence process for the two groups (Experimental and control) to test deception and targeting as in Table (2).

**Table 2:** Shows the equivalence of the research sample individuals

Variables	Experimental		Control		T value calculated	Level Sig	Type Sig
	Mean	Standard deviation	Mean	Standard deviation			
Deception and shooting	2.142	0.690	2	0.816	0.354	0.73	Non sig

## Means, devices and tools used in the research

### 1 Means of collecting information

- The researchers used the following means:
- Arabic sources.
- The World Wide Web (Internet)
- Observation and experimentation.
- Previous studies and research.
- Data collection and transcribing forms.
- Statistical means.

### Devices used in the research

#### The researchers used the following tools and devices

- Ground ladder to teach the skill of deception and shooting.
- Computer type (HP) number (1)
- Jumping device.
- Camera type (Sony) number (1)
- Legal handball field.
- Legal handballs number (20)
- Curtain.
- Whistle number (2)
- Stopwatch (2)
- Medical scale number (1)
- Measuring tape.

### Field research procedures

#### Determining the most important tests appropriate for the research variables

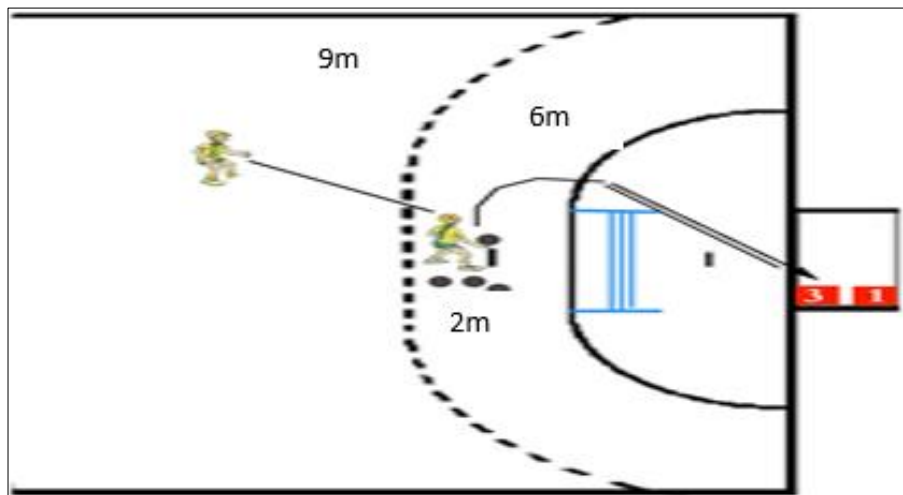
The researchers relied on their personal experiences and conducting practical interviews with a number of experts and specialists in handball to determine the appropriate tests in the research in order to choose the appropriate test for the

research variables. The appropriate tests for the research sample were determined, as the special tests for the research variables were determined, as these tests are specialized and standardized tests in the game of handball. In light of those tests, the researchers adopted them in measuring (deception and shooting).

### Description of the tests used in the research

#### Deception and shooting test: (Diaa Al-Khayat and Nofal Muhammad Al-Hayali. 2001, p. 13) <sup>[5]</sup>

- Purpose of the test: Shooting accuracy after performing the deception
- Tools: (10) handballs, high jump device, curtain placed on the jump device
- Rules: A forearm stands in the middle of the distance between the two posts of the jump device B and holds the handball.
- Performance method: The player stands on the (9) meter line and in front of the post of the jump device.
- The player moves in the direction of the forearm to receive the ball.
- Then he starts moving (1-3) steps in the direction of the player's path if the player is right-handed and in the direction of the player's right if the player is left-handed, then he scores on one of the squares (1) or (2).
- The player performs the same previous action to shoot in the other quarter.
- Rules: Do not take more than three steps.
- Scoring: A point is awarded for each shot inside the designated box.
- Zero is awarded if the player commits a legal violation (3 steps or 3 seconds).



**Fig 1:** Shows the Deception and shooting test

### Exploratory experiment

The researchers conducted their exploratory experiment in the hall of the Jihad neighborhood youth center for a sample of handball players from the talent center, numbering (6) players, over the course of one day, corresponding to Wednesday, November 1, 2023, to ensure the suitability of the exercises prepared by the researchers for the sample at exactly (four o'clock in the afternoon), as well as to identify:

1. Knowing the time required to conduct the test.
2. The readiness and validity of the devices and tools used in the tests.
3. Knowing the extent of the research sample's acceptance of the exercises set.

