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The Effect of Information Gap Strategy on Learning Dribbling and Scoring Skills in Football for Students

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ABSTRACT

Importance of the Study:

The significance of this research lies in its rigorous scientific endeavor to utilize the information gap strategy, a form of active learning, which the researchers believe has a positive impact on the acquisition of fundamental soccer skills, including dribbling.

Research Objectives:

This study aims to investigate the effect of the information gap strategy on learning dribbling and shooting skills.

Methodology:

The study sample consisted of first-year students from the College of Physical Education and Sports Sciences at Al Ain University during the first semester of the academic year 2024-2025. The researchers employed an experimental design with two equivalent groups: a control group and an experimental group.

Key Findings:

The primary findings revealed that the experimental group, which implemented the information gap strategy, significantly outperformed the control group, which received traditional instructor-led teaching, in learning dribbling and shooting skills in soccer.

Recommendations:

The researchers recommend conducting further studies that explore the information gap strategy with different samples and at various educational levels not covered in the current study.

Keywords: *Information Gap Strategy, Dribbling and Scoring Skills in Football*

1. INTRODUCTION

1.1 Research Introduction and Significance:

The world has witnessed significant and comprehensive developments and transformations in recent years across all fields of life, particularly in education. The educational process, in all its components (teacher, student, curriculum, and implementation method), has become a central concern for many researchers and those interested in education in general, and for teaching strategies in the field of delivering educational content in physical education and sports science lectures in particular. Educational authorities have consistently sought to develop their educational systems in line with the nature, interests, and capabilities of learners, and in keeping with the demands of the modern era and civilizational progress. Scientific development has introduced many new and effective strategies that contribute to optimizing various aspects of the educational process.

Modern studies and research concerning the components of the educational process have focused on ensuring its success as a primary means of transmitting knowledge to students. This involves moving away from rigid teaching models where students passively receive information and exploring foundations and strategies that emphasize student autonomy in

acquiring experiences within the learning environment. This shifts the focus from the teacher to the student to achieve desired goals. As the teacher is a cornerstone of the educational process, a successful teacher seeks to introduce new strategies tailored to students' abilities and understanding, enhancing the activities within the curriculum. They recognize the interaction between strategy, method, and tool.

Active learning is a teaching approach that relies on self-directed activity and active student participation. Among active learning strategies that stimulate student engagement is the information gap strategy, which is based on the principle of student integration. In this strategy, students work in groups to complete information or activities provided by the teacher. Furthermore, the information gap refers to a gap or void in the knowledge presented to students, requiring them to think critically to find the information by presenting the learning content in two different formats that converge in substance. Each group studies the topic in one of these formats, ensuring all students cover the material but through different approaches. The teacher's adoption of thought-provoking teaching strategies influences the learning process, increases student motivation to seek useful information, and improves memory by receiving new information and recalling existing information, thereby developing cognitive processes that make students aware of their knowledge, capable of understanding, and reflective. Attention to the affective dimension is also crucial, as it impacts students' personal abilities, readiness, effort, perseverance, and responsibility. Therefore, the researchers believe it is essential to focus on and enhance students' scientific sense by employing modern teaching strategies and methods that enrich their learning environment, improve their knowledge and mental activities, and achieve practical educational goals.

The significance of this research lies in the researchers' attempt to utilize the information gap strategy to achieve educational objectives by testing it at the elementary level to explore its benefits in teaching football dribbling skills to students

2. RESEARCH PROBLEM

Mastering the basic skills of football is the cornerstone of achieving the goals of the educational situation in football lectures at colleges of physical education and sports sciences. Since the situation is built on educational, behavioral, and learning objectives, and to ensure that students acquire these skills effectively, the teacher (instructor) must find a form of teaching different from what they continuously present and rely on. This is because many instructors may not pay attention to the topics of active learning strategies and their impact on making the student the focus of the educational process. From the foregoing, the research problem is crystallized in several directions: there is a disparity, with varying percentages, in the levels of learning the football dribbling skill among students, which may be due to the lack of use of such strategies, the lack of significant student engagement in the educational situation, weak motivation during learning the dribbling skill in football lectures during educational units, weak critical thinking, and the inability to self-discover pivotal and subsidiary errors during learning those skills. In order to reach better levels, the researchers decided to employ the information gap strategy in learning the football dribbling skill as an experimental attempt to identify the impact and effectiveness of this strategy.

