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Determination of the Tactico-Mental profile for (U20) Player's through comparing their Mental Imagery level according to the three tactical play lines variable in football

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Abstract

This study aims to determine a Tactico-Mental profile of footballers (U20) through measuring their Mental Imagery level according to the play lines variable (Defense, Center, Attack), so identifying the differences of Mental Imagery level among their tactical distribution, for this purpose, we used Causal Comparative Method (Ex-Post Facto Method) on a sample composed of (80) members chosen randomly from the community of Algerian 1st League (2019/2020). And for data collection, we used the Mental Imagery scale after validation. After collecting the results and having treated them statistically, we conclude that there were statistically significant differences ($P<0.05$) among the three groups in favor of the center tactical line group, so the tactical line has a different impact on the Mental Imagery level of (U20) players during their previous experience years in training and competition. On this basis, the study recommended that it is necessary to set up a large mental skills player's profile for each tactical playline in football.

I. Introduction

During the last few decades, coaches and athletes from a wide variety of sports have begun to realize the importance of the mental side of athletic performance. Sport specialists agree that athletic performance is influenced not only by physical skills but also by psychological ones (Kenioua & Boumesjed , 2017).

The performance indicators for the Algerian national team are composed of the offensive elements represented by the percentage of ball possession and the number of successful passes and of the defensive elements represented by the position of the barycenter of the recoveries balls (Hadji , Benmesbah , & Benbousta , 2019). While the Mental Skills have become the most important part of the content of the sports training program in football high level. Many researchers ensure that the player must be dealt with as a biological, social and psychological unit, and cognitive psychology is known as Perceptual psychology, and it is a sub-field of psychology, the psychology cognitive is not exact sciences if there are any -. The complexity of the cognitions involved in behavior is matched only by the multiplicity of interactions of its determinant (Saidia , Nahal , & Beneddine , 2019).

The increasing interest in the mental aspects of psychologists, pushed the researchers and sports coaches due to their importance in several areas of psychological intervention in the field of mental preparation of the football player, as this appears in the development of the movement and planning skills intending to enter the competition with a high level performance, "Whatever fitness The player is high and his physical build is strong, so there must be a leader for these high physical capabilities and physical fitness, who plays this role is the mind that can use these capabilities in the right direction that serves the achievement of the goal. It is equally important to benefit from their physical capabilities" (Alaoui, 2002).

In Algerian football, the process of distributing players on the tactical play lines by coaches is usually based on indicators of morphological, physical and skilful competence, on which the level of performance in modern training depends. From this standpoint, the need for the current field study arose, and the coaches' attention was drawn. About the possibility of using the players' level of Mental Imagery skill as a criterion and an indicator to be taken into account in the schematic distribution of football players, to reach a better level of planned performance in competitive situations, In the intellectual, tactical fight of people opens the qualities, abilities, and ability to overcome "hostile" will, to conduct conflict game of mind. It is constantly

ready to suddenly arising psychological and actual situations (Tsisetsky , 2015).

The Mental Imagery skill is used to enhance and develop different motor skills, as it is one of the tools of planned achievement in the football match, and that is through the mental recall of the correct model of motor skill and an attempt to imitate it (Ratib, 2000), as well as through Mental Imagery To repeat the motor skill that the player is trying to learn. Shamoun & Al Jamal (1996) mentioned that Mental Imagery contributes to concept a tactical plan before the competition match, and training before going to the field helps to make better decisions during the match. Weinberg & Gould (2001) also see that Mental Imagery can repeat individual or group tactical planning strategies, such as the area defence method or man-to-man defence method, the Mental Imagery technique can be used to help the player visualize his movements in some tactical schema in Football, "as many sports coaches indicated that the players were able to quickly learn some offensive and defensive plans through the use of training programs on Imagery Mental".

The measurement is of great importance in the sporting field, as it is concerned with the results achieved by individuals, and it gives an insight about the progress or decline of individuals in their training work. (Radwan & Kamal , 2001).

The Scientists suggest that physical abilities must include various scales to measure many of the characteristics involved in athletic or motor performance (Haceini , 2020), in this study the measurement from the psychological approach is the procedures that it is used to measure the relative differences among individuals and it generally depends on knowing the current responses (Jaber , 1996), and using them for forecasting and finding decisions for future behaviour. This process provides quantitative indicators about the current state of individuals for evaluation and evaluation, so the researcher conducted the current study that tries By measuring the level of Mental Imagery of football players under 20 years of age, and collecting data describing the differences in the level of Mental Imagery among the players distributed on groups of tactical play lines (defence, center, attack), and thus revealing the impact of the tactical play line At the level of Mental Imagery (Visual, Sensory-Kinesthetic, Auditory, Associated Emotional state, Image Control and Internal Mental Imagery).

