

Realistic Model-Based Learning and Motor Satisfaction in Futsal Skills: Pembelajaran Berbasis Model Realistis dan Kepuasan Motorik dalam Keterampilan Futsal

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Background: Developing motor coordination and sensory perception is essential for skill mastery in youth soccer. **Specific Background:** Traditional training often isolates technical skills without integrating perception and coordination. **Knowledge Gap:** Limited studies have examined the holistic educational programs targeting these three dimensions simultaneously. **Aims:** This study aimed to determine the effectiveness of an educational program in developing motor coordination, sensory perception, and scoring accuracy among youth soccer players. **Results:** The findings revealed significant improvement in all three variables for the experimental group compared to the control group, confirming the program's efficiency. **Novelty:** The study introduces an integrated training approach combining motor and sensory learning principles. **Implications:** These results suggest that structured educational programs can enhance both physiological and perceptual components in young athletes, supporting comprehensive motor development in soccer.

Highlights:

- Integrated educational training improved coordination and scoring accuracy.
- Sensory perception development contributed to performance precision.
- Supports holistic training in youth soccer programs.

Keywords: Motor Coordination, Sensory Perception, Scoring Accuracy, Educational Program, Youth Soccer

Introduction

Football is one of the most widely played and popular team sports worldwide and is distinguished by a variety of key abilities, including mental, motor, physical, and technical skills. These abilities play a crucial role in achieving optimal performance, particularly among young players. Over time, the level of performance, technical proficiency, and the precision of football skills have advanced considerably, with scoring recognized as one of the most critical skills.

This development requires players and coaches, within the educational and training process, to give careful attention—prior to and during training—to the abilities and prerequisites that foster the continuous improvement of motor capacities, including sensory perception. Sensory perception, due to its essential role, influences how a player interacts with the ball or teammates during practice and with opponents during competition. It also determines a player's awareness of the strength, timing, and execution of skills, as well as the accuracy of motor coordination. Moreover, football demands the ability to adapt to numerous dynamic game situations, which must be addressed with sound judgment and rapid decision-making. This requires players to possess sensory perception, so that motor coordination and sensory-motor perception play an effective role in the correct application of

the skill in its various parts. Because sensation and perception are based on experience, the accumulation and increase of information through practical application and theoretical knowledge,

which leads to the avoidance of non-external stimuli unrelated to the stimulus required to perform the skill, and the achievement of good mechanical coordination, which enables the player to achieve optimal performance in the skill of scoring. [1]Therefore, the importance of research into the use of the educational program and its piloting at the Al-Khornaq Sports Club for youth football players is highlighted, and to determine its impact through the development of motor coordination, sensory perception, and scoring accuracy, which is essential when performing football.

Research Problem

Through the researcher's experience and observations in football, he found a clear importance in studying the levels of motor coordination and sensory perception and their relationship to scoring accuracy among youth football players at Al-Khornaq Club. There is a lack of interest in this approach by coaches in using educational methods, which affects the way young players perform their scoring skills. These methods work to develop this skill by developing the abilities under study. Most of the skill exercises used may be limited to these methods, and their implementation is almost conventional, which weakens the desired benefit in developing and enhancing the player's motor coordination and sense of the ball, as well as his awareness of the surrounding situation during performance. This results in a weakness in the player's motor coordination in all parts of the skill, along with a lack of excitement and motivation towards the training process, which is reflected in performance during competition, where scoring is considered one of the most important goals and is the deciding factor in determining results during competitions. The basis of the study's idea is to highlight educational methods and their importance and incorporate them into the training process, given their significant impact and clear importance on players, especially those who play in competitions. In the youth category, it develops the accuracy of the scoring skill, which improves motor coordination and sensory-motor perception, which positively reflects on skill performance.

Research Objectives:

1. To develop an educational program to develop motor coordination, sensory perception, and scoring accuracy in football among the youth of Al-Khornaq Sports Club.
2. To identify the impact of the educational program on developing motor coordination, sensory perception, and scoring accuracy in football among the research sample.

Research Hypothesis:

- There are statistically significant differences in the educational program for developing motor coordination, sensory perception, and scoring accuracy in football among the youth of Al-Khornaq Sports Club.

Research Areas:

- Human Area: (27) Al-Khornaq Club youth football players.
- Time Area: From May 20, 2024 to November 31, 2024.
- Spatial Area: Al-Khornaq Sports Club.

Method

"The researcher adopted the experimental approach with a design of (two equivalent groups) to suit the nature of the research problem".

Research Community and Sample:

"The research community consists of a group of (27) youth football players from Al-Khornaq Sports Club. The research sample consisted of (20) players, who were randomly selected and divided equally into two groups: a control group and an experimental group. Thus, the percentage of the research sample was (74%).

"Sample Homogeneity and Equivalence of the Two Research Groups:

1. Sample Homogeneity:

The researcher performed homogeneity testing on the sample participants with respect to the variables of age, height, and weight in order to control these factors and minimize their potential influence on the study variables, as presented in Table (1).

Table 1. shows the mean, standard deviation, mode, and skewness coefficient to illustrate the homogeneity of the research sample

Variable	Mean	SD	Mode	Skewness
Chronological age/year	17.56	1.54	15	0.79
Height/cm	167.81	4	166	0.86
Weight/kg	68.6	3	67	0.54

"From the results of Table (1), the value of the skewness coefficient was between (± 1), indicating the absence of defects in the distributions and their normality, which indicates the homogeneity of the research sample."

Equivalence of the two research groups:

Before beginning "the application of the experiment in the research, the researcher conducted equivalence between the two research groups on some of the tests under study".

