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The use of mental imagery strategy in improving technical performance by coaches of youth soccer

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Abstract

This study aimed to know the use of mental imagery strategy in improving the technical performance among youth soccer coaches. The pattern of study was represented in 26 coaches of youth categories in the honorary division in Skikda. The two researchers relied on the descriptive approach as well as the questionnaire as a means to gather data. The results showed that the youth soccer coaches depend on both internal and external imagery to develop the technical performance of their players.

I. Introduction

Soccer is the most popular sport in the in the world with 270 million participants. (FIFA, 2007) It is considered a team sport in which performance depends on several factors, including physical, technical-tactical, psychological and social factors. (Stølen et al, 2005)

Indeed, the different psychological factors such as motivation, self-confidence, anxiety control, mental preparation and concentration play a fundamental role in the improvement of soccer players performance. (Mostafa & David, 2014) therefore the allocation of enough time for mental training is considered as a priority for coaches.

The mental training generally, target the development of different psychological skills. (Nideffer, 1985) But it is not limited to the development of these skills only, but it is also frequently used in improving the tactical aspect. (Weinberg & Gould, 2001) and the technical aspect. (Lindsay et al., 2019) and the improvement of rehabilitation process after injuries (Multhaupt & Beuth, 2018) and this is through the use of mental imagery strategy.

Mental imagery is defined as “Imagery means using the senses to create or re-create an experience in one’s mind. Imaging a sport skill is similar to performing the skill, except that athletes experience the action only in their minds”. (Burton & Raedeke, 2008, p.68).

There are two types internal and external in such a way that athletes can take an internal perspective. While the event, the athletes experience the event, see it and feel the movements as if they are performing the skill. themselves in the external perspective, they live the performance from outside their bodies, they see and listen to the image as if they watch themselves on the screen besides.(Burton & Raedeke, 2008)

In order to achieve the point from the mental imagery, it must be involved in the sports training programs. In this context Gould et al. (2002) say:

“Mental skills are like physical skills: becoming proficient with the use of imagery requires a commitment throughout the training season. It is unrealistic to think that a physical or mental skill will be effective in a competitive situation when it is never practiced at any other time. Ideally then, imagery training should become an integral part of daily practice.” (p.62)

In addition to that, the result of the study of Spittle and Morris (2007) advise to use of the internal and external imagery perspective techniques in order to develop open and closed skills with a little preference to the internal one. And for that, the purpose of this study was trying to make the uses of mental imagery strategy familiar for the coaches of the youth categories in Skikda to improve the technical performance of thier players.

2. Method and Materials

2.1. Participants

The study sample included 26 coaches who had been chosen the regular random method and which reached the ratio of 28.88% of the original community.

The original community is represented in youth soccer coaches - Honorary-Division and who were 90 coaches. The community includes all the teams of youth categories which compete for championships (U15 to U19) which are 30 teams.

*Table 1. **The numb er of sample members.***

Number of teams		Number of all coaches	Number of selected coaches
East	15	45	13
West	15	45	13
Sum	**30**	**90**	**26**

Participants characteristics

*Table 2. **Participants characteristics.***

Variables	Answer	Repetition	Percentage %
Age	From 20 to 29	11	42.4
	From 30 to 39	14	53.8
	40 or more	01	3.8
Years of experience	From 1 to 4	10	38.5
	From 5 to 9	06	23
	10 or more	10	38.5
Educational level	High school certificate or less	02	7.7
	Bachelor	11	42.3
	Master	10	38.5
	PhD	03	11.5
Certificate obtained	FAF 1	07	26.9
	FAF 2	04	15.4
	FAF 3	02	7.7
	1st Degree	03	11.5
	2nd Degree	03	11.5
	3th Degree	02	7.7
	CAF C	00	00
	CAF B	01	3.8
	CAF A	07	26.9

Table 2 shows that most of the coaches are between 30 and 39 years old, with a percentage of 53.8%. And 42.4% of them ranged in age from 20 to 29 years, and 3.8% for coaches more than 40 years old. As for the experience, most coaches have experience ranging between 1 and 4 years or more than 10 years, with an equal percentage of 38.5%. As for 23% of coaches, their experience

ranged between 5 and 9 years. Looking at the educational level, most of the coaches have a bachelor's degree with a percentage of 42.3%, and 38.5 of them have a master's degree, 11.5% have a PhD and 7.7% of them have a high school certificate or less. As for the additional certificates obtained, most of the coaches obtained a certificate of FAF3 and CAF A with an equal percentage estimated at 26.9. For the degree 1 and degree 2 certificate, the percentage of coaches obtained was 11.5%. 7.7% for the FAF 3 and the 3th degree and 3.8% for CAF B.

2.2. Study variables

- **The independent variable :** Mental imagery strategy.
- **The dependent variable:** Technical performance.

2.3. Data collection method

The questionnaire was relied on as a means of data collection, as its questions were formulated based on previous studies, as well as on the theoretical material related to mental imagery, and it was divided into three axes as follows:

- The first section: related to the personal informations of the coaches of the youth soccer groups in the state of Skikda - the honorary division -.
- The second section: related to the first sub-hypothesis, which revolves around the use of internal imagery perspective in improving technical performance.
- The third section: related to the second sub-hypothesis, which revolves around the use of external imagery perspective in improving technical performance

The questionnaire was presented in its initial form to four specialists and experts in the field of sciences and techniques of physical and sports activities, with the aim of judging the questions of the questionnaire, to know the extent of their clarity and comprehensiveness for all uses of mental imagery. The questions have been modified according to their opinions.

