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Soufiane MAHI¹, Badis RAFAS², Mehdi JOUANI³, Fayçal BELDJOUHEUR⁴, Mehdi YOUCEF ACHIRA⁵, Mohamed KHERROUBI⁶, Zoubida FOUKRACH⁷, Henni DEHLI⁸, Maamar Badreddine BENSAADA⁹, Saad BEKAI¹⁰

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Uses of modern technological applications in evaluating physical performance during the sports season for footballers

Soufiane MAHI¹, Badis RAFAS², Mehdi JOUANI³, Fayçal BELDJOUHEUR⁴, Mehdi YOUCEF ACHIRA⁵, Mohamed KHERROUBI⁶, Zoubida FOUKRACH⁷, Henni DEHLI⁸, Maamar Badreddine BENSAADA⁹, Saad BEKAI¹⁰

^{1,2,3,4,5,6,7,8,9}Innovation et Performance Motrice Laboratory, Institute of Physical Education and Sport, Hassiba Ben Bouali University of Chlef (Algeria)

Abstract:

The study aims to know the role played by the use of modern technological applications in evaluating the physical performance of footballers during the sports season, with the aim of improving the physical aspect of footballers from the point of view of physical trainers.

The study was conducted on a random sample of 24 physical trainers active with the clubs of the first professional league. We used the descriptive analytical approach, and we relied on the questionnaire to collect data. The results showed a positive role for the use of modern technological applications in evaluating physical performance during the 2024-2025 sports season for footballers.

The study suggested encouraging physical trainers to use modern smart technological applications in the physical preparation of footballers, with the need for continuous training on how to work with them in the field to obtain accurate data on the physical condition of players.

Keywords: Modern technological applications, physical performance evaluation, sports season.

Introduction and problem of the study: Football is considered one of the most popular sports in the world, as it is distinguished from other sports by its great popularity and audience, and it combines physical readiness, technical skills and tactical maturity, and it also requires cooperation and coordination between players to achieve victory, The process of sports training in football is a long and arduous process that aims primarily to prepare players physically, technically, tactically, psychologically and mentally by using modern available techniques and technological means in order to reach the highest levels of performance. This can only be achieved through planning and preparing training programs based on modern methodological and scientific methods and foundations to raise the readiness of teams from a physical standpoint so that they are fully prepared for various official competitions (Abdul Qader Belkhair and others, 2024 AD, p. 126).

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What we notice today is that modern technology has come to include a wide range of developments and innovations that affect our daily lives, and change the way we think and interact with the world, as it has invaded all fields and has become relied upon and its results in several areas, especially in football, where its use is closely linked to the physical preparation of players and has been used in a remarkable way in preparing high-level players (Badr al-Din Dasa, 2014, p. 52).

In recent years, we have witnessed an unprecedented development of footballers at a high level in terms of physical fitness, which was confirmed by the statistics of the FIFA Physical Preparation Department through the use of technological means to evaluate physical, technical and tactical performance during international and continental competitions, highlighting the improvement in the results of high-level players in terms of the physical characteristics that dominate the game (maximum aerobic speed MAS, speed, explosive power).

Today, the international player plays between 60 and 70 matches per season, approximately 10 months of competition per season (between matches with the club and the national team and friendly matches), as the actual playing time has reached 60 minutes compared to what used to be between 50 and 55 minutes , and covers between 10 and 13 km as a total distance in the match, and a distance of 1.5 km to 2.5 km running at maximum intensity with the distance covered varying according to the playing positions, as the Center back covers between 8 and 10 km and the wing defenders of the flank between 8-12 km while the midfield covers between 11 and 13 km and the attackers cover between 9 and 10 km. During the match, the player covers between 120 and 600 m, i.e. between 50 and 70 sprints, between 15 and 30 jumps, 30 to 50 bilateral conflicts, and between 150 to 200 individual movements (FIFA.2018.p01). Through these numbers and statistics, they indicate the development of high-level footballers in terms of physical performance, which prompted us to research the importance of using modern smart technological applications in determining and improving the physical performance of footballers by asking the following general question:

General question:

Do modern technological applications have a positive role in evaluating the physical performance of footballers during the sports season?

Sub-questions:

• Does the modern technological device BIP used in the VAMIVAL test have a positive role in evaluating the maximum aerobic speed MAS of footballers during the sports season?

• Does the modern technological application My sprint have a positive role in evaluating the 30m speed of footballers during the sports season?