Table 2. The table presents the mean, standard deviation, and the calculated t-test results comparing the control and experimental groups

Variables	Control groups		Experimental groups		T calculated	Significance
	Mean	SD	Mean	SD		
Running with the ball test (10) m	1.940	0.190	1.89	0.186	0.21	Not Sig.
Running (20) m with the ball while standing	3.333	0.180	3.47	0.166	1.13	Not Sig.
Running (30 m / 10 m) timed with the ball	1.437	0.144	1.388	0.227	0.51	Not Sig.
Running (20 m) changing direction with the ball	4.293	0,364	4.22	0.440	0.221	Not Sig.
Scoring accuracy	4.5	1.4	4.41	1.42	4.55	Not Sig.

"At a significance level of (0.05) and a degree of freedom = $n_1 + n_2 - 2 = 10 + 10 - 2 = 18$ ".

Table 3. Sequence of steps followed in the research

Group	The first step	Step 2: Independent Variable	Step 3	Step 4
Control	Pre-tests	The trainer's educational approach	Control	Pre-tests
Experimental		The researcher's educational approach using the educational tools under study		

Devices and Tools

The researcher employed multiple research methods, including the use of Arab and international references, standardized tests, measurement techniques, direct observation, structured interviews, and questionnaires.

The tools and devices were as follows: (a football field, adhesive tape, a measuring tape, (20) legal footballs, (20) signs, (15) flags, (2) stopwatches, (4) ropes, (4) laser discs, a laptop, a Chinese-made weighing device, a handheld electronic calculator, and a camera).

Defining Research Variables:

1. Educational Methods:

"After reviewing scientific sources and research related to learning, football, and sports training, the following were selected:"

First: Non-motion display methods: (still images, sequential images, video, model displays, and computers) as a visual effect to achieve the research objectives.

Second: Methods through movement performance:[2]

- Colored circles on a smooth wall: These are colored circles of different sizes drawn on the wall. The player performs scoring exercises with both feet in different directions and distances, working to place the ball in them. Their primary function is to perceive the scoring distance and motor coordination between the feet and the eye.
- Rings of various sizes and heights: These are several rings of different sizes and heights (1/1.5/2/2.5). "The player performs scoring exercises from different distances, directions, and times." Their function is to sense the ball, perceive the scoring distance, and develop accuracy.
- Ladder: This is a ladder composed of a set of ropes in the shape of a ladder. The player performs exercises using leg movements without touching the ropes. The primary goal of scoring between these ropes is to understand the horizontal distance between the ladders and to develop motor coordination between the legs and eyes.

- **Wooden Bar:** This is a device composed of a wooden board supported by two iron poles of varying heights (0.2 m, 0.3 m, 0.4 m). The player performs scoring exercises after jumping from it. Its primary function is to develop motor coordination and the ability to score in various positions by jumping in front of this bar, as well as to improve scoring proficiency and accuracy.
- **Ropes:** These are regular ropes of varying heights. The player jumps over them and performs exercises between them. Their primary function, through jumping, is to develop and enhance motor coordination between the legs and eyes while scoring.

The primary goal of using these tools is to develop motor coordination, sensory perception, and scoring accuracy with a soccer ball, in a manner that is appropriate for the sample. The reason for choosing the scoring skill is the desire and love of competition in learning and increasing scoring, as well as determining the results with this skill under study. This stimulates the desire to learn, which prompted the researcher to conduct this test for this skill, for example, the team's top scorer.

2. Ball Coordination Tests[2]

3. 10m Standing Ball Run Test:[2]

Test Name: 10m Standing Ball Run Test.

- **Objective of the Test:** To measure transitional speed with the tool.
- **Tools and Resources:** A football field marked with a distance of 10m, indicating the start and finish lines, a timer, a whistle, flags, markers, and a soccer ball.
- **Performance method:** The player stands behind the starting line from a standing position with the ball. Upon hearing the start signal, the player runs as fast as possible, provided that the player touches the ball three times and remains with it until he crosses the finish line, as shown in Figure (1), with the ball in his possession.
- **Recording method:** The player records the time he covered a distance of 10 meters with the ball. The player is given one attempt.

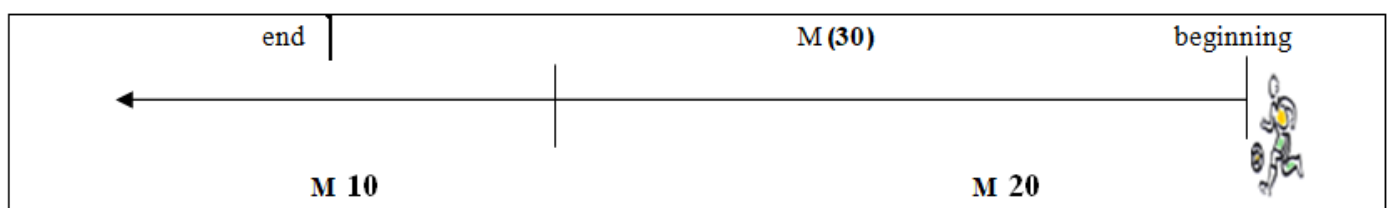


Figure 1. Running with a Ball (10) m

Running with a Ball from Standing:

Test Name: Running with a Ball from Standing.

- **Objective of the Test:** To measure the acceleration of soccer players.
- **Equipment and Resources:** The same equipment used in the Running with a Ball from Standing Test.
- **Method of Performance:** The same method used in the Running with a Ball from Standing Test, except that the player touches the ball at least three times.