4. Explaining the test mechanism and how to register for the assistant work team (see appendix (1))

In addition to identifying the most important obstacles that the researchers and the work team will face in the research tests and the suitability of the registration forms for the purpose for which they were prepared.

**Pre-tests:** The researchers conducted the pre-tests for the research sample in the closed hall of Al-Jihad neighborhood in Wasit Governorate, which coincided with Tuesday at exactly four o'clock in the afternoon, corresponding to 7/11/2023. The deception and correction test was conducted

on the research sample. The researchers took care to prepare all the necessary conditions for applying the test, as well as preparing the sample before implementing the test by conducting the appropriate warm-up. The scores obtained from the test were recorded in a form prepared in advance for this purpose and saved for the purpose of statistical processing.

**Exercises used and how to apply them**

After conducting the pre-test, the researchers prepared special exercises (skills) for handball players on the ground ladder by relying on a group of sources and references in the field of learning and training in handball. Then the researchers interviewed a number of experts and specialists in the field of handball, and presented those exercises to a group of experts and specialists. (See appendix (2)) It was agreed on the validity of the exercises and their suitability for the training unit in its three sections, as it took into account the training level of the research sample and the age groups of the experimental research sample, also relying on scientific sources and references. The exercises were implemented for (8) weeks at a rate of (3) units per week, i.e. (24) units. These units were applied on the days (Sunday, Tuesday, Thursday), noting that the unit time included part of the main section, which amounted to (30 minutes), while the control group trained the usual exercises in the training unit.

**Post-tests of the research**

The researchers conducted the post-tests for the experimental and control research sample in the same place where the pre-tests were conducted, which is the closed hall in the Al-Jihad neighborhood youth center. The same procedures were adopted in terms of time, place, tools used, and preparing all the conditions surrounding the tests, in order to avoid variables that could affect the results of the post-tests for the research sample members.

**Statistical Methods**

The researchers used the SPSS statistical package to extract its data, which are:

1. Percentage law.
2. Arithmetic mean.
3. Standard deviation.
4. Skewness coefficient.

**Results and discussion**

**Results**

**Presentation the results of the deception and shooting test for the experimental and control groups in the pre- and post-test**

**Presentation the results of the deception and shooting test for the control group in the pre- and post-test**

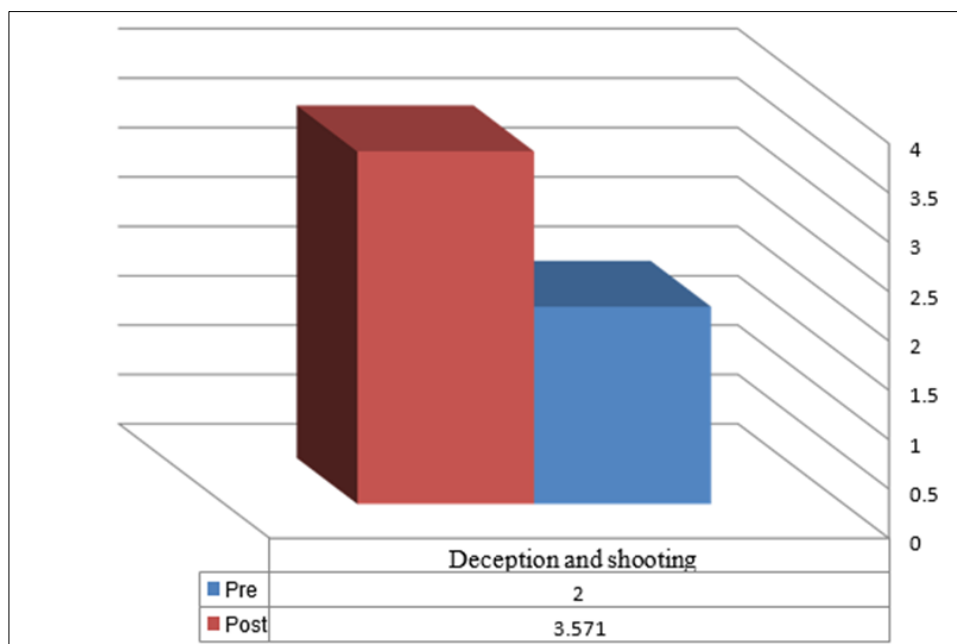
**Table 3:** Shows the arithmetic means, standard deviations, the calculated (t) value, and the significance of the differences in the pre- and post-test for the control group.