I.1. Literature Review

More specifically, an experimental study by Abu Raya (2012) indicates

that there is a positive relationship between the speed of offensive tactical thinking and the mental skills of football players, as well as the excellence of the experience sample (05) years more than players less (05) years of experience. Other comparative study as the study of Houar Abdellatif (2014) indicates there are statistically significant differences in some morphological, physical and skill indicators among (U17) footballers's tactical play lines.

Through this literature review, we assume that There are statistically significant differences ($P<0.05$) among the means of Mental Imagery level for the footballers under 20 years, according to the tactical play line variable (defence, center, attack). Therefore, the main objective of this study is to determine a Tactico-Mental profile of footballers (U20) through measuring their Mental Imagery level according to the variable of play lines (Defense, Center, Attack), so identifying the differences of Mental Imagery level among their distribution in the three tactical play lines.

II. Method and Materials

According to Bouhouch (2007) as cited (Haddad & Zaaboub, 2020) « The Methodology means the set of foundations and rules followed by the researcher in their study of the problem, in order to uncover the truth ». Thus, we used the causal descriptive comparative approach (X-Post Facto Method), which is a type of research that is applied to determine the possible causes that affected the studied behaviour not through experience as it is in the experimental method, but by comparing those who behave that behaviour or characterize it with those who do not or describe it (Al Assaf , 2010).

Some researchers consider it to be one of the types of descriptive method, Van Dalin believed that it does not stop at the limit of describing the phenomenon and what precedes that in terms of collecting data, but enables to know the inter-relationships among facts.

So the comparative causal research begins in the researcher's attempt to compare the existing conditions of the groups involved in the study concerning a specified number of variables, and if it becomes apparent to him that there are statistically significant differences between these groups on any of the study variables, then he seeks to uncover the reasons behind these differences through comparison of these groups for those variables.

Determination of study's fields:

Temporal field: This field study was conducted during the competition period for the football season 2019/2020, specifically, the period extending from September 15, 2019, to February 10, 2020**.**

Spatial field: The study was applied in the 1st League teams stadium of competition..

Determination of study's variables :

The independent variable : The tactical play line in football (Defence, Center, Attack).

The dependent variable : The level of Mental Imagery.

I. Participants

The research community was all Algerian football players for the first professional league teams less than 20 years old, signed up in the 2019/2020 sports season, their number was (400) players, so (25) players signed up in each team.

We have selected (20%) from the research community for the research, their mean age (19.75 ± 0.23) years, and in a random way that gives opportunities for participation to all individuals, who were distributed among the three tactical play lines, after unpacking the information forms for the measuring tool. And distributed to individuals of the research sample. As showed in *Table 1*.

Table 1. The Distribution of sample members throughTactical play line in football.

	Number of participants	Persentage (%)	Tactical play line Distribution for sample members	
Research Community	400	100		
Research sample	80	20	Defence (n_1)	27
			Center (n_2)	28
			Attack (n_3)	25

Source : (Belaroussi, 2019).

In addition to Table 1 Data, We has set aconditions relied to the experience factor (at least 05 years), provided that all members of the sample had graduated into the youth categories as juniors, and each player continued his tactical play line without changing it, and this was controlled through the help of the team management by referring to the players' archive.

We also considered the futility of conducting parity between groups and homogeneity within the sample, because Yaareb (2007) indicated that among the common mistakes in educational scientific research is to perform equivalence in all variables to control random and extraneous variables.

If this study deals with measuring the level of mental skills, so theren are no importance of the variable of age and height, and we stipulated in the sample subjects the safety of mind (The player is not a mental disabled).

II. Materials

The Mental Imagery scale in the sports field: Shamoun (1999) cited that to measure the level of Mental Imagery among the members of the research sample, we resorted to using the Martenz Scale (1982) which contains four dimensions: visual, auditory, sensory-kinesthetic and associated emotional state. and mentioned that two dimensions have been added to the Martens scale by Vealey and Walter (1993), and they are image control, which is evaluated through a five-point scale starting from lack of control to Full control, and the internal mental imagery through a phrase asking about each experience, can it be seen from inside the body or from outside it with the answer "yes or no", that is, how the individual perceives the image from inside the body in every situation, and this scale has been codified and codified by Shamoun & Al Jamal (1996) and it was applied in a group of researches under the name of Mental Imagery scale in the sports field.