- Recording Method: The player's time is recorded for covering the 20 m distance, as shown in Figure (2).

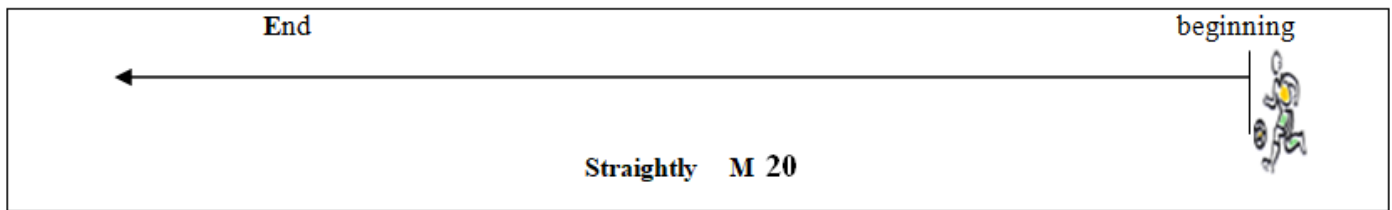


Figure 2. 20m straight ball sprint test

30m/10m timed ball test[3]

- Test name: 30m maximum speed test (10m timed ball).
- Test objective: Measure maximum speed with the device.
- Equipment and resources: The same equipment used in the 20m standing sprint test see Figure (3) with the player having a ball.
- Performance method: 20m sprint test method
- Recording method: The player's time-out for the last 10 meters is recorded.
- The player is given one attempt, as in Figure (3).

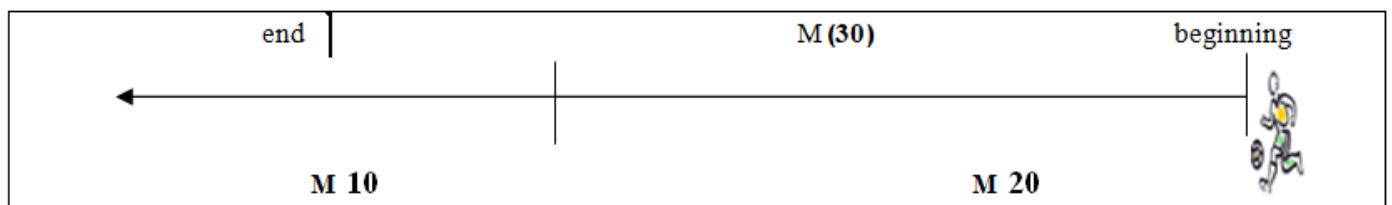


Figure 3. 30m 10m Ball Test

20m Ball Change of Direction Test[4]

- Test Name: 20m Ball Change of Direction Run
- Test Objective: To measure agility with the ball.
- Equipment and Abilities: A football field marked with a 20m distance, divided into four sections, each five meters long, with a marker (see Figure (4)). A ball is also available.
- Performance Method: "The player stands behind the starting line from a standing position with the ball. Upon hearing the start signal, the player zigzags between the markers as fast as possible until they reach the finish line".
- Recording Method: The player records the time it takes to cover the 20m change of direction.
- The player is given one distance, as shown in Figure (4).

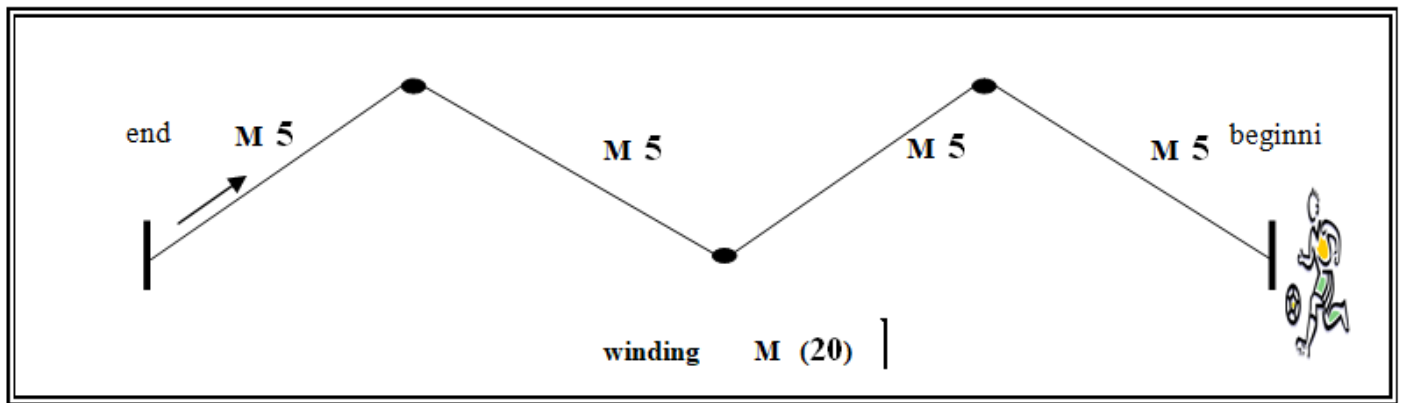


Figure 4. Running with the ball for a distance of (20) m, changing direction

Scoring accuracy test on a goal divided into squares .[5]

- Test objective: To measure scoring accuracy.
- Equipment used:
 1. A football field.
 2. A tape to mark the scoring area for the test. (5) footballs are placed in specific locations in the penalty area, as shown in the figure.
- Performance description: The player stands behind ball number (1), and when the starting signal is given, he kicks the ball into the goal with his front foot, inside, or outside. He then repeats the scoring with ball number (2), and so on until he finishes with ball number (5). The player takes the appropriate amount of time to execute the goal.
- Scoring: The score is calculated by the sum of the scores the player gets from scoring the five balls, so that each time he gets the score specified in each area to which the ball goes, provided that the division lines are counted within the highest-scoring area, and it is taken into account that scoring outside the goal boundaries is a score of zero, as in Figure(5).

