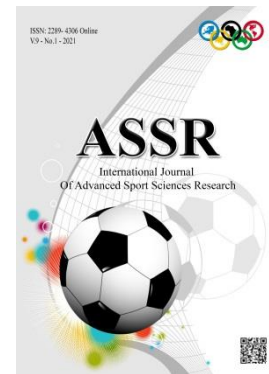


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## "Effect of using dry firing with air pistol: educational program"

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The purpose of the study was to determine the impact of using a dry shooting educational curriculum in learning the skill of throwing with the effectiveness of the air pistol. The researcher utilized the experimental method due to its suitability and the nature of the research. The research sample consisted of twelve (12) young players, divided into six (6) individuals for each of the experimental and control groups. The experimental group employed the academic method of dry shooting, while the control group used the educational method.

Following the pre-test, the sample continued to implement the curriculum units, which lasted four weeks and were divided into four weekly units, each lasting 90 minutes. After completing the instructional units, the researcher conducted a post-test and extracted the data, which was statistically processed, then presented, analyzed, and discussed.

The researcher came to the conclusion that there were significant differences in the results of the two tests (pre and post) for the two groups, as well as differences in the post test results in favor of the experimental group. In light of the findings, the researchers recommended that scientific teaching approach must be adopted and dry shooting should be used in learning the skill of air pistol shooting.

**Keywords:** educational curriculum, dry shooting, air pistol.



## 1.Introduction

The developed world's quick development and success in various fields of life can only be attributed to careful planning and scientific procedures. One of these fields is sports, where achievements in international tournaments for numerous sports, including sports shooting, have improved significantly.

The shooting sport is one of the most popular games in the world. It is one of the Individual Olympic Games that consists of a variety of activities. The 10 meter air pistol is one of these activities, with a number of essential elements (pause, grip, breathing, firing, pulling the trigger, and follow up) that the shooter must learn and master in order to get good results.

The shooting skill with the air pistol characterizes by its difficulty and necessitates of a high level of neuromuscular compatibility and a link between the elements of the skill sequence from the shooter in order to achieve high accuracy in the shooting process. Dry shooting is the act of firing a gun without using any ammunition <sup>(stgJim Owens, p46, 2013)</sup>. Its goal is to keep the shooter focused on the fundamental parts of the shooting process rather than thinking about or focusing on the end of outcome. As a result, dry throwing is particularly beneficial for developing the five main skills <sup>(chen chris 2014,p87)</sup>.

According to the researcher's follow-up to the youth category training in the training center in the province of Babylon, most of the beginners players have a weakness in the consistency of technical performance between the sections of the throwing skill and focus on the location of the throw of the shooting target and a fear of negative results and obtaining unsatisfactory marks. As a result, there is a weakness in the process of linking and coordination between the parts of the air pistol throwing skill. As a result, the researcher decided to use a dry-shooting educational program to teach the skill of air pistol throwing.

### Research objectives:

1. Identifying the differences between the two experimental and control groups' pre and post air pistol shooting accuracy tests.
2. Identifying differences in the post-air pistol shooting accuracy test results between the control and experimental groups.

### 2- Research procedures:

**2-1 Research methodology :** The researcher utilized the experimental method due to its suitability and the nature of the research.

### 2-2 Research community :

The research community was carefully selected among the Al-Mahaweel Club training center. They numbered twelve (12) players. They represent the research community, and the sample was randomly divided into two groups, control and experimental, with six players in each group.

### 2-3-1 Research groups equivalence and homogeneity

### 2-3 The research sample's homogeneity:

The researchers obtained the values of the skewness coefficients for the sample members in the variables (chronological age, weight, and height) in order to validate the homogeneity of the study sample, as shown in table (1) .



**Table (1) Illustrate the homogeneity between research sample.**

N	variables	Units of measurement	Mean	standard deviation	modal	skewness coefficients
1	chronological age	year	16.2	0.78	16	0.40
2	weight	kg	61.2	2.57	59	0.60
3	height	cm	165.2	1.78	165	0.23

Table (1) shows that the skewness coefficient is limited to (+1), indicating that the research sample members are homogeneous in these variables, i.e., their normal distribution is moderated.

### 2-3-2 Research groups equivalence

To confirm the equivalence of the experimental and control groups, the researcher used the (t) test for independent samples to find the difference between the two groups' shooting test results, as shown in Table (2).