• Does the modern technological application My jumpe2 have a positive role in evaluating the explosive strength characteristic CMJ/SJ of footballers during the sports season?

The Study's Importance:

The current study aims to shed light on the role of using modern technological applications in evaluating the physical performance during the sports season for footballers from the point of view of physical trainers, and to determine the extent to which these modern technological applications *Journal for Educators, Teachers and Trainers JETT, Vol.16(4); ISSN:1989-9572* 304

contribute to diagnosing and evaluating the physical readiness of players after returning from the summer vacation stage. So that, the physical trainer provides accurate data and information regarding the physical characteristics that dominate the game "maximum aerobic speed MAS, 30m speed, explosive power" CMJ / SJ "which facilitates the planning process after he analyzes them and then programs training sessions based on scientific foundations that take into account the principle of individuality in training and enable him to control the training load in order to reach the improvement of these three physical characteristics, which are among the most important physical requirements that a footballer needs at the high level. The study also aims to identify the smart technology applications jump2 My, Sprint My and how to use them to measure the physical characteristics that dominate the game.

Definition of study terms:

Modern technological techniques:

Linguistically: Modern technology refers to a set of technological developments and innovations that work to improve our lives and change the way we live for the better.

Terminologically: It includes devices, tools, machines, inventions, technologies and all means resulting from the practical application of scientific knowledge. Thus, technology is defined as the various types of means used to produce the necessary requirements for human comfort and the continuity of his existence (Badr al-Din Dasa, 2014, p. 130).

Operational definition: It refers to the modern technological means, programs and applications used in the training process, such as: mobile phone applications used in football, such as speed tests using the My Sprint technology, explosive strength tests using My jump2 technology, and the "BIP" device used in the maximum aerobic speed test (MAS) and specifically in the VAMEVAL test.

Physical performance evaluation:

Linguistically: It is determining the value of something or issuing a judgment on the value of things, individuals or subjects based on standards, levels or criteria to estimate this value, according to "Cardinal", evaluation is defined as "the process of determining the value or worth of something based on measurement and testing.

Terminologically: Evaluation is used for the purpose of improvement, modification or development that is built on the judgments that came with the evaluation process or the accurate diagnosis of something or an effort (Al-Ilmi Nazir et al., 2022, p. 250).

Operationally: In this study, we mean diagnosing or determining the role of modern technological means and techniques in improving the physical aspect of the footballer, relying on physical tests that affect the most important physical characteristics that a footballer needs at a high level in order to improve them during the various stages of the training season to reach the required form on the day of the competition.

Physical performance :

Linguistically: It means physical preparation and readiness by possessing the necessary qualifications to compete physically, and "Qasim Hassan Hussein" defines it as the efficiency and safety of the nervous and muscular systems, the circulatory and respiratory system, and internal organs in the face of the requirements of competition.

Terminologically: "Basto Yasi Ahmed Abbas Saleh" defines it as the player's physical abilities, which is a translation of multiple foreign terms, including physical characteristics, motor characteristics, or motor abilities, which are terms that mean one concept, which is the physical aspect (Scientific Nazir et al., 2022, p. 250).

Operationally: We mean the physical performance of the footballer during matches. It includes all physical characteristics, endurance, strength, speed, flexibility and agility. In this study, we defined physical performance based on the player's performance in terms of the physical characteristics that dominate the game, represented by maximum aerobic speed MAS, speed, explosive strength of the lower limbs CMJ SJ, as they are among the most important physical requirements for a footballer at a high level.

Sports season:

Linguistically: We mean the the competitive sports year such as the school year.

Terminologically: Turpin (2002) says that the sports season is divided into three stages:

- **a.** The transitional stage is the period extending between the end and the beginning of each sports season.
- **b.** The preparatory stage at the beginning of each season until entering the official competition.
- **c.** The competition stage which happens in two phases "home-and-away phases".
- **d.** The winter recovery period between the home-and-away phases. (Dahmani Abdel Hamid, 2017, p. 95).

The sports or training season for specialists (coaches, physical trainers, video analysts, etc.) represents an annual plan for a competitive year that gives us a way to prepare and develop the players' capabilities in order to reach the athletic form to achieve the best results during the competition based on planning and programming for work. The annual plan includes exercises, sessions and small and medium training courses until reaching the program, a training season for an entire year according to the set objectives and the capabilities available to the club, taking into account the dates of the competitions specified by the federation and its affiliated provincial and regional associations (Qismiya Nourredine Madani, 2021, p. 394).