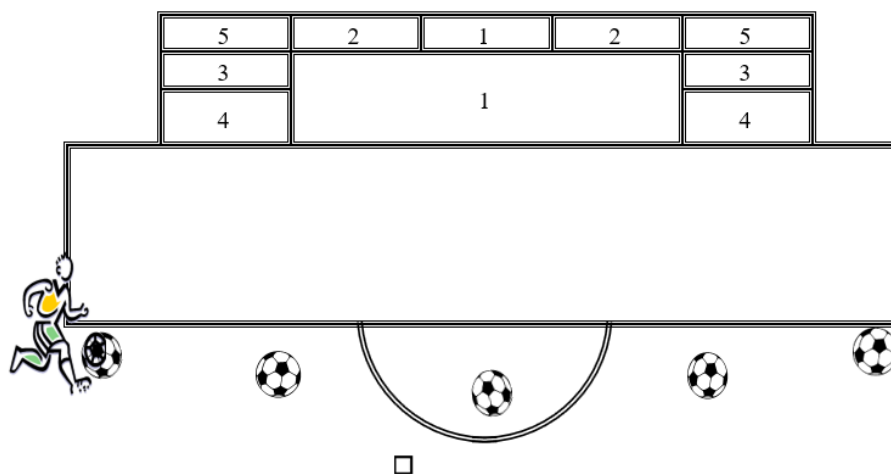


Figure 5. illustrates scoring on a goal divided into squares.

Field Research Procedures

1. Pre-tests:

Pre-tests were conducted for the research sample, the experimental and control groups, on Friday and Saturday, June 7-8, 2024, at Al-Khornaq Club Stadium, with the assistance of the support team.

2. Implementation of Training Materials

- The experimental group underwent the educational curriculum prepared by the researcher, using educational materials to implement and apply skill and motor exercises. The researcher's role was to supervise and follow up on the field implementation of all components of the educational units without the intervention of the trainer.
- The control group underwent training under the supervision of the trainer, using the established method.
- The educational curriculum was (8) weeks, with three educational units per week, totaling (24) units.
- The duration of each educational unit was (50) minutes. Total curriculum time (1200) minutes (Appendix 1) Some unit exercises.
- The unit exercises were conducted on Wednesday, Friday, and Sunday. The first was on June 19, 2024, and the last on August 11, 2024.

3. Post-tests:

Post-tests were conducted for the control and experimental groups under the same conditions as the pre-tests. These post-tests were conducted on Wednesday and Thursday, August 14-15, 2024.

Statistical Methods: The statistical methods included the following:

- Mean.
- Standard deviation.
- Skewness coefficient.
- Simple correlation coefficient (Pearson).
- Two-way analysis of variance with interaction.
- T-tests (for related and equal-numbered samples) and T-tests (for unrelated and equal-numbered samples).

Result & Discussion

Presentation and discussion of the results of the pre- and post-tests and the post-tests for the 10m ball test for the control and experimental samples:

Table 3. shows the means, standard deviations, and calculated and tabulated t-values for the pre- and post-tests for the 10m standing ball run test

Run 10 m standing with the ball	Pretest		Posttest		(t) value				Post * Post		Calculated	Result	development
	Mean	Sd	Mean	Sd	Calculated	Tabulated	Sig.	development	Mean	Sd	3.78	Sig.	21.4%
Control	1.940	0.190	1.382	0.125	12.81	2.101	Sig.	18.4%	1.382	0.125			
Experimental	1.889	0.192	1.243	0.082	20.51		Sig.	34.2%	1.243	0.082			

The degree of freedom between the pre-test and post-test = (9) and between the post-test and post-test = (18) is less than the significance threshold of 0.05.

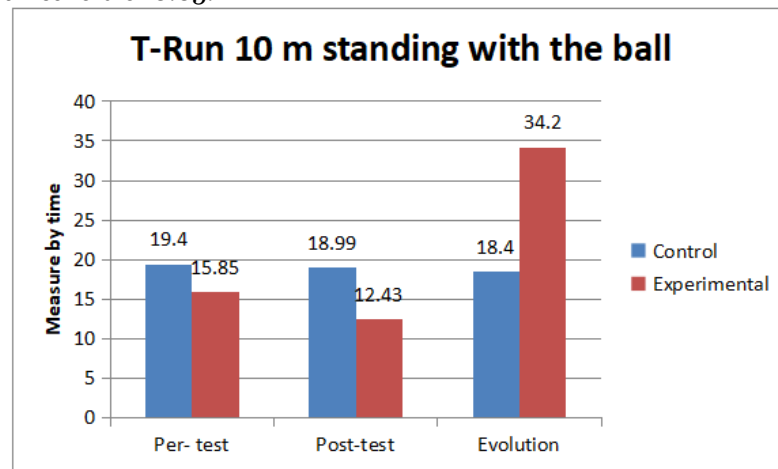


Figure 6. shows the significant differences running 10 m standing with the ball

Discussion: 10 m running while standing with the ball:

From Table (3), it becomes clear to us that the researcher attributes the development of the post-test results at the expense of the pre-test for the control sample to the commitment and discipline of the sample members in continuing to play in all training units and the regularity of its members in performing the exercises and repetitions set by the team coach. This has an impact on the abilities and capabilities of the players in the control group, as this commitment and continuity in performance played an effective role in developing and improving performance, which is reflected in the amount of "significant differences between the pre- and post-tests, in favor of the post-test. The significance of the significant differences was a sign of this development and progress achieved in the test (10 m running while standing with the ball), as the many repetitions that the player practices during practical application help in acquiring and developing performance."6 The researcher attributes the development achieved in the experimental group to the effectiveness of the educational methods used in the educational curriculum and applied to the research sample members (the young players in the experimental group), including (still pictures - pictures The series - video - model presentation) and the actual performance with increased speed of the ball had a clear impact on the research sample, as it is clear to benefit from the development and growth of motor coordination during the performance of the skill through educational means that reflect the value of increasing this development and growth in performance, which has a clear impact through the development of motor paths, as its development is within the increase in the repetition of the skill and the increase in sensory perception, which in turn has a basic positive impact on this performance, which was reflected in the amount of significance of the differences between the post-test of the control and experimental sample in favor of the experimental group, as this significance clarifies the

effectiveness of the educational curriculum prepared by the researcher through the application of exercises with a number of repetitions and included within it the educational means that had the main role in the significant differences of the experimental group. Here, it must be noted that there is sufficient scope for teaching and improving motor coordination and sensory perception through the use of educational means in educational units in a manner that is compatible with the players' capabilities in developing their awareness of distance, time or place within the field, as the development and growth of motor coordination among individuals This group has a clear impact on developing technical performance and its accuracy, because "the beauty and development of performance depend on the development of cognitive processes as a result of players undergoing exercises using training methods that help develop these abilities. This leads to the development of their sense of the ball due to the strength of neural processes, resulting in increased awareness of the external environment".[7]

- **Presentation and discussion of the pre-test and post-test results, as well as the post-test comparisons, for the 20-meter dribbling (running with the ball) test conducted on both the control and experimental groups.**

Table 4. shows the means, standard deviations, and the calculated and tabulated t-values for the pre- and post-tests for the 20m running with the ball test (standing)

Run 20m with the ball standing	Pretest		Posttest		(t) value				Post * Post		Calculated	Result	development
	Mea n	Sd	Mea n	Sd	Calculated	Tabulated	Sig.	development	Mea n	Sd	5.29	Sig.	15.36%
Control	3.33	0.18	3.01	0.17	11.29	2.10	Sig.	9.54	3.01	0.17			
Experiment al	3.12	0.17	2.55	0.14	13.22		Sig.	18.3	2.55	0.14			
	3	0	5	6				%	5	6			
	4	6	2	6				%	2	6			

"Below the significance level of 0.05 and the degree of freedom between the pre-test and post-test = (9) and between the post-test and post-test = (18)"

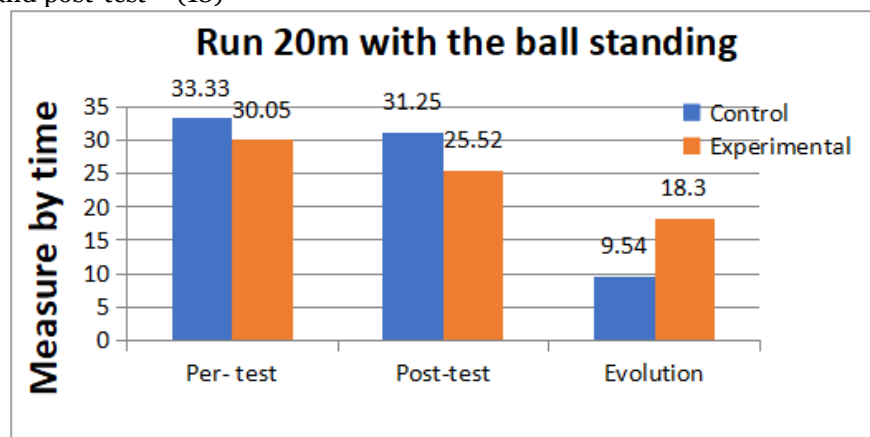


Figure 7. shows the significant differences 20m running with the ball standing

Discussion:

The results of Table (4) indicate the presence of significant differences between the pre- and post-tests of the control sample, in favor of the post-test. "The researcher attributes this to what was mentioned in the discussion of Table (3) regarding the occurrence of significant differences for the control sample in favor of the post-test. Upon observing Table(4), the results indicate significant differences in the post-test of the control sample and between the experimental research group. The significant differences were in favor of the experimental group." The researcher attributes this superiority to the influence of the results on educational methods, including (still images - sequential images - video - model presentation), which contributed, when included, to the educational curriculum prepared for the members of the experimental group by the researcher. Their contribution was to the development and enhancement of sensory perception, which led in a distinct way to the player's success in his skill performance, as "sensory-motor perception leads the athlete to success in his movements, and gives the ability to discover new tactics,

and the ability to coordinate movement".[8] Likewise, sensory "perception has a direct impact on the development and enhancement of performance. Skill and accuracy and acquisition of new skills, as well as playing situations, especially when scoring in training and competition," which requires the sense of touch and sight and coordination between them, as we get an automatic coordination that is trimmed of all errors in the stages of performing the skill and in a very good way. "This is reflected in the results of the significant differences for the experimental group, as some internal sensations, for example, direction, distance, sensation, time, or all of them together or more than any other sense, have a clear impact on the required skill performance, and this provided the players of the experimental group with broad horizons in realizing the widest and largest group of variables surrounding the performance and focusing on it".[9]