2.1 Research Objectives

1. Preparing teaching units according to the information gap strategy in learning the (dribbling, trapping) skills in football for students.
2. Identifying the effect of the information gap strategy and the method used in learning the (dribbling, trapping) skills in football for students.
3. Identifying the differences between the results of the post-tests between the control and experimental groups in learning the (dribbling, trapping) skills in football for students.

2.2 Research Hypotheses

1. There are statistically significant differences between the pre-tests and post-tests between the experimental and control groups in favor of the post-tests.
2. There are statistically significant differences between the results of the post-tests for the control and experimental groups in favor of the experimental group.

2.3 Research Areas

1. 5.1 Human Field: Students of the Department of Physical Education and Sports Sciences / Al-Ain National University, first stage for the academic year 2024/2025.
2. 5.2 Time Field: 10/10/2024 – 20/3/2025.
3. 5.3 Spatial Field: Football field at the College of Physical Education and Sports Sciences, Al-Ain National University.

2.4 Definition of Terms

Information Gap Strategy: "It is one of the active learning strategies based on the principle of integration, where students are

divided into pairs or groups of four, and each student completes what the other student lacks in information"[1].

3. RESEARCH METHODOLOGY AND FIELD PROCEDURES:

3.1 Research Methodology

The research population was defined as the first-year students of the morning study program in the Department of Physical Education and Sports Sciences at Al-Ain University for the academic year (2024/2025), totaling (164) students distributed across three sections (A, B, C). The sample is "the part that represents the original population on which the researcher conducts the entirety and focus of their work"[2]. A sample for constructing the learning engagement scale was randomly selected, consisting of (80) students from sections (A, B, C), representing (48.78%) of the research population. The application sample was selected from the first-year students (morning study) in the Department of Physical Education and Sports Sciences at Al-Ain University, consisting of (40) students, representing (24.39%) of the research population, with (20) students from each of two sections. Randomly, using a lottery method, section (B) was chosen as the control group, implementing the strategy followed by the subject teacher in learning some basic football skills, and section (C) as the experimental group, implementing the information gap strategy in learning some basic football skills.

Pilot studies were also conducted on a group from the research population, excluding the main research sample, consisting of (20) students. The researchers excluded a number of sample members who were failing, injured, frequently absent, and older students, totaling (24) students, representing (14.634%), in addition to excluding the pilot study sample of (20) students from section (A), representing (12.195%). Tables (1, 2) illustrate this.

Table (1) hows Sample Homogeneity in Variables (Age, Height, Mass).

Variables	*Measurement Unit*	*Mean ($\bar{X}$)*	*Standard Deviation (SD)*	*Coefficient of Variation (%)*	*Skewness Coefficient*
Age	*Year*	*22.325*	*22.000*	*1.899*	*0.171*
Height	*Cm*	*161.500*	*160.00*	*5.579*	*0.268*
Mass	*Kg*	*67.650*	*67.00*	*8.859*	*0.113*

*From Table 1, it is evident that all skewness coefficient values fall between (± 3), indicating sample homogeneity in the variables.

Table (2) Shows Equivalence of Research Groups in Learning the Football Dribbling Skill for Students.

Statistical Treatments	*Control Group*	*Experimental Group*	*Calculated t-value*	*sig. value*	*Statistical Significance*
Variables	*Measurement Unit*	*($\bar{X}$)*	*SD*	*($\bar{X}$)*	*SD*
Dribbling	*Seconds*	*13.463*	*1.224*	*13.257*	*1.686*
Goal Scoring	*Degree*	*6.55*	*1.638*	*6.05*	*1.395*

*Significant at significance level < (0.05).