Variables	Pre-test		Post-test		Arithmetic mean of difference	Standard deviation of differences	T value calculated	Level Sig	Type Sig
	Mean	Standard deviation	Mean	Standard deviation					
Deception and shooting	2	0.816	3.571	1.511	1.571	1.6	2.579	0.042	Sig

Significant at a significance level of  $\leq 0.05$  at a degree of freedom of (5) and a tabular t-value of 2.571

Through table. (3) and figure No. (2), the results of the control group appear in the pre- and post-tests of the skill of deception and targeting. It was found that the value of the arithmetic mean in the pre-test was (2), while the standard deviation was (0.816), while in the post-test the

arithmetic mean was (3.571) and the standard deviation value was (1.511), while the calculated t value was (2.569), and the significance was The real value (0.042), which indicates the existence of significant differences in favor of the post-test.



**Fig 2:** Shows the pre- and post-tests of the deception and shooting skill for the control group.

**Presentation the results of the deception and shooting test for the experimental group in the pre- and post-test**

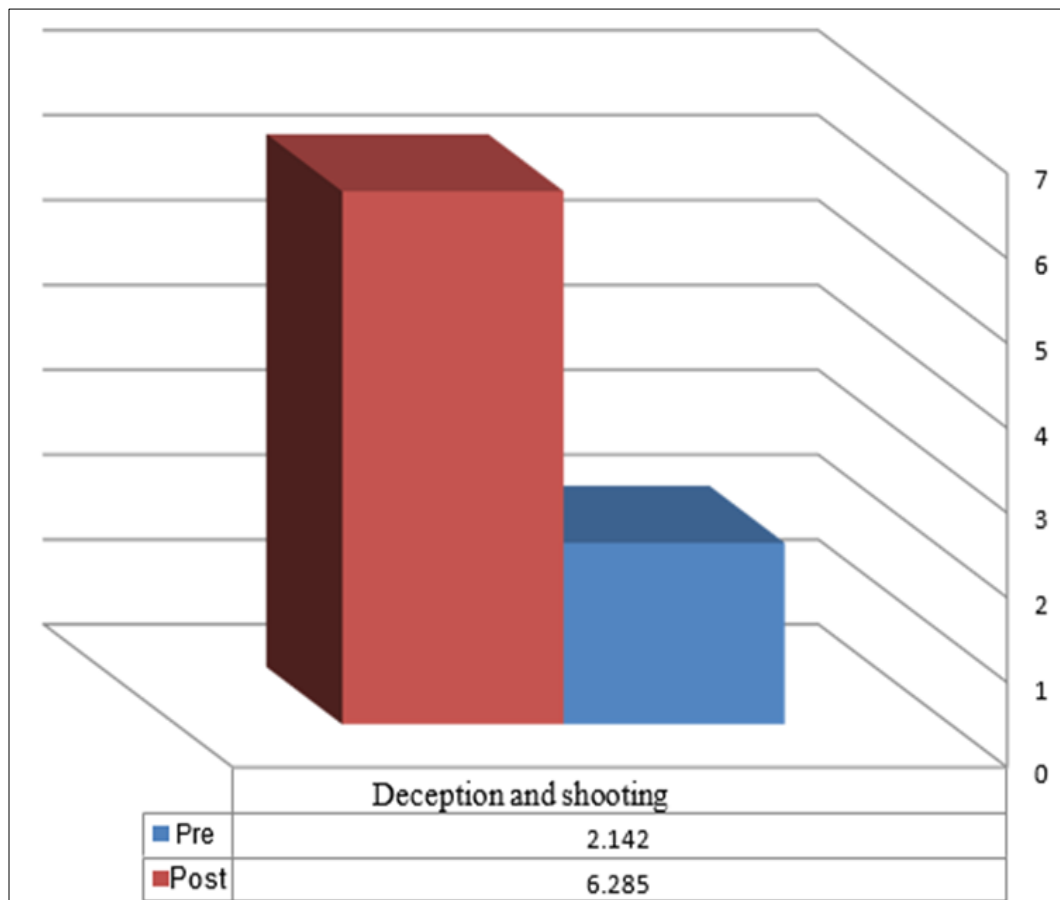
**Table 4:** Shows the arithmetic means, standard deviations, the calculated (t) value, and the significance of the differences in the pre- and post-test for the experimental group.

Variables	Pre-test		Post-test		Arithmetic mean of difference	Standard deviation of differences	T value calculated	Level Sig	Type Sig
	Mean	Standard deviation	Mean	Standard deviation					
Deception and shooting	2.142	0.690	6.285	0.911	4.14	2.6	4.200	0.006	Sig

Significant at a significance level of  $\leq 0.05$  at a degree of freedom of (5) and a tabular t-value of 2.571

Through Table (4) and Figure (2), the results of the experimental group appear in the pre- and post-tests of the skill of deception and shooting. It was found that the value of the arithmetic mean in the pre-test was (2.142), while the standard deviation was (0.690), while in the post-test the

arithmetic mean was (6.285) (and the value of the standard deviation was (0.911), while the calculated t value was (4.200), and the true significance was (0.006), which indicates the existence of significant differences in favor of the post-test.