- **Presentation and discussion of the results of the pre- and post-tests and the post-tests for the 30m/10m timed running test with the ball for the control and experimental groups:**

Table 5. shows the means, standard deviations, and calculated and tabulated t-values for the pre- and post-tests with the ball for the (30m/10m timed running) test for the control and experimental groups

30m run/10m timed with ball	Pretest		Posttest		(t) value				Post * Post		Calculated	Result	development t
	Mea n	Sd	Mea n	Sd	Calculated	Tabulated	Sig.	development	Mea n	Sd	6.1 2	Sig.	18.4%
Control	1.43 7	0.14 4	1.29 1	0.62	10.64	2.10 1	Sig.	14.16	1.17 1	0.62			
Experiment al	1.42 2	0.13 6	1.00 9	0.41	13.91		Sig.	29.5	1.08 9	0.41			

"Below the significance level of 0.05 and the degree of freedom between the pre-test and post-test = (9) and between the post-test and post-test = (18)".

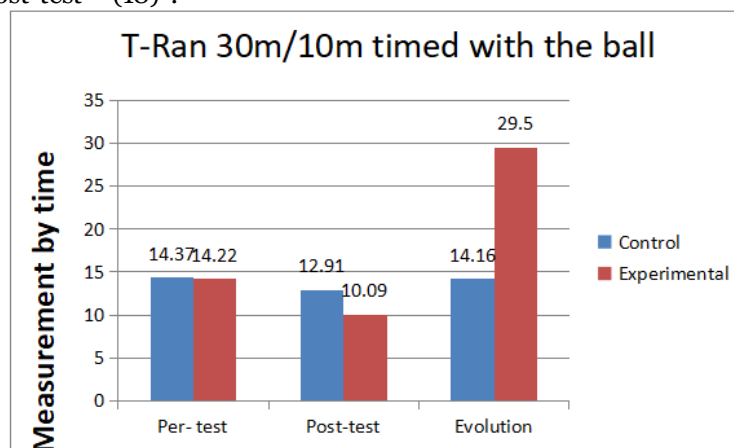


Figure 8. shows the significant differences 30m/10m timed running with the balls

Discussion: Test (30m/10m Timed Ball Run)

The results that showed the significant significance of the pre- and post-tests for the control group in favor of the post-test in Table (5) were explained, as in the discussion of the significant differences for the post-test for this group in Table (3). The results that appeared in the above table for the significant differences between the post-test for the control group and the post-test for the experimental group in favor of the experimental group indicate the clear development and advancement of the players in the experimental group in the test (30m/10m Timed Ball Run), indicating the development of motor coordination and a sense of the ball in a distinct manner. This is what the educational methods used by the researcher in the educational curriculum worked on to develop and enhance motor coordination through it, which is greatly linked to the skill performance of young players in football and to many motor abilities and capabilities such as speed, agility, balance, and accuracy, such that there is a close connection in all of these capabilities in terms of the motor paths represented by the method of performance. The three skill sections (preparatory, main and final) result in a high and harmonious motor coordination and reach the automatic stage in performance, as "the connection between coordination and speed appears in the requirements of motor performance from a temporal perspective, and agility, balance and precision appear in the requirements of movement from a formal and spatial perspective, i.e. moving the body and its parts with the required precision during space".[10]

- **Presentation and discussion of the results of the pre- and post-tests and post- and post-tests for the test (running 20 m with changing direction) for the control and experimental samples:**

Table 6. shows the means, standard deviations, and calculated and tabulated t-values for the pre- and post-tests with the ball for the test (running 20 m with changing direction)

Run 20m changing direction with the ball	Pretest		Posttest		(t) value				Post * Post		Calculated	Result	development
	Mea n	Sd	Mea n	Sd	Calculated	Tabulated	Sig.	development	Mea n	Sd	4.7 6	Sig.	15.4
Control	4.29 3	0,36 4	3.77 5	0,25 6	9.33	2.10 1	Sig.	12.1	3.77 5	0,25 6			
Experiment al	4.12 4	0.39 6	2.98 5	0.19 5	9.08		Sig.	27.6	2.98 5	0.19 5			

"Below the significance level of 0.05 and the degree of freedom between the pre-test and post-test = (9) and between the post-test and post-test = (18)".

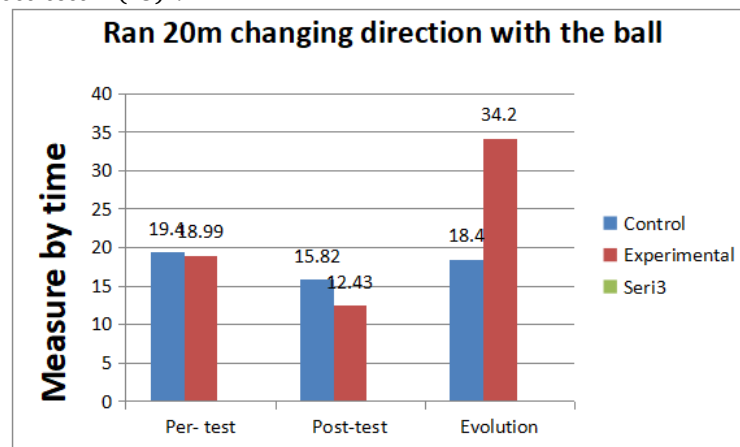


Figure 9. shows the significant differences 20m running, changing direction with the ball

Discussion: Test (20m Run, Change of Direction with the Ball)

