

Methodology for physical and tactical preparation of soccer players before competition.

" A field study of the 17-year-old youth category for the first division regional
championship" BH

منهجية الإعداد البدني و التكتيكي للاعبي كرة القدم قبل المنافسة.
"دراسة ميدانية لفئة الناشئين أقل من 17 سنة للبطولة الجهوية".

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Abstract: This study aimed to determine the methodology of physical and tactical preparation for youth football players from a regional league team in the pre-competition phase. The study adopted the experimental approach as it aligns with the subject matter, and the researcher used a battery of tests applied to 25 youth players at the regional level. The obtained results indicated that: There are statistically significant differences between the pre-tests and post-tests for the experimental sample, which are in favor of the post-tests at 19 degrees of freedom (df=19) and a significance level of 0.01. The consistent trend of the test results reflects the positive impact and effectiveness of the proposed training program compared to the control and experimental groups in developing and improving the physical and tactical aspects of youth players.

Keywords: Physical preparation methodology, Tactical preparation, Football (soccer), Pre-competition phase.

الملخص:

هدفت هذه الدراسة الى معرفة منهجية الإعداد البدني و التكتيكي للاعبي كرة القدم قبل المنافسة لدى لاعبي كرة القدم الناشئين في فريق من البطولة الجهوية ، واعتمدت الدراسة على المنهج التجريبي كونه يتلاءم مع موضوع الدراسة، واستخدم الباحث بطارية اختبار طبقت على 25 لاعب ناشئ في مستوى الجهوي، وقد أوضحت النتائج المتوصل إليها أن:

- هناك فروق معنوية ذات دلالة احصائية بين الاختبارات القبليّة والاختبارات البعدية للعينة التجريبية وهي لصالح الاختبارات البعدية عند درجة حرية 19 ومستوى الدلالة 0.01.

- تطابق اتجاه النتائج لاختبارات يعكس مدى تأثير الايجابي للبرنامج التدريبي المقترح وفعاليته مقارنة مع العينة الضابطة والعينة التجريبية في تنمية وتطوير الجانب البدني والتكتيكي للاعبين الناشئين.
- يوجد اختلاف في ديناميكية نشاط الأداء المهاري بعد تطبيق البرنامج التدريبي المقترح لصالح المجموعة التجريبية.
- الكلمات الدالة: منهجية الإعداد البدني، الإعداد التكتيكي، لعبة كرة القدم، مرحلة ما قبل المنافسة.

Introduction and problematic of the study :

Physical and tactical preparation are two complementary aspects that cannot be separated, as the absence of one or both prevents the athlete from utilizing their full potential in the service of football (soccer). The success of most football coaches in pioneering countries in the field of modern training is attributed to effectively guiding the players' motor performance during the match, in addition to focusing on physical preparation, which varies according to age. Consequently, specialization is essential during this process, taking into account scientific data and methodological principles, especially the physiological laws of growth at each age stage. This specialization ensures the players' mastery of motor skills and the consistency and stability of their performance level, alongside a high degree of development in the physical fitness components: endurance, strength, speed, resistance (stamina), flexibility, agility, and particularly, the quality of speed-strength (power).

One of the key requirements for developing and advancing the level of both the players and the team is systematic planning, which must be based on the individual player's characteristics, age, and stage of growth/development.

The Research Problem:

Given the importance of planning and the necessity of physical preparation in football, particularly when geared toward developing physical qualities (strength, endurance, speed, flexibility, and agility), which are considered essential and necessary physical attributes for football players (**Bernard.t, 1998:27**).

Furthermore, according to Thamir Muhsin (1976), these qualities constitute one of the important foundations upon which the success of general tactics relies. Although these elements can theoretically be separated, in the scientific field, they are viewed as a homogenous unit where each component complements, influences, and is influenced by the others. However, the quality of integration of all five attributes may not be found among many players (**Al-Khouli, undated**) .

In accordance with the annual training program, we find that developing the level of these components is the main factor in advancing the athletic level and the level of sports competence. Here, it must be noted that the success of the physical and tactical preparation process is closely linked to the descriptive and experimental tests performed on the football player. These tests are considered one of the factors used in the evaluation and monitoring process, through which the player's status can be assessed objectively. The goal of this evaluation is to

identify strengths and weaknesses, thereby determining the player's position relative to the objectives set in the training process.

Based on the exploratory study, we posed the question that defines the subject of our problematic:

What is the methodology of physical and tactical preparation in the pre-competition phase for youth football players?

The Sub-Questions:

- 1.What are the reasons for the ineffectiveness in executing physical and tactical performance among youth football players?
- 2.What is the effect of the physical and tactical preparation methodology on football players during the match?
3. Is there a difference in the effectiveness of executing physical and tactical performance between teams that follow programs based on scientific principles and teams that follow random programs?