Operationally: It is an activity determined by the federation responsible for the game that extends for a maximum period of 10 months. The sports season is divided into stages, each stage having its own requirements and specificities. In this study, we will shed light on the preparatory stage, specifically the importance of using modern technological techniques in diagnosing the level of players during preliminary tests to begin the **General Preparation Stage** (GPS) based on the results of these tests.

Previous studies: After reviewing various previous studies similar to the topic of our study, we found that among the topics that were interested in the effectiveness of smart technology applications in knowing the level of physical preparation of footballers, and close to the topic of our study and that serve us from near or far, they were identified by three studies, which we summarized as follows:

The first study:

Ben Toumia Radwan et al., 2019.

Intitled: The phenomenon of using the Hypoxic training mask during the physical preparation phase in football.

The study aims to identify the reality of using the modern hypoxic training mask in Algerian football fields at different levels and to know the extent of physical trainers' aspiration to use modern technologies in the physical preparation of footballers. To achieve this, the study was conducted on a sample of 118 (physical trainers, technical trainers, academics) active at different levels and divisions for the 2017-2018 sports season. The researchers used the descriptive approach and relied on the questionnaire tool to reach results that confirmed the need to use modern methods. This is what the researchers will do in the future through an experimental study that may be the first of its kind in Algerian football fields. The researchers also recommend the need to use modern technologies and methods in the field of football training to reach the highest levels of sports achievement.

The second study: Ajjal Tobal et al., 2023.

Intitled: Uses of Artificial Intelligence in the Field of Sports.

The study aims to clarify the uses and applications of artificial intelligence in the field of sports, by reviewing, describing and analyzing some of studies' results that dealt with models of applying artificial intelligence in sports sciences by relying on the descriptive approach. The data collection tool used was the questionnaire, as The results showed the contributions of artificial intelligence to sports training in general and physical preparation for various disciplines in particular. Especially physical preparation for high-level footballers.

The third study: Tariq Khalfi and others, 2024.

Intitled: The effectiveness of smart technology applications in knowing the level of physical preparation of footballers.

The study aims to identify the effectiveness of smart technology applications in knowing the level of physical preparation of footballers (a field study using the My jump2 application on senior footballers of the Ain El-Beida Municipality Union team), and for this purpose the researchers used the descriptive method in its survey style on a sample consisting of 21 players (seniors) who were deliberately selected and the researchers used a physical test using MyJump2 application, and the results were that there is an effectiveness of the physical preparation period in improving the

characteristic of strength characterized by speed, and the effectiveness of smart technology applications.

Discussion of previous and similar studies:

All the studies presented deal with one of the variables of our study, so they are associated to our study. These include those who talk about technological applications and physical preparation for footballers, while the other talk about the uses of artificial intelligence in the field of sports.

As for the methodology, some used the descriptive method and the other dealt the experimental method; While the tool varied between a questionnaire and field physical tests. The results were that the uses of modern technological applications play an important role in improving the physical performance of footballers. It helped us to know how to analyze and interpret the results, as well as to determine the methodology, sample, and means of collecting data. Our study came to complement these studies by shedding light on "the uses of modern technological techniques in evaluating the physical performance during the sports season for footballers."

Exploratory study:

Through it, we aim to collect data on the subject of the study and information about the sample.

First: The researchers used the initial interview for exploration purposes, where an interview was conducted with a group of physical trainers and the aim was to collect data on the study's subject and information about the sample.

Second: The questionnaire, where the researchers aim to build a questionnaire that includes "the importance of using modern technological techniques in evaluating physical performance during the sports season for footballers"

The questionnaire was distributed in its first form to a sample of football physical trainers from the state of Algiers, estimated at 10 physical trainers, in order to confirm its validity and reliability.

The result of the survey study:

- Limiting the statistical community.
- Knowing the circumstances of the physical trainers.
- Taking a general picture of the questionnaire from a theoretical and practical point of view.
- Verifying the validity of the study questionnaire on the survey sample.

Study Methodology:

We relied on the descriptive analytical method, because we are in the process of collecting and analyzing data to highlight the effectiveness of using modern technological techniques in evaluating the physical performance during the sports season for footballers.