It is evident from Table (2) that the calculated (t) value for all research variables is at a significance level greater than (0.05), indicating no significant differences, which demonstrates the equivalence of the research groups in the research variables.

3.2 Data Collection Tools:

3-2-1 Data Collection Methods:

Arabic and foreign sources – personal interviews – tests and measurements – questionnaire.

3-2-2 Tools and Equipment Used:

[1]- Ambo Saidi, Abdullah bin Khamis and Huda bint Ali Al-Hosniah (2016): Active Learning Strategies 180 Strategies with Applied Examples, Dar Al-Masirah for Publishing, Distribution and Printing, Amman - Jordan, p.p 43.

[2]- Zuhair Al-Khashab et al: Football,2nd ed., Iraq, University of Mosul, 1999.

Office supplies, measuring tape, medical scale, whistle, legal footballs, colored tape, cones.

3.3 Determining the Basic Football Skill for Students and Identifying the Specific Test Under Study:

Basic football skills were determined according to the curriculum items approved by the Department of Physical Education and Sports Sciences at Al-Ain University. The basic skills are dribbling and goal scoring. The research required conducting specific tests for the skill under study, which were selected and presented to a number of experts, receiving 100% approval. However, the researchers conducted a pilot study on a sample from outside the research sample and from the original population, consisting of (15) students from the first-year students.

3.4 Test Specifications:

First: Dribbling Skill Test:

Test Name: Dribbling the ball between five cones back and forth for a distance of (27) meters [3].

Test Objective: Measure dribbling skill.

Tools Used: Legal football, measuring tape, stopwatch, five cones.

Test Procedures:

- Planning the test area.
- The player stands with the ball behind the starting line, with the distance between each cone being (2.70) meters and the total distance being (27) meters back and forth. When the start signal is given, the player runs with the ball between the five cones back and forth as shown in Figure (1).
- Each player is given two consecutive attempts.

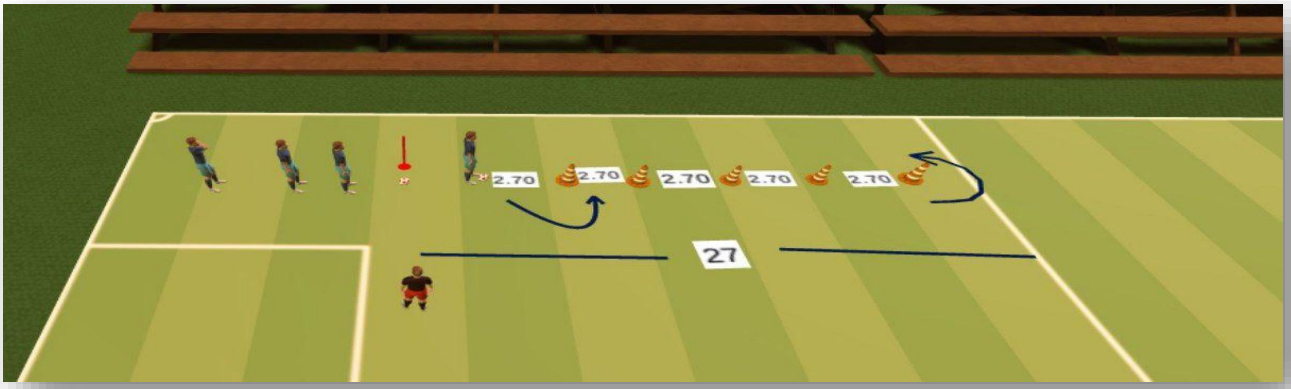

Figure (1) Dribbling the ball between five cones back and forth for a distance of (27) meters.

Test Conditions:

- The tester must start dribbling from behind the starting line upon hearing the start signal.
- The tester must cross the finish line with the ball.
- The tester is free to use either foot in dribbling and any part of the foot.

Scoring:

The player's score is the average total time taken by the player to perform the two attempts.