The General Hypothesis:

"Systematic (or Scientific) planning contributes to achieving tactical and physical maturity among youth football players."

The Partial Hypotheses:

The main and fundamental reasons for the absence of a methodology for physical and tactical preparation are attributed to the following:

- 1.Coaches' lack of scientific foundations in the field of modern training, which is due to:
 - Relying only on former players in the youth training process.

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-The absence of clear programs that align with the demands of the game and the characteristics of the age group .

-The proposed model intended for the research sample allows for the development of players' physical and tactical level.

2 .The proposed model positively contributed to improving physical and tactical performance during the match.

3. There is a difference in the effectiveness of executing physical and tactical performance between teams that follow programs based on scientific principles and teams that follow random programs, with the proposed (scientific) approach favoring the experimental group .

Study Objectives:

This research aims to conduct a field study to determine the correct methodology for physical and tactical preparation of football players in the pre-competition phase.

The specific research objectives are:

1. To attempt to improve the players' physical and tactical performance during the match .

2. To work in a scientific and systematic manner that enables the identification of shortcomings and how to develop them .

3. To reinforce the concept of working scientifically through continuous training and moving away from arbitrary methods.

Research Significance: The significance of this research is confined to:

1 -Attempting to propose both theoretical and practical recommendations.

2-Identifying the foundations of sound competition planning.

3-Studying the characteristics of physical and tactical performance for the junior category (youth/adolescents) .

4-Conducting tests that serve as a valuable indicator to determine the role of the proposed methodology in improving the physical and tactical aspects of football (soccer) players .

Keywords in the Study:

Physical Preparation Methodology : In its simplest form, this refers to the exercises given to players with the aim of helping them acquire the highest possible level in the essential physical fitness elements necessary for the game.

(Sayed, 1996:337)

Operational Definition: a philosophy based on developing physical attributes, grounded in scientific principles

Football Game :a competitive game between two teams, each consisting of 11 players, played with a spherical ball, where the purpose is solely for the ball to cross the goal line. (Bernard.t, 1998)

Operational Definition: The practice of a collective sports activity between two teams, using a spherical ball on a field of specified dimensions, where the objective of the activity is to get the ball into the opponent's goal.

Tactical Preparation: The process aimed at developing the players' strategic abilities by teaching them how to act and respond in various game situations.

(Bouchanaq: 2022, 45)

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Pre-Competition Phase: The phase that precedes the start of the competitive season, which aims to develop physical, technical (skill-based), and tactical fitness. (Zarqani, 2011: 112)

Similar Studies: The similar studies are essential for addressing the research problem and understanding its surrounding dimensions, while benefiting from them to guide the research process. A deep and critical review of previous studies can significantly enhance the researcher's work efficiency.

Researchers: Dr. Sarbout Abdelmalek, Dr. Bouchaada Yacine, Dr. Attab Brahim

Study Subject (Title): The Effectiveness of Physical and Technical Preparation on the Athletic Performance of Football Players During the Competition Phase for the U17–U19 Youth Category. A Field Study at "The Sports Union of Boumedfaa Municipality."

Study Objective: This study aims to identify the effectiveness of physical and technical preparation on athletic performance in football and its impact on enhancing the level of skill execution. The study was limited to the youth category (U17-U19) as this group possesses a distinctive advantage compared to other age categories. It is considered the most crucial phase where the player can easily and flexibly control and master movements, making this stage the most important in a football player's career in terms of learning and skill acquisition.

Researchers: Haddadi Tayeb, Mohamed Younes (2018)

Study Subject (Title): Physical Fitness and its Relationship to Tactical Commitment among Football Players. A Field Study on Selected Teams in the Algerian Professional Football League One - Senior Category.

Study Objectives:

To identify the relationship between the quality of Muscular Strength and tactical commitment among the study sample .

To identify the relationship between the quality of Speed and tactical commitment among the study sample .

To identify the relationship between the quality of Endurance and tactical commitment among the study sample.

To identify the relationship between the quality of Agility and tactical commitment among the study sample.

To identify the relationship between the quality of Flexibility and tactical commitment among the study sample .

Study Problem: Is there a statistically significant correlational relationship between physical fitness and tactical commitment among players of the Professional League One?

Methodology: The Descriptive Approach .

Tools Used: Physical Condition and Tactical Commitment scales

Keywords: Elements of Physical Fitness, Tactical Commitment, Professional Football Player.

2- Previous studies which have dealt with the subject, through a brief and balanced review of the published studies previously linked to the subject.