Study tools:

We found that the most appropriate tool for this study is the questionnaire, so we read and reviewed the various questionnaires included in previous studies, as well as quoted some phrases from them, where we limited the questions and rephrased them in a way that serves our study.

The questionnaire came in 4 sections:

Section One: It expresses some personal information about the study sample and included two (02) elements represented in "years of service, educational qualification".

Section Two: The use of modern technological techniques has a positive role in evaluating the maximum aerobic speed MAS for footballers during the sports season, which contributed to its improvement from the point of view of physical trainers, and consists of (09) phrases where the number of phrases was reduced to (06) after conducting an internal consistency validity test in the survey study.

Section Three: The use of modern technological techniques has a positive role in evaluating the 30m speed for footballers during the sports season, which contributed to its improvement from the point of view of physical trainers, and consists of (07) phrases where the number was reduced to (04) after conducting an internal consistency validity test in the survey study.

Section Four: The use of modern technological techniques has a positive role in evaluating the explosive power CMJ / SJ of footballers during the sports season, and this is what contributed to its improvement from the point of view of physical trainers, and it consists of (09) phrases.

The researcher relied in this questionnaire on the closed form that determines the possible responses to each question, i.e. on the "five-point Likert scale" and asked the physical trainers to determine the extent of agreement with these statements.

Questionnaire scores: The questionnaire includes 05 scores, shown in the following table.

Answers	alwayes	Often	Sometimes	Rerely	Never
Scores	5	4	3	2	1
Arithmetic	[5 - 4.2]	[4.2 - 3.4]	[3.4 - 2.6]	[2.6 - 1.8]	[1.8 - 1]
mean					
Level	Very high	High	Medium	Low	Very low

 Table No. (02): Psychometric properties of the questionnaire:

No.	Paragraph	Correlation	Significance
		coefficient	level
	The use of modern technological techniques		
01	has a positive role in diagnosing the physical	0.698	0.000
01	performance of footballers during the training	0.090	
	season.		
	The use of modern technological techniques		
02	has a positive role in improving the physical	0.660	0.000
	aspect.		

03	Does the use of technological techniques allow for increased effectiveness and accuracy in the process of evaluating the physical performance of a footballer?	0.430	0.036
04	Do you consider the use of modern technological techniques important in completing the training process?	0.534	0.000
05	Do you think that modern technological techniques provide us with more accurate data compared to traditional methods and tests?	0.536	0.000
06	Do you attribute the improvement in the maximum aerobic speed (MAS) characteristic of footballers to the reliance of physical trainers on the VAMEVAL test using the "BIP" device during its evaluation?	0.708	0.000
07	Do you attribute the improvement in the 30m speed characteristic of footballers to the reliance of physical trainers on the My sprint technique during its evaluation?	0.586	0.003
08	Do you attribute the improvement in the explosive power of the lower limbs SJ CMJ in football to the reliance of physical trainers on the Myjump2 technology during its evaluation?	0.600	0.002
09	Do you think that the use of modern technology contributes to enhancing positive interaction between players.	0.594	0.002
10	Using modern technological techniques improves players' motor skills (flexibility, coordination).	0.684	0.000
11	Using technological applications helps determine players' physical readiness.	0.560	0.004
12	Using technological applications helps in the data analysis process, which provides us with accurate information to determine where the deficiency lies.	0.442	0.031
13	Using technological techniques and applications helps in building and planning training loads.	0.664	0.000
14	Using technological techniques and applications helps in monitoring and controlling training loads.	0.780	0.000
15	Using technological techniques and applications helps in identifying each player's	0.653	0.001

	weaknesses and thus respecting the principle of		
	individual training.		
16	Using technological techniques and	0.652	0.001
16	applications contributes to achieving a balance	0.653	0.001
	between work and rest in training sessions.		
	Providing modern technology facilitates		
17	communication and interaction with experts	0.562	0.004
	and international physical trainers		
	Using modern technology facilitates players'		
18	monitoring of their physical condition during	0.531	0.008
10	the transitional period between the end and	0.001	0.000
	beginning of each sports season.		
	Using modern technology facilitates the		
19	analysis of official matches from a physical	0 648	0.000
17	perspective, thus clarifying what effort is	0.010	0.000
	required in each physical characteristic.		

To know the psychometric properties, we carried out the process of unloading the corrected questionnaires, which were estimated at 24 questionnaires, and entering them into the computer.