Number of Attempts: The tester has two attempts, with the best attempt being counted.

Second: Goal Scoring Test:

[3]- Emad Kadhim Al-Atwani :The Effect of a Proposed Training Program on Developing the Scoring Skill) Master's thesis, College of Physical Education, University of Baghdad, 1999.

Test Name: Static goal scoring test towards the divided goal [4].

Test Objective: Measure the accuracy of shooting the ball towards the goal.

Tools Used: Legal footballs (5), rope to divide the goal, measuring tape, football goal, football field.

Test Procedures: The balls are placed on the penalty area line in different locations as shown in Figure (2).

Figure (2) Static goal scoring test towards the divided goal.

The goal is divided into nine sections using rope.

Test Description: The player stands behind the penalty area line with the balls, facing the goal. Upon the start signal, the player kicks the ball towards the goal to enter the squares drawn in the goal, then moves to the second ball, and so on.

Scoring: Scores are calculated by the total points the player gets from shooting the five balls towards the goal as follows:

- (5) points for square number (4).
- (4) points for square number (5).
- (3) points for square number (2).
- (2) points for square number (3).
- (1) point for square number (1).
- Zero points if the ball goes out of the goal.

Note: If the ball hits the rope, the player gets the higher score.

3.5 Field Research Procedures:

3-5-1 Pre-Tests:

The researchers conducted the pre-tests on Sunday, December 8, 2024, on the experimental group sample, which works according to the information gap strategy, and the control group, which works according to the method followed by the subject teacher.

Stages of Implementing the Educational Curriculum:

The researchers explained how to implement the experimental group's information gap strategy and how to divide the experimental group members, totaling (20) students, into two groups, each consisting of (10) students, to form (10) pairs.

The physical education teacher (*) in the department implemented the educational units after understanding the research objectives and how each group (pairs) works, under the direct supervision of the researchers. The main experiment began on Monday, December 23, 2024, and ended on Monday, February 3, 2025.

The number of educational units during the educational curriculum was (12) educational units for both research groups, with two educational units on Tuesdays and Wednesdays of the week. The experimental group applied the educational units according to the information gap strategy, while the control group applied the educational units according to the method

[4]- Haider Abdul Razzaq Kadhim Al-Abadi :Fundamentals of Scientific Research Writing in Physical Education and Sports Sciences, 1st ed., Iraq, Basra, Al-Ghadir Printing and Publishing Company, 2015.

*- Asst. Prof. Hazem Maan Abd Ali / Ph.D. in Physical Education and Sports Sciences.

followed by the subject teacher. The time of the educational unit was (90) minutes. Table (3) shows the details and sections of the educational unit for both research groups.

Table (3) Shows the Sections, Details, and Time of the Educational Units for Each Research Group

Educational Unit Sections	*Time During Unit*	*Number of Educational Units*	*Total Time*	*Percentage*
Preparatory Section	*Introduction and Warm-up 7min*	*12*	*180 min*	*16,66%*
	Physical Exercises 8 min	*12*		
Main Section	*Educational Activity 20 min*	*12*	*120 min*	*22,22%*
	Application Activity 45min	*12*	*540min*	*50%*
The final section	*10 min*	*12*	*120 min*	*11,11%*
Total	*90min*	*12*	*1080 min*	*100%*

The educational unit for the experimental group included the following:

1- Preparatory Section: Lasted (15) minutes, and included administrative aspects (attendance registration and preparation of tools), and giving some exercises to prepare the body parts for the requirements of the main section (general and specific warm-up).

Main Section: Lasted (70) minutes, aimed at learning some basic football skills under study, and consisted of two parts:

Educational Activity: Lasted (20) minutes.