The results that showed the significant significance of "the pre- and post-tests for the control group in favor of the post-test in Table (5) were explained, as in the discussion of the significant differences for the post-test for this group in Table (3). The results shown in the table above indicate the significant differences between the post-test for the control group and the post-test for the experimental group in favor of the experimental group, as skill performance is reflected through the development of the motor coordination state and the amount of sensory perception of the player during performance,"¹⁰ whether training or competition, in a manner consistent with the skill performance of the soccer player, especially the youth among them, as in the research sample. Thus, the training curriculum included the development of motor coordination and sensory perception in the players' (experimental group) handling of the ball, and the identification of how to utilize the educational methods used in the educational curriculum prepared by the researcher and applied among the members of the experimental group, which had a clear impact on the development and improvement of performance and speed in movements related to rolling the ball. This is particularly true in terms of coordination and sensory perception during performance in educational exercises and post-tests, which is consistent with the adaptation achieved in the development of learning this skill within the limits of the three skill categories and its rapid use in the playing conditions of competition and training. That is, whenever the nature of performance is linked to speed and accuracy, the final result of applying the skill will be effective, distinctive, and always successful, as "the development of absolute speed, with its specificity, is linked to the nature of performance. A person cannot perform a specific movement at high speed at the same time as performing another movement linked to the first movement. However, despite this, speed can be linked when performing another movement (such as dribbling) to motor frequency and stride length, which motivates the player to maintain what he has previously achieved. Performance here requires the development of transitional speed, as it is one of the factors that help the player apply certain football skills, such as scoring, handling, etc."¹⁰ This is indicative of the results derived from the application of the educational curriculum to the members of the experimental group for the research. The method of the educational curriculum used to develop motor coordination and sensory perception of the ball had the greatest impact on developing the performance of these young players. These individuals had They adapted to the correct technical positions for performance and achieved the highest possible speed by running with the ball in the correct manner, serving the purpose of this performance. Some scholars have emphasized that achieving speed in football performance is due to "the development of the physical and motor

abilities resulting from the player's correct performance, which plays a role in transferring movement from one skill to another as quickly as possible, within the desired goal of this movement." [11]

- **Presentation and discussion of the results of the pre- and post-tests and the post-tests for the "scoring accuracy" test for the control and experimental samples:**

Table 7. shows the means, standard deviations, and calculated and tabulated t-values for the pre- and post-tests with the ball for the "scoring accuracy" test for the control and experimental groups

Scoring accuracy	Pretest		Posttest		(t) value				Post * Post		Calculated	Result	development
	Mean	Sd	Mean	Sd	Calculated	Tabulated	Sig.	development	Mean	Sd	4.86	Sig.	16%
Control	0.54	0.94	5	0.86	3.702	2.10	Sig.	11.1	5	0.86			
Experimental	4.324	0.83	5.5	0.66	656.5		Sig.	27.2	66.0	0.66			

"Below the significance level of 0.05 and the degree of freedom between the pre-test and post-test = (9) and between the post-test and post-test = (18)".

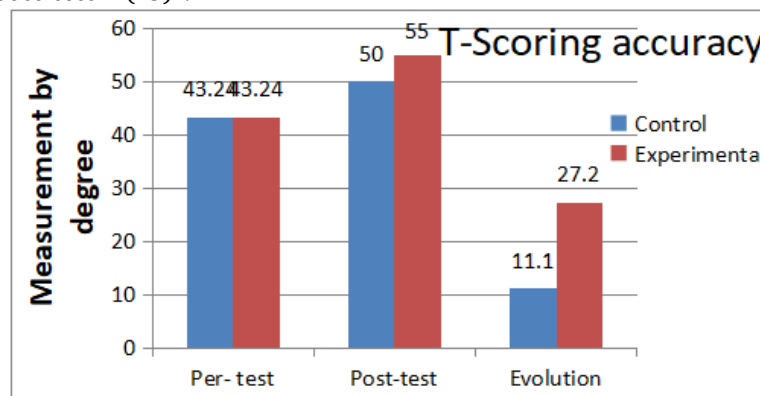


Figure 10. shows the significant differences scoring accuracy

Discussion: Scoring Accuracy Test

By observing Table (7), we can see the significance of the differences in all tests. The researcher attributes the reasons for these differences, in favor of the control group tests, between the pre- and post-tests to the continued performance of the control group under the supervision and follow-up of the team coach, and the frequent increase in performance repetitions within the educational units applied by its members. The post-tests were used to develop and advance the experimental research sample members. This was due to the use of educational exercises with special tools, which were appropriate for learning this skill by the training staff, as they were included in repetitions within the educational unit and in accordance with the capabilities and abilities of the young players (the research sample members). Here, the role of educational methods is highlighted through the development of the experimental group and its superiority over the control group, as "the use of fixed or moving visual educational methods during or outside of educational units has a positive impact on the development of the level and performance of all skills" [12], in addition to removing difficulties in the skill sections "when performing these skills, and the possibility of developing them among young players". [12] due to the number of repetitions in performing them, and correcting errors in performing the scoring skill within its parts in the movement that The development of motor coordination among players, as the results of the (post) test showed no significant differences, because "wrong scoring is not always linked to wrong tactics, and perhaps the player's personal attitude is the contributing and important factor, especially when the player emphasizes strength before accuracy" [13], and the directions, guidance and instructions given to the learner (the player) are received by the members of the research sample, which is the distinctive element in the performance style. In addition to the interaction and positive enthusiasm among the members of the group, it also creates in everyone a feeling of active and effective participation in the learning process, which leads to an increase and increase in motivation among the learning players, which is among the most important reasons for increasing the percentage in the learning process, which distances them from being only receivers of information. In these results of soccer scoring accuracy, we find that the experimental group had a clear superiority because scoring is one of the motor skills that require great accuracy in the stages of learning and training, as its performance requires high coordination from the mental, motor and sensory aspects, as well as neuromuscular coordination and extreme accuracy in order to have a direct impact on deciding the results and winning in all competitions. Here, the role of

The educational methods used were clearly demonstrated in the high-precision performance of the players in this experimental group, as precision is "an important requirement upon which victory depends. It is the desired goal in performance to score points. If the final outcome of fast, strong performance is measured, we find it useless if it lacks precision".[13] This is what the researcher argued to achieve his hypotheses.