Validity of the internal consistency of the paragraphs:

To know the validity of the consistency of the paragraphs with the total score of the scale in the current research community, Pearson's correlation coefficient was calculated between the scores of each paragraph with the total score of the questionnaire, and the following table shows the results of this procedure.

Table No. (02): Shows the results of the correlation coefficients of the paragraphs with the total score of the questionnaire in the current research community (n = 24).

It is noted from Table No. (02) that the correlation coefficients of all paragraphs are statistically significant at a significance level of (0.01), meaning thatall paragraphs are characterized by strong internal consistency.

- Questionnaire stability coefficients: To know the stability of the total score of the questionnaire in its final form consisting of (19) paragraphs in the current research community, we applied the splithalf equation and the Krombach method to the data of the total sample estimated at (24) physical trainers. The results were as shown in the following table:

Table No. (03): Shows the results of the stability coefficients for the sub-axes and the total score of the questionnaire in the research community (n=24).

Questionnaire axes	Number	Split-half	Reliability	Correlation
	of	Reliability	coefficient	coefficient
	statements			
The improvement in the maximum		03		
aerobic speed (VMA) of football players	06	Phrases	0.619	0.886
is reviewed due to the reliance of physical		03		

trainers on modern technological techniques during their evaluation		Phrases		
The improvement in the 30m speed characteristic of footballers is reviewed due to the reliance of physical trainers on modern technological techniques during their evaluation.	04	02 Phrases 02 Phrases	0.825 0.560	0.642
The improvement in the explosive strength characteristic (CMJ/SJ) of footballers is reviewed due to the reliance of physical trainers on modern technological techniques during their evaluation.	09	05 Phrases 04 Phrases	0.809 0.767	0.657
Modern technological techniques have a positive role in evaluating the physical performance of footballers during the sports season.	19	10 Phrases 09 phrases	0.823 0.821	0.941

From the table, we notice that the correlation coefficient is high for each axis of the questionnaire, ranging between 0.642-0.941. Each half of the questionnaire axes is also characterized by high stability.

- Kronbach's α stability coefficient: The following table shows the results reached for the questionnaire axes using the Kronbach's α stability coefficient.

Table No. (04): Shows the results of the Kronbach's α stability coefficients.

Questionnaire axes	Krombach α
The questionnaire reviews the improvement in the maximum aerobic speed	
(MAS) characteristic of footballers, due to the reliance of physical trainers rely	0.820
on modern technological techniques during its evaluation.	
It reviews the improvement in the 30m speed characteristic of footballers. for the	
reliance of physical trainers on modern technological techniques during its	0.747
evaluation.	
It reviews the improvement in the explosive power characteristic CMJ/SJ of	0.838
footballers which is mainly due to the reliance of physical trainers on modern	
technological techniques during its evaluation.	
Modern technological techniques play a positive role in evaluating the physical	0.908
performance of footballers during the sports season.	

Table No. (04) shows that all stability coefficients are high and statistically significant at the significance level of 0.05, and that the value of these coefficients differed from one axis to another, where its maximum limit was 0.838, and its minimum limit was 0.747. The overall stability coefficient of the study questionnaire reached 0.908, which is a high and statistically significant stability coefficient at the significance level of 0.05, which indicates the possibility of stability of the results that will be obtained using the questionnaire. Given the results obtained using the following two techniques :

- Split-half.

- Kronbach's α reliability coefficient.

Referring to Tables 03 and 04, the questionnaire can be considered to be highly reliable and can therefore be used in our study.

Study community and sample:

The study community is represented by the physical trainers of the first professional division clubs, while the study sample was simple random, as this method gives all members of the community the same chance to be part of the study sample, which gives the study tool an objectivity. The total sample was 24 physical trainers active with the first professional division clubs.

- Study design and the statistical processing:

Study limits:

- Human limits: Our study included physical trainers from Algiers state.

- Time limits: This study was conducted during the 2024-2025 sports season. We started from May to June 15, 2024. After distributing and then collecting the questionnaire forms and correcting them, we started to download the data onto the computer, then analyze them and sort the results.

- **Spatial limits:** This study was applied at the level of the state of Algiers, where we used 34 forms, 10 of which were for the exploratory study and 24 for the study, which were directed to active physical trainers in the first professional division.

- Statistical Analysis Tools: The researcher used the statistical program called the Statistical Package for Social Sciences, twenty-second edition (spss22), and also relied on the following statistical techniques:

- Percentages and frequencies to describe the sample.