The Mental Imagery scale in the sports field includes in its initial form four sports situations: individual practice practicing with others, peer-watching and performance in competition, so that these situations are responded to on the basis of the aforementioned six dimensions of Imagery Mental, and accordingly the scale of Mental Imagery in the field contains Al-Riyadi includes (24) phrases in which the response is according to the five-point Likert scale, and the phrases number (1, 7, 13, 19) measure the visual Mental Imagery, and the phrases number (2, 8, 14, 20) measure the auditory Mental Imagery, The phrases number (3, 9, 15, 21) measure the sensory-kinesthetic Mental Imagery, the phrases number (4, 10, 16, 22) measure the associated emotional state, while the phrases number (5, 11, 17, 23) measures the Image Controlling, Finally the phrases number (6, 12, 18 and 24) measure the Internal Mental Imagery.

Assessment level key : The level of Mental Imagery is estimated according to *Table 2*.

Table 2. Mental Imagery Assessment level key.

1	Excellent	18-20
2	Good	15-17
3	Average	12-14
4	weak	8-11
5	Very weak	4-7

Source : (Rahal, 2010).

The exploratory study: The exploratory study aims to validate the scale tool, it was conducted on a sample of (10) individuals from outside the main sample of the study but from the same original community for this research, that was during the period from 02/11/2019 to 27/11/2019, after collecting data, we calculated the coefficients of honesty and constancy for reliability .

Scale Validation : It is intended (Internal consistency) so that each statement of the scale is consistent with the dimension to which it belongs, and we used the calculation of the correlation coefficients between each of the statements in the scale by using the coefficient (Alpha Cronbach). Between the scores for each dimension and the scores for the overall scale phrases.

Constancy coefficient : We used the Alpha Cronbach coefficient, through which the discrimination factor is calculated for each statement, so it is advisable to delete the expressions with a low positive discrimination coefficient (less than 0.19), or the expressions with a negative coefficient to obtain a constancy coefficient.

The value of the constancy coefficient Alpha (0.77), which is an acceptable constancy coefficient, and we did not delete any statement because the coefficient of differentiation of all the scale expressions was positive and greater than 0.19.

Honesty of scale Internal consistency: The internal consistency coefficient is the correlation coefficient of Pearson between the score of each phrase and the total score of the scale.

And we found the correlation coefficients between the average of each dimension and the total rate of the expressions, and they were according to the order of the six dimensions as follows: (0.91, 0.89, 0.93, 0.78, 0.90, 0.85), which are considered acceptable and statistically significant internal consistancy coefficients. We have confirmed the honesty and constancy for validity of the scale, and this reflects the extent of the validity of the scale for application to the basic study sample.

Objectivity: "A test of good objectivity is a test that eliminates suspicion and disapproval of the testers when applied." (Khater & Al Baik , 1978)

III. Design and Procedure

Using the descriptive approach appropriate to the nature of the research and its objectives, the design of the causal-comparative method was followed, by applying the standardized Mental Imagery scale after adapting it for validity and ensuring its validity and reliability, on the individuals of the basic study sample of (80) football players enrolled in the 2019 / sports season 2020 represented the community of the first professional football league (U20), after dividing them according to their tactical play line (defense, center, attack), and this process was carried out in a direct manner under the supervision of researchers during the competition period for the return stage at the level of the stadium of each team the player belongs to. Finally, we obtain the raw results that are subject to statistical treatment

IV. Statistical Analysis

We used Microsoft Office Excel to treat the collection data statistically through these laws : The mean ($\bar{x}$) and the standard deviation (S), Cronbach's alpha coefficient, Pearson correlation coefficient, (One-Way ANOVA) test for more than two independent groups to find the statistically significant differences among the means of our three groups.

III. Results

***Table 3*. The mean "$\bar{x}$", The Standard deviation "S" Values of Mental Imagery level for research sample members.**

Dimensions of Mental Imagery	$\bar{x}$ ±S (n=80)	Estimated level
Visual Mental Imagery	**16.75** ±0.89	**Good**
Sensory-Kinesthetic Mental Imagery	**15.41** ±0.64	**Good**
Auditory Mental Imagery	**16.63** ±0.70	**Good**
Associated Emotional state	**15.20** ±0.69	**Good**
Image Control	**15.25** ±0.63	**Good**
Internal Mental Imagery	**15.15** ±0.65	**Good**

Source : (Mahi, 2020).