If we achieve positive results in the learning process in developing and enhancing motor coordination and the skill level in the players' performance, by organizing the process of repeating the exercise and addressing errors in performance, then "organized, scientifically studied training has a significant impact on test results" [14]. Achieving an organized educational process must be in accordance with an organized and studied approach to yield its desired results, as it is "that ongoing, organized process that provides the individual with the knowledge, skill, ability, ideas, and opinions necessary to perform a specific task or achieve a specific goal. Furthermore, it is a method for achieving organizational goals and adapting to the work and the specific information, skills, or mental attitudes provided to the individual, from an organizational perspective, to achieve the institution's goals".[15]

Conclusion

1. The findings revealed a positive effect between the pre-test and post-test results of both the control and experimental groups, with clear superiority in the post-test scores, reflecting an enhancement in skill performance—particularly in scoring accuracy.
2. Noticeable development and improvement in motor coordination and sensory perception were observed as a result of applying the instructional curriculum and introducing the educational tools designed for the experimental group. The statistical analysis showed significant differences between the post-test outcomes of the control and experimental groups, in favor of the experimental group, confirming the effectiveness of the curriculum and the researcher-prepared educational tools.
3. The data further indicated differences in the influence of motor coordination and sensory perception on the level of skill performance in scoring accuracy during the post-tests, with the advantage clearly leaning toward the experimental group.
4. The results obtained from the skill tests used as indicators of motor coordination and sensory perception demonstrated a direct positive impact on scoring accuracy. These outcomes confirm that the instructional program and the specialized educational tools employed in the experimental group's training sessions contributed to a measurable improvement in scoring accuracy. This improvement reflects enhanced player performance in the coordination and sensory perception tests, which in turn reinforced the accuracy of their scoring skills.

Recommendations:

1. The necessity of incorporating educational tools into the curricula used by Al-Khornaq Sports Club in youth football to develop and enhance their motor coordination and sensory perception, which will positively impact all skills in general and the level of scoring accuracy in particular.
2. Focus on the educational curricula specific to motor coordination and sensory perception for football players in youth training sessions, and work on ways to develop them.
3. Conducting studies and research on different age groups and both genders in football and other sports (team and individual).

References

- [1] A. A. Fattah and A. N. Sayed, *Physiology of Physical Fitness*, 1st ed. Cairo: Dar Al-Fikr Al-Arabi, 1993.
- [2] T. A. Mahmoud, *The Effect of Using Some Static Images on Achieving the Educational Goals of the Shot Put Competition for the Deaf and Mute*, Ph.D. Thesis, Alexandria Univ., 2000.
- [3] C. Hughes, *Soccer: Tactics and Skills*, trans. M. Al-Mawla. Baghdad: Higher Education Press, 1990.
- [4] H. M. Mokhtar, *Football for Juniors*, 1st ed. Cairo: Dar Al-Fikr Al-Arabi, 1980.
- [5] A. F. Ali, *The Effect of Using Knowledge-Based Systems in Symbolic Model Programs to Learn Offensive Skills in Fencing*, Ph.D. Thesis, Univ. of Baghdad, 2000.
- [6] Q. H. Hussein, *Comprehensive Encyclopedia of Sports and Physical Education*. Amman: Dar Al-Fikr for Printing, 1998.
- [7] K. J. Al-Rubadi, *Sports Training for the 21st Century*. Amman: Univ. of Jordan Press, 2001.
- [8] Iraqi National Olympic Committee, *Preparation of the Young Player*, trans. A. A. Wahab. Baghdad: Dar Al-Salam Press, 1976.
- [9] M. A. Nassif, *A Proposed Training Program to Develop Physical Qualities in Cooper Tests for Football Referees*, Master's Thesis, Univ. of Baghdad, 2000.
- [10] M. H. Allawi et al., *Psychological Preparation in Handball*, 1st ed. Cairo: Markaz Al-Kitab for Publishing, 2003.
- [11] M. H. Allawi et al., *Educational Sports Psychology*. Cairo: Dar Al-Fikr Al-Arabi, 1995.

- [12] M. S. Hassanein and H. A. Moneim, *Scientific Foundations of Volleyball and Methods of Measurement and Evaluation*, 1st ed. Cairo: Markaz Al-Kitab for Publishing, 1997.
- [13] M. I. Hamad, *New Approaches to Skill and Tactical Preparation of Football Players*. Cairo: Dar Al-Fikr Al-Arabi, 1994.
- [14] The Football Association, FA Official Website, accessed 2025.
- [15] M. Svensson and B. Drust, "Testing Soccer Players," *Journal of Sports Sciences*, vol. 23, no. 6, pp. 601–618, 2005.
- [16] P. B. Raven, L. R. Gettman, M. L. Pollock, and K. H. Cooper, "A Physiological Evaluation of Professional Soccer Players," *British Journal of Sports Medicine*, vol. 10, no. 4, pp. 209–216, 1976