- Arithmetic mean to measure the degree of centralization of answers.
- Standard deviation to measure the extent of agreement and non-dispersion of answers.
- Kronbach's coefficient of reliability a to determine the reliability of the questionnaire items.
- T-test to find the differences between the averages of two categories.
- One-way Anova to find the differences between the averages of several categories.
- Spearman brown correlation coefficient to investigate the relationship between the study variables.

- Display and analysis of results:

1- Testing the normal distribution of data:

To find out whether the data we have in hand takes the form of a normal distribution, we test it using the normal distribution test of the data (Kolmogorov-Smirnov) and (Shapiro-Wilk) for the study sample estimated at 24.

		Kolmogorov-Smirnov			Shapiro-Wilk			
The Variable	Sample size	Test Statistical Value	Degree of Freedom	Level of Significance	Test Statistical Value	Degree of Freedom	Level of Significanc e	
Modern technological techniques play a positive role in evaluating the physical performance of footballers during the sports season.	24	0.126	24	0.200	0.931	24	0.103	

	Table	No. (05)	shows	the	results	of	the	normal	distrib	oution	test	of	the	data
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Table No. (05) shows that the probability value corresponding to the result of the Kolmogorov-Smirnov normal distribution test for the questionnaire is the largest level of significance $(0.05 = \alpha)$ at a degree of freedom estimated at 24. These are statistically significant results, i.e. the null hypothesis is accepted, which states that the data take the form of a normal distribution, and the alternative hypothesis is rejected, which states that the data do not take the form of a normal distribution.

Based on these results, we will use parametric statistical tests to verify the hypotheses.

The relationship between the questionnaire and its three axes:

We used the Pearson parametric correlation coefficient to find out the binary relationship between the questionnaire and its three axes. The test results were shown in the following table:

Table No. (06): Shows the results of the correlation between the questionnaire and its three components at a statistical significance level estimated at $0.01 = \alpha$

Variables		Axis I	Axis II	Axis III	Questionnaire
Axis I	Pearson correlation coefficient value	1.000	* 0.579	*0.654	*0.855
	Probability value sig		0.003	0.001	0.000
	Sample Size	24	24	24	24
Axis II	I Pearson correlation coefficient value		**1 .000	** 0.679	** 0.866
	Probability value sig	0.003		0.000	0.000
	Sample Size	24	24	24	24
Axis III	Pearson correlation coefficient value	**0.654	**0.697	**1.000	**0.890
	Probability value sig	0.001	0.000		0.000
	Sample Size	24	24	24	24

Questionnaire	Pearson correlation coefficient value	0.855**	0.866**	0.890**	**1.000		
	Probability value sig	0.000	0.000	0.000	0.000		
	Sample Size	24	24	24	24		
**The correlation is statistically significant at the 0.01 level (two-way)							

It is noted from the results of the table above that the values of the Pearson correlation coefficient are greater than 0.800 with probability values (Sig) less than 0.01 at a significance level of $0.01 = \alpha$, which are statistically significant results between the total score of the questionnaire and its three axes.

This means that there is a positive direct relationship between the total score of the questionnaire and its three axes. Thus, the questionnaire is characterized by a high degree of accuracy and consistency with its three axes.

Presentation and analysis of the first hypothesis results' :

Which states that "the improvement in the maximum aerobic speed (MAS) characteristic of footballers, due to the reliance of physical trainers rely on modern technological techniques during its evaluation."

To verify the validity of the hypothesis, the researcher used the (T-Test) for the single sample to find the differences between the spoken mean and the arithmetic mean of the research sample, in order to know the degree of acceptance and satisfaction regarding the first axis of the questionnaire.

The test results are shown in the following table:

Table No. (07) shows the results of the (T-Test) for the single sample (the first axis of the questionnaire):

Variables	Ν	Spoken	Arithmetic	T-	Freedom	Significance	Conclusion	Level
		mean	mean	value	Degree	Level		(judgment)
It reviews the improvement in the maximum aerobic speed (MAS) characteristic of footballers, due to the reliance of physical trainers rely on modern technological	24	03	4.1944	8.983	23	0.000	The first axis of the questionnaire is characterized by acceptance and satisfaction by the study sample.	High

techniques				
during its				
evaluation.				