1- Preparation Stage (Identifying the Information Gap): (10 minutes) In this stage, the teacher analyzes the students' current knowledge about the dribbling skill by asking some questions before starting to explain the skill and present it in various ways. The teacher analyzes the gap between the students' current and previous knowledge and the educational goals set by him through their answers to these questions, and then presents the skill to them and explains it after determining the level of their information gap:

- Can you describe the steps of performing the dribbling skill?
- What is your mental image of the dribbling skill?
- Do you feel you need help in any part of this skill?
- How do you feel about working with your classmates to exchange information about the dribbling skill?
- The teacher's role in this stage is to activate information and encourage students towards learning, and his questions are in aspects of identifying their information gap in order to determine their level of knowledge, encourage dialogue to activate active learning, assess gaps, and enhance cooperation among them.

2- Information Distribution, Communication, and Exchange Stage: (10 minutes) The teacher asks the students to form cooperative groups in the form of pairs, and each two students form a pair, and each group of students consists of a set of pairs (10 pairs) working together. The teacher distributes cards according to their levels and abilities through the analysis he reached by identifying their information gap. That is, the information is not given completely about the dribbling skill to be learned for each card, but a gap of information remains absent from student A and present with student B, and vice versa. These groups can be homogeneous (same level) or heterogeneous (different levels) depending on the objective of the activity. Students are distributed in pairs to enhance cooperation and active learning among them, where students learn from each other and provide each other with support through the correct information contained in the distributed cards. The teacher distributes cards to each pair, where each card contains different information about the dribbling skill, and asks them to review it. After distributing the cards to the students among them through the pairs formed within the groups, the student pairs begin to exchange information among them. The students exchange the information on their cards. Student A explains to student B the steps of performing the dribbling skill, and he does not know its common mistakes and how to avoid them when performing the dribbling skill, and student B explains to student A the common mistakes, and he does not know the steps of the technical performance completely. This exchange between pairs indicates the process of sharing information and experiences between students, which enhances active learning and the exchange of ideas in a critical direction, which leads to the students' engagement in learning the dribbling skill and trying to encompass the missing information gap and focus on the information related to the skill to be learned.

b- Application Activity: Lasted (50) minutes.

1- Task Completion Stage: (45 minutes) The objective of this stage is the practical implementation of the information gap strategy by exchanging information between students about the steps of performing the dribbling skill and the common mistakes. The teacher directs them to perform a specific task related to applying what they have learned. Each pair performs a set of exercises where student A performs an exercise that contributes to teaching the dribbling skill while student B observes his colleague's performance and provides feedback based on what he has learned. Then they exchange roles, with one being the performer and the other being the observer and corrector, with the cards remaining with them to refer to and record all their observations upon completion of the performance about what they have learned during the implementation of the skill, including what they have succeeded in and what they need to improve.

2- Evaluation and Discussion Stage: (5 minutes) In this stage, after completing the implementation of the application activities to learn the dribbling skill, the teacher gathers the students in a circle or group to discuss the results and then evaluate to enhance the collective understanding of the topic. After completing the implementation of the practical activities and discussion, the teacher evaluates the extent to which the educational goals set at the beginning of the lesson have been achieved. This stage is an opportunity for students to express their opinions, share what they have learned, and provide constructive feedback to each other. He uses evaluation tools such as checklists or short questionnaires to determine the mastery of the skill. The teacher encourages students to provide feedback to each other, which enhances active cooperative learning among them.

3- Closing Section: Lasted (10) minutes, in which relaxation and calming exercises or a small game are given and the return to the normal state.

2-6-3 Post-Tests:

The post-tests were conducted on Sunday, February 5, 2025. The researchers were keen to ensure that the conditions were similar to the pre-tests, and the same steps were used in the pre-test.

7-2 Statistical Methods:

The researchers utilized the Statistical Package for the Social Sciences (SPSS) software to extract statistical results.

4. RESULTS PRESENTATION, ANALYSIS, AND DISCUSSION:

4.1 Results Presentation and Analysis for the Experimental and Control Groups:

Table (4) Shows the Arithmetic Means, Standard Deviations, Standard Error, and (t) Value Between the Pre-Test and Post-Test Evaluations in the Research Variables for the Control Group Sample.