**Table (2) shows the equivalence of the experimental and control groups in air pistol shooting accuracy**

Test	Experimental Groups		Control Group		(T) Value	Significance
	M	Std.	M	Std.		
<b>Air Pistol Shooting Accuracy</b>	31.33	2.73	30.16	3.06	0.63	Insignificant

\* Tabular (t) value (2.22) at (10) degree of freedom and (0.05)significance level

From the results in Table (2), we can conclude that the two groups perform similarly in air pistol shooting.

### 2.4 Research tools , methods , and devices

It includes all the means and tools that the researcher uses in each stage of his work. (Sami Muhammad Melhem, p. 147, 2005)

#### 2.4.1 Research methods

The following research methods were used by the researcher:

- 1- Arabic and foreign references
- 2- Statistical means.
- 3- Air pistol shooting accuracy test.
- 4- Observation

#### 2.4.2 Research devices and tools

The following research devices and tools were used by the researcher:

- 1- German type air pistol, numbered (6).
- 2- cartoons goals
- 3- ammunition
- 4- shooting hall.
- 5- Stopwatch



## 2.5 determining the accuracy of the air pistol shooting test

- **The accuracy of the air pistol shooting test** (Isra Hashem Jayan, 2015, p. 118)
- **The test's aim** : is to assess throwing accuracy level.
- **Test tools** : air pistol, numbered (5). , cartoon goals that have been drawn and numbered in accordance with international shooting law.
- **Test explanation**: The shooter stands on the scoring line, facing the goals, holding the weapon and committing to the proper technique position before shooting at the goals.
- **Test recording**: Each shooter is given (10) shots because the scores are calculated using the holes in the goal, and the best shot is (10) points, which is known as the center of the goal, and the lowest value is zero. additionally, the time given for the test is (1,15) M.

## 2-6 Exploratory experience of shooting tests

The exploratory experiment is one of the most significant tools for conducting research, which is defined as "a mini-process carried out by the researcher in order to determine the negatives and positives that may follow implementing the main research experiment," (Nuri Ibrahim Al-Shouk, 2004, p. 89).

On May 7, 2021, at 9 a.m., the researcher conducted a shooting accuracy test with the effectiveness of the air pistol on four players at the Mahaweel Sports Club and at the shooting hall. The experiment's purposes was to :

- 1- determining the appropriate time to conduct shooting accuracy tests.
- 2- Adjust the tools and devices used during the tests.
- 3- Training the assistant work team on how to conduct the tests.

For this experiment, the researcher obtained several results, including:

- 1- Determining the test time and the specified time for the tests.
- 2- Develop treatments for any difficulties that the work team may face while conducting the tests.
- 3- Identifying the safety and security means and tools that are used during the tests.

## 2.7 Research procedures:

### 2.7.1 educational programs:

The educational program was determined for a period of thirty (30) days, divided into four educational units per week, and the work was unified for both the control and experimental groups, with the exception of the use of dry throwing, which was designed only for the experimental group. The educational curriculum was implemented on 7/8/2021, with educational units implemented from (9.30) to (11) in the morning. It is important to note that the educational unit lasts (90) minutes in which the educational program was implemented by the assistant work team under the supervision of the researcher. The educational unit was divided into three sections.

- 1- Preparatory section: (15) minutes, including a general warm-up and a special warm-up to prepare the body for the shooting skill.
- 2- The main section: is divided into:
  - The educational part lasts fifteen minutes and includes a detailed explanation of the skill's components, which are then presented by the trainer.



- The practical part lasts (50) minutes and includes the players applying the skill to the experiment group without using live fire, i.e., dry-throwing for (15) minutes and then shooting for the remaining (35) minutes. Throwing with shots is used for the control group.
- The final section: (10) minutes includes a competition between the players, with (5) shots for each player for suspense and motivation to achieve good results.

### 2.7.2 Pretests

On July 8, 2021, at 9:30 a.m. in the shooting hall of Al-Mahaweel Sports Club, the researcher conducted a pre-test to assess the accuracy of air pistol shooting on the research sample. The researcher was also responsible for supplying all of the necessary tools and test requirements for the shooting .

### 2-7-3 post tests

The researcher conducted the final tests on 7/8/2021 at (9:30) am after completing the application of educational units on members of the control and experimental samples. The researcher was keen to provide the conditions under which the pre-test procedures were carried out in terms of location, time, and tools required for the test.