It is noted from the results of Table No. (07) that the arithmetic mean of the research sample reached 4.1944, equivalent to (25.1664), while the reported mean is 03, equivalent to (18), with a difference of 07 degrees. The calculated value of (T) reached 8.983, which is significant at the 0.000 level and with a degree of freedom estimated at 23, and that the arithmetic mean is completely greater than 3.4 and less than 4.2, which indicates that the first axis of the questionnaire is characterized by acceptance and satisfaction by the sample members at a high level, meaning that the improvement in the maximum aerobic speed characteristic (MAS) for footballers is reviewed on the basis of the physical trainers' reliance on modern technological techniques during its evaluation.

Accordingly this result achieves the first hypothesis of the study, which is the same as what (Khoja Bassem and others, 2019 AD, p. 148) study reached. That the use of modern technological techniques is more effective and accurate in evaluating and diagnosing the physical characteristics of footballers, and this is what It was reinforced by the results of the study (Tariq Khalfi et al., 2024 AD, p. 931), which highlighted that smart technology applications have high effectiveness and accuracy in knowing and determining the physical level of footballers. Therefore, based on the above, we conclude that the uses of modern technology and applications have a positive and effective role in diagnosing the physical condition of footballers by determining their aerobic capabilities, which are determined by the results of the maximum aerobic speed tests (MAS), which were presented to the physical trainers in the first axis of the questionnaire of our study.

Presentation and analysis of the second hypothesis results' :

Which states that "The improvement in the 30m speed characteristic of footballers. For the reliance of physical trainers on modern technological techniques during its evaluation.", and to verify the validity of the hypothesis, the researcher used the (T-Test) for the single sample to find the differences between the spoken mean and the arithmetic mean of the research sample, in order to know the degree of acceptance and satisfaction regarding the second axis of the questionnaire.

The results of the test are shown in the following table :

Table No. (08) shows the results of the (T-Test) for the single sample (the second axis of the questionnaire) :

Variables	Ν	Spoken	Arithmetic	Т-	Freedom	Significance	Conclusion	Level
		mean	mean	value	Degree	Level		(judgment)
It reviews the improvement in the 30m speed characteristic of footballers. For the reliance of physical trainers on modern technological techniques	24	03	4.0521	7.769	23	0.000	The second axis of the questionnaire is characterized by acceptance and satisfaction by the study	High

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ournal for Educators, Teachers and Trainers

during its evaluation.

It is noted from the results of Table No. (08) that the arithmetic mean of the research sample reached 4.0521, equivalent to (16.2084), while the reported mean is 03, equivalent to (12), with a difference of 4 degrees. The calculated value of (T) reached 7.769, which is significant at the 0.000 level and with an estimated degree of freedom of 23. The arithmetic mean is completely greater than 3.4 and less than 4.2, which indicates that the second axis of the questionnaire is characterized by acceptance and satisfaction by the sample members and at a high level, meaning thatthe improvement in the 30m speed characteristic of footballers. For the reliance of physical trainers on modern technological techniques during its evaluation.

Accordingly this result achieves the second hypothesis of the study, which is what (Qarumi Al-Hussein and others, 2021 AD, p. 105) study reached. That the more modern technological techniques are used, the quality of the training process as a whole increases, and this is what the results of the study (Khudoum Abdel Fattah et al., 2023, p. 801) recommended.

It is necessary to use smart technology applications that would facilitate the work of physical trainers and coaches, and also raise the effectiveness and accuracy of the physical level of footballers. Based on the above, we conclude that the uses of modern technological applications have a positive and effective role in diagnosing the physical condition of footballers by identifying their abilities to transform from a defensive to an offensive state and vice versa, which we determine based on the results of the 30m speed tests that were presented to physical trainers in the second axis of the questionnaire of our study.

Presentation and analysis of the third hypothesis results' :

Which states that "It reviews the improvement in the explosive power characteristic CMJ/SJ of footballers which is mainly due to the reliance of physical trainers on modern technological techniques during its evaluation.". To verify the validity of the hypothesis, the researcher used the (T-Test) for the single sample to find the differences between the spoken mean and the arithmetic mean of the research sample, in order to know the degree of acceptance and satisfaction regarding the third axis of the questionnaire.