3- Ask the study problem and partial questions, as well as the hypotheses, objectives and importance of the study.

The practical chapter:

Exploratory Study: It involved identifying the appropriate tests for measuring certain physical and tactical qualities, as well as determining the sports equipment required to conduct these tests, in addition to preparing the administrative documents necessary to allow us to perform the tests.

Research Tools: In this research, we utilized various tools that helped us employ the available means to reach a solution for the study problem, and we employed several methods to reveal the aspects of the study, which are:

Personal Interviews: Personal interviews helped us obtain various information that serves the research. This was naturally represented by field visits conducted by the researcher to several teams in order to meet with some coaches to understand the surrounding working conditions that might be a cause of failure or not reaching the desired goals.

Field Tests: We relied on standardized test batteries that measure the physical and technical aspects of football players. These were presented and discussed with specialized experts in the field of sports training, who approved them and they will be presented later. They were standardized based on the scientific foundations of testing. A training program was developed on scientific foundations in the field of sports training in football, where objectives and duties were set, and the content and means of implementation were determined, through which the basic components of the program could be executed within its general framework.

Physical Test Specifications:

Navette Test:

Objective of the Test: To measure the Maximal Aerobic Speed (VMA) and estimate the Maximal Oxygen Consumption VO₂Max .

Equipment: Measuring tape, an audio recording device (containing warning signals/Beeps), and cones to mark the distance .

Setup :

- A distance of 20meters is precisely marked between two parallel lines
- The players stand behind the starting line.

Execution :

- Players begin running back and forth between the two lines when an audio signal (the whistle/beep) is sounded .
- The player must reach the opposite line at the exact moment the next audio signal is sounded.
- The required running speed gradually increases (usually every minute) as the test "levels" progress.
- The player continues running, attempting to adapt to the increasing pace.

Stopping (Termination):

The test ends when the player fails to reach one of the lines at the scheduled time (the sound of the whistle) for two consecutive times.

Result: The player's result is recorded by the Level (Level) and the number of Shuttles (Shuttles) successfully completed before stopping. This result is used to calculate their Maximal Aerobic Speed (VMA).

Throwing/Kicking the Ball for Maximum Distance Test:

Objective of the Test: The test aims to measure the maximum distance a player can achieve by kicking the ball from the ground for the longest possible distance, as well as assessing the ability and accuracy of long passes.

Test Description: The player stands behind the starting line and advances/runs for 5 meters to strike the ball with their preferred foot for the maximum possible distance. This distance is recorded from the starting point up to the level of the ball's landing point. Each player is given 3 attempts, and the best result is recorded.

Akramov Ball Test: Purpose of the Test: To measure the anaerobic power and capacity of a football player .

Equipment: Ball, stopwatch, five cones, a flat court/field, and a whistle .

Evaluation: The time taken to complete the exercise (in seconds) shall be recorded. Two attempts are permitted, and the best time will be officially recorded .

Methodology: Given the nature of this study, the experimental approach was employed, as it is considered one of the most reliable methodologies for yielding accurate results. This approach is highly compatible with the research problem and its objectives, ensuring results characterized by a high degree of objectivity .

Research Sample: The study sample consists of a group of players and youth from a regional league team. The sample included 25 players, selected using a

purposive sampling method. They were divided into two groups: 12 players representing the control group, and 13 players forming the experimental group .

Statistical Methods:

Descriptive Statistics: Including: Mean, Variance, Standard Deviation, T. Student and Percentages .

Presentation and Analysis of Results :

First: A Comparison of the Pre-test Results for the Research Groups. Following the administration of the pre-tests to the research sample, the results were analyzed to evaluate the homogeneity of the groups using Student's t-test. This process yielded the following results :

Table (01): Shows the calculated "t" values for the physical and technical pre-tests at a significance level of (0.01) and (38) degrees of freedom.

Significance Type	Calculated t	Tabulated t	Degrees of Freedom (df)	Significance Level (α)	Tests
Not Significant	0.98	2.44	38	0.01	Navette Test
Not Significant	1.80	2.44	38	0.01	Akraomv Ball Test
Not Significant	2.05	2.44	38	0.01	Ball Throw Test (Long Distance)

The results indicate that both groups are homogeneous in the physical tests, as the calculated 't' values were (0.98, 1.80, and 2.05) respectively. These values are

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lower than the tabulated 't' value of (2.44) at a significance level of (0.01) and (38) degrees of freedom. This confirms the homogeneity of the research sample across these tests .

Second: Presentation, Analysis, and Discussion of the Pre-test and Post-test Physical Results for the Research Sample .