Table discussions: According to Table 3, the mean "$\bar{x}$" for the Visual Mental Imagery test reached (16.75) with a standard deviation "S" of (0.89), which indicates according to the scale of level estimation *(Table 3)* that the level of Visual Mental Imagery is at the good level, The mean of the Sensory-Kinesthetic Mental Imagery test reached (15.41) with a standard

deviation (0.64), which indicates, according to the scale of the level estimate, that the level of the Sensory-Kinesthetic Mental Imagery is at the good level. As for the Auditory Mental Imagery test, the means reached (16.63) with a standard deviation (0.70), which indicates, according to the level of assessment scale, that the level of Auditory Mental Imagery is at the good level. Regarding the Associated Emotional state test, the mean was (15.20) with a standard deviation (0.69), which indicates that the level of the Associated Emotional state is at the good level. As for the Image Control test, the means reached (15.25) with a standard deviation (0.63), which indicates that the Image Control level is at a good level, and after testing the Internal Mental Imagery, the mean reached (15.15) with a standard deviation (0.65) which indicates that the level of Internal Mental Imagery is at good level. As well as represented in *Figure 1* that below.

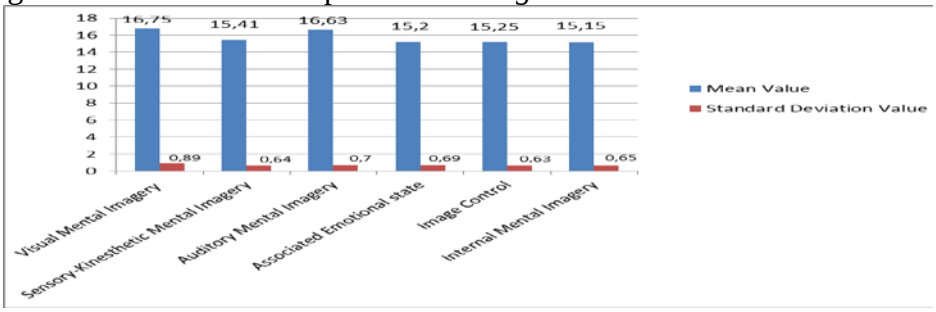

Figure 1. The mean "$\bar{x}$", The Standard deviation "S" Values of Mental Imagery level for research sample members.

Source : (Mahi, 2020).

Table 4. The values of mean "$\bar{x}$", Standard deviation "S", and the One-Way ANOVA Test (P<0.05), freedom degree (2, 77)

	Defence $\bar{x}$ ±S (n_1=27)	Center $\bar{x}$ ±S (n_2=29)	Attack $\bar{x}$ ±S (n_3=24)	F Calculated value	F Table value
Visual Mental Imagery	15.72 ±0.73	16.77 ±0.94	15.75 ±1.03	03.98	3.07
Sensory-Kinesthetic Mental Imagery	14.38 ±0.57	15.60 ±0.73	14.21 ±0.65	03.93	
Auditory Mental Imagery	14.45 ±0.69	16.77 ±0.70	15.67 ±0.71	04.22	
Associated Emotional state	14.08 ±0.59	15.36 ±0.75	14.13 ±0.66	03.17	
Image Control	14.12 ±0.62	15.25 ±0.76	14.38 ±0.65	03.73	
Internal Mental Imagery	14.01 ±0.65	15.39 ±0.67	14.02 ±0.57	03.82	

Source : (Mahi, 2020).

Table discussions: According to *Table 4*, the value of F calculated for Mental Imagery (visual, sensory-kinesthetic, auditory, accompanying emotional state, image control, and internal perception) were respectively (03.98, 03.93, 04.22, 03.17, 03.73, 03.82), which it was bigger than the (F) table value, estimated at 3.07, (P<0.05) and freedom degree (2, 77), which indicates that the differences among means of Mental Imagery in its six dimensions among the players are a statistically significant deffirences depending on the variable of the tactical play line.
As represented in *Figure 2* that below.