The results of the test are shown in the following table :

Table No. (09) shows the results of the (T-Test) for the single sample (the third axis of the questionnaire):

Variables	Ν	Spoken	Arithmetic	T-	Freedom	Significance	Conclusion	Level
		mean	mean	value	Degree	Level		(judgment)
It reviews the							The third axis	
improvement in							of the	
the explosive							questionnaire	
power							is	
characteristic	24	03	4.2361	9.553	23	0.000	characterized	Very High
CMJ/SJ of							by acceptance	
footballers							and	
which is mainly							satisfaction	
due to the							by the study	

Journal for Educators, Teachers and Trainers JETT, Vol.16(4); ISSN:1989-9572

reliance of			sample.	
physical trainers				
on modern				
technological				
techniques				
during its				
evaluation.				

It is noted from the results of Table No. (09) that the arithmetic mean of the study sample reached 4.2361, equivalent to (38.1249), while the reported mean is 03, equivalent to (27), with a difference of 11 degrees. The calculated value of (T) reached 9.553, which is significant at the 0.000 level and with a degree of freedom estimated at 23, and that the arithmetic mean is completely greater than 4.2 and less than 5.0, which indicates that the third axis of the questionnaire is characterized by acceptance and satisfaction from the sample members at a very high level.

This means that the improvement in the explosive power characteristic CMJ/SJ of footballers is mainly due to the reliance of physical trainers on modern technological techniques during its evaluation.

Accordingly, this result achieves the third hypothesis of the study, which is what (Khoja Bassem and others, 2023, p. 404) study reached. That the use of modern technology with the JUMP MD device is more effective in evaluating the explosive strength of the lower limbs of footballers compared to traditional tests.

Based on the above, we conclude that the uses of modern technological applications have a positive and effective role in diagnosing the explosive power of footballers that they need in competition through various aerial and ground duels and shooting... etc.

Presentation and analysis of the general hypothesis results' :

Which states that "modern technological techniques have a positive role in evaluating the physical performance of footballers during the sports season".

To verify the validity of the general hypothesis, the researcher used the (T-Test) test for the single sample to find the differences between the spoken mean and the arithmetic mean of the research sample, in order to know the degree of acceptance and satisfaction with the total score of the questionnaire.

The results of the test are shown in the following table :

Variables	Ν	Spoken	Arithmetic	Т-	Freedom	Significance	Conclusion	Level
		mean	mean	value	Degree	Level		(judgment)
Modern							The	
technological							questionnaire	
techniques play a							is	
positive role in	24	03	4.1609	10.061	23	0.000	characterized	Vory High
evaluating the				100001			by	very mgn
physical							acceptance	
performance of							and	
footballers during							satisfaction	

Table No. (10) shows the results of the (T-Test) for the single sample (questionnaire):

ournal for Educators, Teachers and Trainers

the sports season. by the study sample.

It is noted from the results of Table No. (10) that the arithmetic mean of the research sample reached 4.1609, equivalent to (79.0571), while the reported mean is 03, equivalent to (57), with a difference of 22 degrees. The calculated value of (T) reached 10.061, which is significant at the 0.000 level and with a degree of freedom estimated at 23. Which means that the arithmetic mean is completely greater than 3.4 and less than 4.2, which indicates that the questionnaire is characterized by acceptance and satisfaction by the sample members at a high level, and that modern technological techniques have a positive role in evaluating the physical performance of footballers during the sports season.

Accordingly, this result achieves the general hypothesis of the study, and this is what (Mahmoud Mahfouzy, 2023, p. 65) study showed, that technology has a very important role in developing the training process in general and the physical aspect in particular.

Conclusions:

1- The improvement in the maximum aerobic speed (MAS) of footballers is reviewed primarily due to the reliance of physical trainers on modern technological techniques during its evaluation.

2- The improvement in the 30m speed (30m) of footballers is reviewed primarily due to the reliance of physical trainers on modern technological techniques during its evaluation.

3- The improvement in the explosive strength (CMJ SJ) of lower limbs of footballers is reviewed primarily due to the reliance of physical trainers on modern technological techniques during its evaluation.

4- Modern technological techniques have a positive role in evaluating the physical performance of footballers during the sports season.

Suggestions:

1- Encouraging physical trainers to use modern technological techniques and applications in the physical preparation of footballers.

2- Working to provide modern technological devices and applications in the training environment for footballers.

3- The necessity of continuous training for physical trainers on how to use these techniques and applications well in the physical preparation of footballers.

4- Encouraging the creation of interactive platforms to exchange information and experiences between physical trainers and benefit from the players' experiences and guide them continuously.

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