Variables	*Measurement Unit*	*Pre-Tests*		*Post-Tests*		*Calculated t-value*	*Significance*
		Mean ($\bar{X}$)	*±SD*	*Mean ($\bar{X}$)*	*±SD*		
Dribbling	*Seconds*	*14.635*	*1.404*	*14.099*	*1.062*	*2.947*	*0,008*
Scoring	*Score*	*6.05*	*1.395*	*8.45*	*1.276*	*11.414*	*0,000*

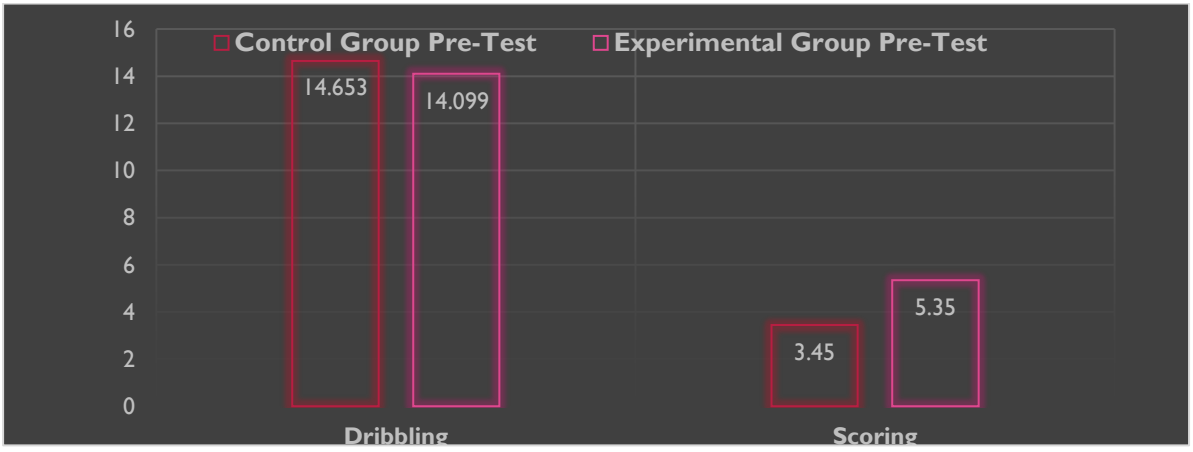

Table (4) shows the arithmetic means, standard deviations, and the calculated (t) value between the results of the

pre-tests and post-tests in learning engagement and some basic football skills (dribbling, scoring) for the control group. The results presented in the table indicate that the calculated significance level in learning engagement and all skill tests is less than the significance level (0.05), indicating statistically significant differences between the pre-tests and post-tests, in favor of the post-tests. Figure (3) illustrates this.

4.2 Presentation and Analysis of Post-Test Results for Skill Tests (Dribbling, Scoring) for the Control and Experimental Groups in the Post-Test Evaluation:

Table (5) Shows the Arithmetic Means, Standard Deviations, and Calculated (t) Value Between the Post-Test Skill Tests for the Control and Experimental Groups and Their Analysis.

Variables	Measurement Unit	Control Group		Experimental Group		Calculated t-value	*Significance*
		Mean ($\bar{X}$)	±SD	Mean ($\bar{X}$)	±SD		
Dribbling	**Seconds**	**13.308**	**1.418**	**14.099**	**1.062**	**3.362**	**0,003**
Scoring	**Score**	**10.90**	**1.714**	**8.45**	**1.276**	**12.352**	**0,000**

*Significant at significance level < (0.05).