Table(2): Presentation, Analysis, and Discussion of the Navette Test Results:

Significance Type	Calculated t	Tabulated t	df (n - 1)	Sig. Level (α)	Post-test (M2 $\pm$ SD2)	Pre-test (M1 $\pm$ SD1)	N	Group
Statistically Significant	3.63	1.72	19 *	0.05	$\pm$ 2.48 0.03	2.44 $\pm$ 0.04	13	Experimental Group
Not Significant	1.42	1.72	19 *	0.05	$\pm$ 2.42 0.04	2.40 $\pm$ 0.05	12	Control Group

Table (02), which compares the pre-test and post-test results of the research sample in the Navette test, reveals the following: The experimental group achieved a mean of (2.44) with a standard deviation of (0.04) in the pre-test. In the post-test, the mean increased to (2.48) with a standard deviation of (0.03). The calculated 't' value reached (3.63), which is greater than the tabulated 't'

value of (1.72) at a significance level of (0.05) and (19) degrees of freedom. Consequently, there is a statistically significant difference between the two means. This significant difference indicates a genuine improvement in aerobic fitness levels, which can be attributed to the implementation of the proposed training program .

Presentation, Analysis, and Discussion of the Akramov Ball Test Results :

Table (03): Comparison between Pre-test and Post-test results for the Experimental and Control groups in the Akramov Ball Test :

Significance Type	Calculated t	Tabulated t	df (n-1)	Sig. Level (α)	Post-test (M2 $\pm$ SD2)	Pre-test (M1 $\pm$ SD1)	N	Group
Statistically Significant	1.97	1.72	19 *	0.05	± 15.55 0.23	15.7 $\pm$ 0.24	13	Experimental Group
Not Significant	0.17	1.72	19 *	0.05	± 15.60 0.19	15.7 $\pm$ 0.18	12	Control Group

Based on Table (03), which compares the pre-test and post-test results of the research sample in the Akramov Ball Test, the following findings are observed: The experimental group achieved a mean of (15.70) with a standard deviation of (0.24) in the pre-test. In the post-test, the mean reached (15.55) with a standard deviation of (0.23). Given that the calculated 't' value is (1.97), which is greater than the tabulated 't' value of (1.72) at a significance level of (0.05) and (19)

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degrees of freedom, there is a statistically significant difference between the two means. This significant result indicates a genuine improvement in the players' technical coordination level as a result of the intervention .

Presentation, Analysis, and Discussion of the Ball Throw Test

(Maximum Distance) :

Table (04): Shows the Pre-test and Post-test results for the research sample in the Ball Throw Test (Maximum Distance) :

Significance Type	Ca lc ul at ed t	Tabul ated t	df (n- 1)	Sig. Lev el (α)	Post- test (M2 $\pm$ SD2)	Pre-test (M1 $\pm$ SD1)	N	Group
Statistically Significant	8. 33	1.72	*19	0.0 5	$\pm$ 51.50 0.30	$\pm$ 50.00 0.75	13	Experi mental Group
Statistically Significant	4. 00	1.72	*19	0.0 5	$\pm$ 51.00 0.75	49.50 0.80 $\pm$	12	Contro l Group

Table (04), which illustrates the comparison between the pre-test and post-test results of the research sample in the ball throw test for maximum distance, reveals the following: The experimental group achieved a mean of (50.00) with a standard deviation of (0.75) in the pre-test. In the post-test, the mean increased

to (51.50) with a standard deviation of (0.30). The calculated 't' value was (8.33), which is significantly higher than the tabulated 't' value of (1.72) at a significance level of (0.05) and (19) degrees of freedom. Consequently, there is a statistically significant difference between the two means. This indicates a genuine development in the explosive power of the group members, which is directly attributed to the effectiveness of the proposed training program .

Conclusions :

The results of this study led to the following findings :

- Coaches show a lack of interest in participating in training studies related to sports coaching.
- There is an absence of clear plans for training programs.
- Inadequate material resources relative to training requirements.
- The consistency of the test results reflects the positive impact and effectiveness of the proposed training program in developing the technical, physical, and tactical levels of the players compared to the control group.
- There is a difference in the dynamics of physical-tactical performance after applying the proposed training program in favor of the experimental group.

Recommendations :

Based on the collected data, the conclusions reached, and within the scope of this study, we propose the following recommendations :

- The necessity of enhancing coaches' cognitive abilities in the field of sports coaching through a scientific approach, by encouraging their participation in

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scientific symposiums, training courses, and study days under specialized supervision.

- Establishing standardized criteria and scientific methods for the evaluation and selection of youth coaches.

- Urging coaches to stay updated with the latest developments in football and its related sciences.

- Ensuring that training is not interrupted for long periods and that the number of training sessions is at least four units per week.

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