### 2-8 Statistical means:

The researcher used the Statistical Package for the Social Sciences (SPSS) to process the statistical data for the study. He extracted the following:

- **Arithmetic mean**
- **Standard deviation .**
- **The t-test for the two independent samples.**
- **The t-test of the two correlated samples.**
- **Coefficient of skewness**
- **Mode**

### 3.Discussion ,presentation and analysis of the study

The researcher will present, analyze, and discuss the findings in order to achieve the research's objectives and hypothesis.

#### 3-1 The results of the air pistol shot accuracy test for the experimental and control groups are presented and analyzed:

##### 3-1-1 presenting the results of the air pistol shooting accuracy pre and post tests for the two groups

The arithmetic means, standard deviations, and calculated and tabular (t) values for the two pre-tests are shown in Table No. 3.

Statistical Parameters	Pretest		Post Tests		Calculate d (T) Values	Tabular (T) Values	Statistical Significance
	M	Std.	M	Std.			
<b>Experimental Group</b>	31.33	2.73	66.66	3.55	33.48	2.57	Significant
<b>Control Group</b>	30.16	3.06	58.83	3.43	23.50		Significant

\* tabular (t) values(2.57) at the freedom degree (5) and significant level (0.05)





According to the results of Table (3), the arithmetic mean value for the experimental group in the pre-test was (31.33) degrees with a standard deviation of (2.73), while the arithmetic mean in the post-test was (66.66) degrees with a standard deviation of (3.55). The calculated (t) value was (33.48), which was greater than the tabular value of (2.57) at the degree of freedom (5) and level of significance (0.05), indicating that the result was significant and generally supported the post test. Mostly in control group, the arithmetic mean of the pre-test was (30.16) degrees with a standard deviation of (3.06), while the arithmetic mean of the post-test was (58.83) degrees with a standard deviation of (3.43), and the calculated (t) value was (23.50), which is greater than the tabular value of (2.57) at the degree of freedom (5) and the level of significance (0.05), and the result is in favor of the post.

### 3-2 presenting and analyzing the results of an air pistol shooting accuracy posttest for two experimental and control groups

The arithmetic means, standard deviations, and calculated and tabular (t) values for the two post-tests are shown in Table No. 4.

Test	Experimental Group		Control Group		Calculated(T) Values	Tabular (T) Values	Statistical Significance
	M	Std.	M	Std.			
Shooting Accuracy	66.66	3.55	58.83	3.43	3.55	2.22	Significant

\* **tabular (t) values(2.22) at the freedom degree (10) and significant level (0.05)**

The results of Table (4) show that the experimental group's arithmetic mean value in the post-test reached (66.66) degrees with a standard deviation of (3.55), while the control group's arithmetic mean value reached (58.83) degrees with a standard deviation of (3.43). The t-test was used for the two independent samples based on the reality of these differences, and the results showed that there were significant differences in favor of the experimental group, as the calculated T-value was (3.55), which is greater than its tabular value of (2.22) at the degree of freedom (10) and the level of significance ( 0.05).

### 3-3 Discussion of air pistol shooting accuracy results

By comparing the results in Tables 3 and 4, it was discovered that there were significant differences in effectiveness between the pre and posttests, supporting the post test. The researcher attributes these results to the experimental group's use of dry shooting because this method allows the shooter to focus on the basics of the throwing skill without thinking about the shooting result, which disperses the focus of most shooters. . Dry throwing, especially in the early phases, has a significant impact on matching the performance of the sections of the throwing skill (grip , shooting, and trigger pull). Dry shooting, according to Mike Pannone, minimizes shooter stress and helps with how to conduct an individual competition, which promotes the spirit and teaches shooters how to deal with tension



## **4- Conclusions and Recommendations:**

### **4-1 Conclusions:**

The researcher came to the following conclusions based on the presentation, analysis, and discussion of the findings:

- 1- There are significant differences in air pistol shooting between the pre and posttests, as well as between the experimental and control groups, with the posttest in favor the experimental group.
- 2- Significant differences exist between the experimental and control groups in the post-test air pistol shooting test, supporting the experimental group trained in the self-revision method.
- 3- Dry shooting had a major impact on the experimental study group's ability to learn the usefulness of the air pistol.
- 4- The researcher's program had a positive impact on learning how to shoot using an air pistol.

### **4-2 Recommendations:**

- 1- Dry throwing as a method of learning to shoot with an air pistol, as it lets the learner rely on himself in performance.
- 2- The importance of paying attention to the adoption of dry shooting in learning to shoot with the high air pistol, as well as other shooting activities.
- 3- The need for greater research which serve various unexplored learning approaches to master the skill of air pistol shooting.

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