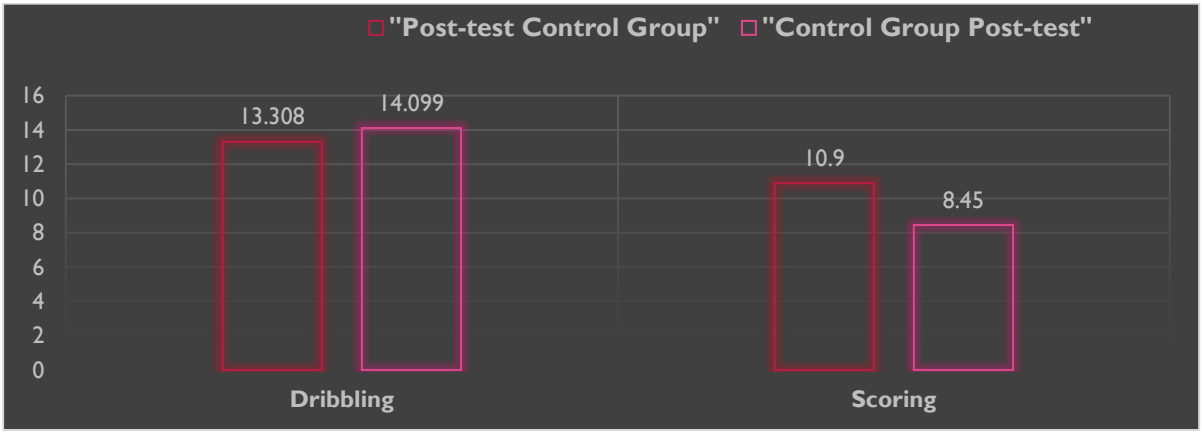

Table (5) shows the arithmetic means, standard deviations, and the calculated (t) value between the results of the post-tests in learning engagement and some basic football skills for the control and experimental groups. The results presented in the table indicate that the calculated significance level in learning engagement and all skill tests is less than the significance level (0.05), indicating statistically significant differences between the post-tests for the two groups, in favor of the experimental group. By presenting and analyzing the post-test results in learning engagement and tests of some basic football skills under study for the control and experimental groups in Table (5), it is evident that there are statistically significant differences between the post-test results, in favor of the experimental group. Figure (4) illustrates this.

Figure (4) Illustrates the Arithmetic Mean Values of the Post-Tests for the Experimental and Control Groups in Some Basic Football Skills.

5. DISCUSSION OF RESULTS

The data in table 4 shows that the control group had a statistically significant difference in the post test regarding dribbling and scoring, meaning that even without the experimental treatment, the control group still improved, this might be due to the fact that just practicing the skills during the pre-test and post-test caused improvement.

However, table 5 shows that the experimental group improved significantly more than the control group in both dribbling and scoring, meaning that the experimental treatment had a positive effect on the experimental group. It is important to note that the English translation maintains the structure and content of the original Arabic text while adhering to the conventions of scientific writing. "The researchers found that the information gap strategy led to the experimental group outperforming the control group, as evidenced by statistical data. This strategy contributed to improving the teaching of football skills by making students capable of critical thinking, as it prompts them to analyze situations, identify missing information, and propose solutions. It also enhances active learning by encouraging students to participate effectively in the learning process rather than passively receiving information. Furthermore, it develops problem-solving skills by enabling students to handle complex situations and make appropriate decisions under pressure. A key element of this strategy is increasing student motivation, which fosters a sense of need for knowledge, driving students to research and learn, thereby improving performance. The overall structure of this strategy also contributes to enhancing collaboration; when students work together

to fill information gaps, they learn from each other and build collaborative skills, leading to the experimental group's superiority in learning and developing the targeted skills."[5]

6. CONCLUSIONS AND RECOMMENDATIONS:

6.1 Conclusions

1. The experimental group, which utilized the information gap strategy, outperformed the control group in learning the football rolling skill.
2. Learning through the information gap strategy effectively captured the learners' attention throughout the strategy's phases.
3. The educational units designed according to the information gap strategy fostered student autonomy through the strategy's various stages.

6.2 Recommendations

1. It is essential to employ the information gap strategy in teaching certain fundamental football skills.
2. Active learning strategies, including the information gap strategy, should be adopted in teaching basic football skills.

Instructors should be encouraged to diversify their teaching methods, techniques, and strategies to enhance learning speed and effectiveness

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[5] https://talmnsht.com/file/7/

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