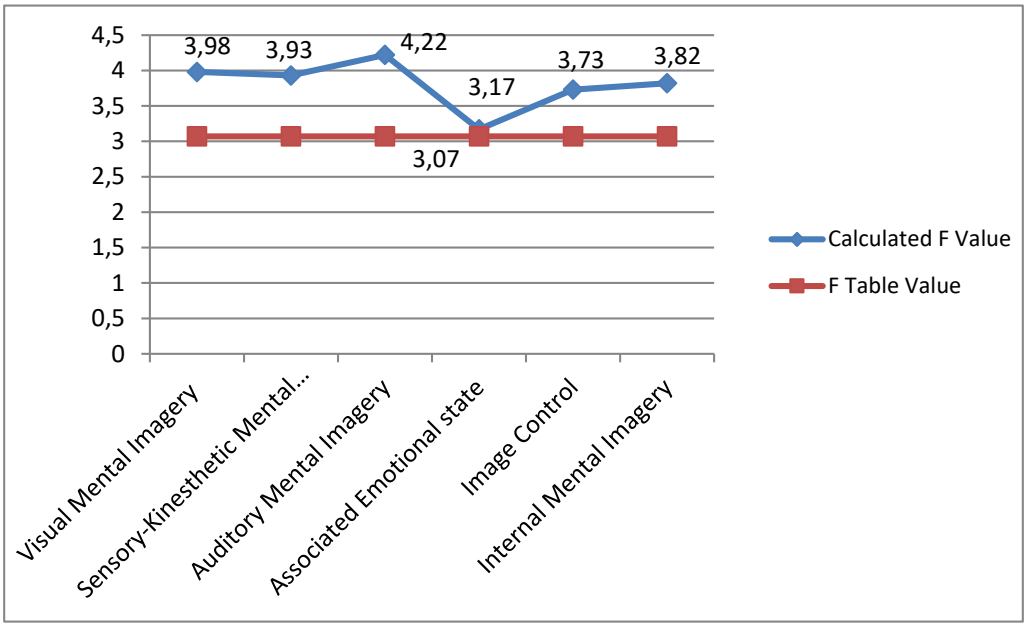

Figure 2. The F Table, The calculated F values for statistically significant deffirences (P<0.05), Freedom degree (2, 77)

Source : (Mahi, 2020).

IV. Discussion

According to the results represented in *Table 03* and its graphic representation in *Figure 1*, we found that the level of Mental Imagery of the players is good. This result can be explained by the interest that began to appear about the mental preparation directed to beginners in football and the training of basic psychological skills such as Imagery Mental, especially at the level of basic formation, and this good level of Mental Imagery among

the members of the study sample is also attributed to that it was acquired by modest experience responding to performance requirements in training and competition.

And through the results represented in *Table 04* and its graphic representation in *Figure 2*, we found that there are statistically significant differences (P<0.05) among the scores of the averages of the three groups in the level of Mental Imagery among soccer players who are less than 20 years old according to the variable of the playing position according to the line (defence, center, attack). This confirms the validity of our hypothesis, and the differences were in favor of the second group, which represents the players of the center play line, and thus we was able to reveal the effect of the tactical play line on the level of Mental Imagery of footballers under 20 years old.

So that, Abu Rayah (2012), through his study, he found a positive relationship between the speed of attacking schematic thinking and the mental abilities of football players, and his study showed statistically significant differences in favor of players with more than (05) years of experience in the speed of offensive schematic thinking and abilities. The mentality of football players, on players with experience of less than (05) years, and thus we believes that the differences in the level of Mental Imagery among members of the three groups (defensive, center and offensive players) can be explained by the fact that the tactical line of the game did not have the same The effect on the level of this mental skill of the players, due to the difference in the players 'response to the requirements of the defensive, offensive and center planning performance during training and competition situations, through the graduation in the youth classes: U10 (U11, U13, U15, U16, U17) to Their goal of reaching the category of less than 20 years, due to the factor of experience and graduation in the same tactical play line for each player, because in decision-making situations, they are a ready and satisfactory solution to identify the relevant action or to respond (Sebbane , Harchaoui , Nacer , Abdadaim, & Remaoun, 2009).

V. Conclusion

Through analyzing and discussing the previous results, we concluded that the level of Mental Imagery is good among footballers under 20 years of age for the first Algerian professional league teams, so the training experiences and competitive situations experienced by the beginners of professional

football across the age stages up to the category (U20) led to his acquisition of the skill of mental visualization within the limits of a good level. All tactical play lines do not have the same requirements for the level of mental visualization skill, evidenced by the differences in the players 'response to them according to their tactical play line, and this is in the category (U20).

Finally, according to previous results, we can mention the need for specialized trainers to pay more attention to the process of mental preparation and training psychological skills, through which the players acquire a better level in the skill of mental visualization, and focus on this mental ability because of its direct relationship to the speed of schematic thinking and the level of performance as a whole. In which (Houar , 2014) recommended the Algerian coaches to guide young players to play according to their positions in the morphological profile and physical and technical capabilities, and train the young players based on the requirements of each position of the game, in addition to our results we recommend to conducting similar studies for various other youth groups, to uncover the effect of the tactical play line on Mental Imagery and why not specifically the playing center as an independent variable, as well as studying other variables related to various basic mental skills (relaxation, focus, attention ....), which is part of the tactico-mental profile of a modern soccer player. On this basis, we recommend that it is necessary to set up a large mental skills player's profile for each tactical play line in football.

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