**Fig 3:** Shows the pre- and post-test of the experimental group

**Discussion**

**Discussion of the results of the pre- and post-test of the deception and targeting test for the experimental and control groups**

Through Table (3,4) and Figure (3), differences appeared between the pre- and post-measurement of the experimental and control groups in favor of the post-measurement. The researchers attribute the reason for the development to the use of exercises prepared by the researchers and developed according to scientific foundations in terms of intensity, repetitions, performance time and rest for the experimental and control groups, as these exercises were applied with maximum intensity in order to achieve the desired benefit from them. This is consistent with what was indicated by (Jabri & Miteb, 2023, p 6) [6-7] (Ahmed Khamil Al-Sudani and Mohamed Mahmoud Kazim. 2017) [2] that these exercises are performed with maximum intensity in order to

achieve the desired benefit from them. As for the experimental group, the results showed significant differences in all variables due to the use of the auxiliary tool by the researchers, as the use of (Agility ladders) works to increase the coordination between the movements of the arms and legs through the adaptations that occur in the central nervous system (Jabri & Miteb, 2023, p5) [6-7], because the nature of the work of the legs requires speed in performance and control of steps and changing directions according to the nature and requirements of handball and performing the skill of deception, which is confirmed by that the game of handball contains many diverse responses to unexpected variables in the external environment and the competitor (Dabour and Yasser, 1997, p. 53) [4] (Mohamed Tawfiq Al-Waleeli. 1989) [10].

Since deception is a very complex movement process and becomes more difficult if the deception is followed by the

shooting process, especially since shooting is a process that requires accuracy in performance and technique until it is crowned with shooting, so researchers focused in special exercises on the work of the legs (Foot work) to balance the movements of the trunk and agility in the processes of rotation, high jumping, landing and changing direction, as deception is the movements that the player performs with his body or part of it with or without the ball in order to attract the attention of the opposing player and obtain a specific reaction in the direction opposite to the original movement of the attacker, which allows the attacker to get rid of defensive control or relieve the defensive pressure on him And moving to a better attacking position from which he can perform the shooting process or pass the ball to a colleague during the competition (Abdul Zahra Hamidi and Ahmed Mahmoud. 2006, pp. 160-162) <sup>[1]</sup> (Imad Al-Din Abbal states that deception generally puts the defender in an inappropriate position, which gives you a larger space that you can penetrate. The speed of movements and change of direction provide opportunities for the occurrence of these gaps in the defense, which the player can exploit in the shooting process and registering goals (Imad Al-Din Abbal and Medhat Mahmoud. 2007, p. 29) <sup>[6]</sup> (Mona Salem Fathi. 2000) <sup>[11]</sup>.

agree that the basic skills and offensive plans in their various colors become useless if they are not crowned in the end with successful shooting on the goal. Hence, the importance of the deception and shooting processes as one of the most important offensive skills affecting the game of handball, as the team can score goals and achieve victory through them. Therefore, all team players must master and perfect the performance in a good and accurate manner, as all the measures taken during learning and training in the match have no value without the correct completion of these (Mounir Jarjil Ab Irahim. 2004, p. 106) <sup>[12]</sup>.

## Conclusions and Recommendations

### Conclusions

- Using ground ladder exercises positively affects the skill of deception
- Using ground ladder exercises has a better effect than the exercises usually used in training units in the skill of deception and shooting.

### Recommendations

#### Appendix (1)

##### Assistant Working Group

No.	Name	Specialization
1	Assist. Lec. Tawhid Haider	Wrestling
2	Assist. Lec. Heba Salah Abdel Mohsen	Gymnastics
3	lec. Alaab Haider Mahdi Dakhel	Handball
4	Assist. Lec. Hassanein Abbas	Fencing

#### Appendix (2)

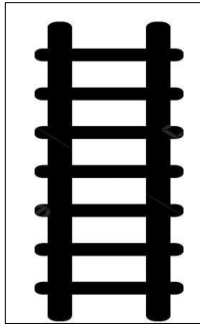
##### Specialized Experts

No.	Name	Specialization	Affiliations
1	Dr. Ahmed Shaker	Training Physiology Handball	College of Physical Education and Sports Sciences, Wasit University
2	Haider Mahdi Dakhel	Bachelor of Physical Education	College of Physical Education and Sports Sciences, Wasit University
3	Haider Jabbar Aliwi	Coach	College of Physical Education and Sports Sciences, Wasit University
4	Mustafa Talib Khayoun	Assistant Coach	College of Physical Education and Sports Sciences, Wasit University

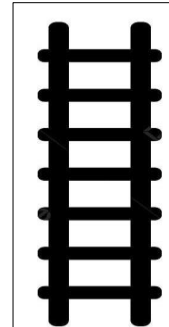
- The necessity of paying attention to coordination exercises because of their importance in developing the basic and complex skills in handball.
- Including ground ladder exercises in training programs because of their major role in developing the movement of the legs (Foot work) and the skill of deception.
- Conducting similar studies and research on other samples.

### References

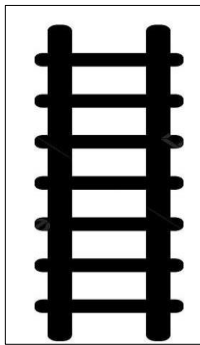
- Hamidi AZ, Mahmoud A. Handball Education Training. 1<sup>st</sup> ed. Benghazi: National Book House; c2006.
- Al-Sudani AK, Kazim MM. Modern Handball, Skill and Tactical Principles. Baghdad: Al-Tarth; c2017. p. 125.
- Jawad AS, Jassim MH. Scientific Research. 2nd ed. Najaf, Iraq: Dar Al-Diaa for Printing and Design; x2011.
- Dabour Y. Modern Handball. Alexandria: Al-Maaref Press; 1997.
- Al-Khayat DA, Al-Hayali NM. Handball. Mosul: Dar Al-Kutub for Printing and Publishing; c2001.
- Abbal ID, Mahmoud M. Applications of Attack in Handball - Education - Training. 1st ed. Egypt; c2007.
- Jabri AN, Miteb AY. The effect of muscular power and reactive agility exercises on some biomotor abilities for young footballers. Journal of Humanities and Social Sciences Research. 2023, 2(4).
- Jabri AN, Miteb AY. The effect of muscular power and reactive agility exercises on developing response speed, motor coordination, and skill (Reception – pass in multiple directions) for young footballers. Journal of Humanities and Social Sciences Research. 2023, 2(4).
- Abdel-Moati MA. Handball for the Young. Cairo: Al-Amri Press; c1996.
- Al-Waleeli MT. Handball, Learning, Training, Tactics. Kuwait: Al-Salam Printing Press Company; c1989.
- Fathi MS. The effect of using some assistive tools on developing the level of some basic skills in handball. Master's thesis, College of Physical Education for Girls, University of Baghdad; c2000.
- Irahim MJ. Handball for All, Hopeful Training and Skill Excellence. Cairo: Dar Al-Fikr Al-Arabi; c2004.



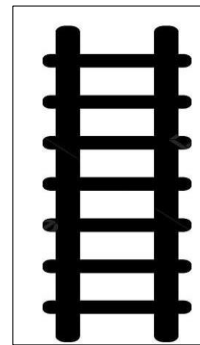
(1) The player stands on the ladder with one foot.



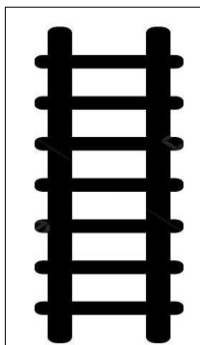
(5) The player stands on the ladder with his feet crossed.



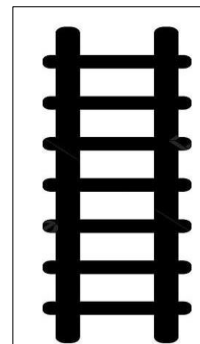
(2) The player stands on the ladder with two feet.



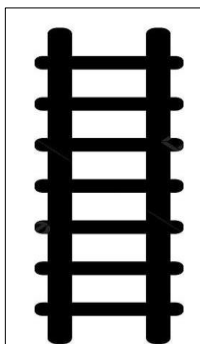
(6) The player moves on the ladder by turning and advancing.



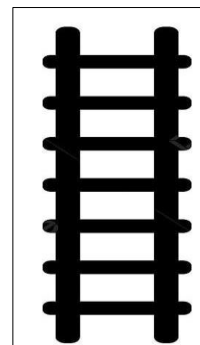
(3) The player stands on the ladder forward and backward.



(7) The player stands on the ladder with his feet crossed.



(4) The player follows the ladder from the side.



(8) The player stands on the ladder with the rope and feet.