2.4. Design and Procedure

The study extended from June 10, 2021 to July 5 of the same year, where the researchers formulated the questionnaire questions and verified its validity. After that, the number of participating teams in the honorary division of Skikda state was obtained from the Directorate of Youth and Sports of Skikda State, and a sample was selected. The research as previously explained, the objectives of the study and its logical reasons were explained to the entire sample, as informed consent was obtained from all coaches to answer the questionnaire questions.

2.4. Statistical Analysis

In this study, frequencies and percentages were relied upon, in addition to the chi² test, which was performed using Spss v25.

2. Results

The use of internal imagery perspective

*Table 3. **Coaches' answers about the use of internal imagery perspective.***

Questions	Answer	Repetition	Percentage %	calculated Chi²	Tabular Chi²	Statistical significance
Do you make time for training in mental imagery skills?	Yes	26	100	26	3.84	Statistically Significant
	No	00	00			
What is your assessment of your level of knowledge about mental imagery exercises?	Low	01	3.8	31	5.99	Statistically Significant
	Average	22	84.7			
	Good	03	11.5			
Do you use internal imagery perspective training to improve the technical performance of your players?	Yes	26	100	26	3.84	Statistically Significant
	No	00	00			
What skills are you targeting through internal imagery training?	Shooting	01	3.8	60.92	9.48	Statistically Significant
	Passing	03	11.5			
	Dribbling	01	3.8			
	Ball control	00	00			
	All previous skills	21	80.9			
When do you use internal imagery exercises to improve skills?	Preparatory phase	09	34.7	14	7.81	Statistically Significant
	Pre-competitive phase	03	11.5			
	Competitive phase	01	3.8			
	All phases	13	50			
How are quotas programmed by internal imagery when trying to improve technical performance?	Associated	07	26.9	5.53	3.84	Statistically Significant
	Dissociated	19	73.1			
What time is allocated in internal imagery training when trying to improve technical performance?	Half hour or less	16	61.6	13	5.99	Statistically Significant
	Half to one hour	09	34.6			
	One hour or more	01	3.8			
Do you advise your players to train at home for internal imagery to improve technical performance?	Yes	21	80.8	9.84	3.84	Statistically Significant
	No	05	19.2			

Significance level = 0.05/ Degree of freedom = n-1

Table 3 shows that all coaches make time to mental imagery training to develop thecnical performance of their players, and most of them have an average level about it (84.7%).

All coaches reported that they rely on internal imagery training to develop technical performance, and most of them use it to develop all the suggested skills (shooting, passing, dribbling and ball control) (21 coaches; 80.9%).

As for the phase in which internal imagery training are used, half of the coaches answered that they use it during all phases of the season (50%), with a significant percentage of coaches who use it in the period of physical preparation only (34.7%).

Most coaches also answered that the training sessions with the internal imagery are Dissociated sessions (73.1%) and most of them allocate half hour or less for this training.

Regarding the last question, most coaches (80.8%) answered that they advise their players to train on internal imagery in order to improve their technical performance.

Through the table, it is clear that the calculated Chi^2 is greater than the tabular in all questions, which indicates the presence of statistically significant differences.

The use of external imagery perspective

*Table 4. **Coaches' answers about the use of external imagery perspective.***

Significance level = 0.05/ Degree of freedom = n-1

Questions	Answer	Repetition	Percentage %	calculated Chi^2	Tabular Chi^2	Statistical significance
Do you rely on external imagery training to improve the technical performance of your players?	Yes	26	100	26	3.84	Statistically Significant
	No	00	00			
What skills do you target through external imagery training?	Shooting	02	7.7	52.84	9.48	Statistically Significant
	Passing	02	7.7			
	Dribbling	01	3.8			
	Ball control	01	3.8			
	All previous skills	20	77			
When do you rely on external imagery training to improve skills?	Preparatory phase	08	30.8	15.23	7.81	Statistically Significant
	Pre-competitive phase	02	7.7			

	Competitive phase	02	7.7			
	All phases	14	53.8			
What methods do you use in external imagery training?	Explanation of skills	13	50	00	3.84	Not Statistically Significant
	Videos	13	50			
How are the quotas programmed by external imagery?	Associated	10	38.5	2.38	5.99	Not Statistically Significant
	Dissociated	05	19.2			
	Integrated with internal imagery	11	42.3			
What time is allocated in external imagery training when trying to improve the technical aspect?	Half hour or less	15	57.7	11.61	5.99	Statistically Significant
	Half to one hour	10	38.5			
	One hour or more	01	3.8			
How do you apply external imagery training	Individually	00	00	18.76	5.99	Statistically Significant
	Collectively	08	30.8			
	Both together	18	69.2			
Do you advise your players to watch videos of certain players with high skills?	Yes	26	100	26	3.84	Statistically Significant
	No	00	00			

Table 4 shows that all coaches rely on external imagery training to develop thecnical performance of their players, and most of them use it to develop all the suggested skills (shooting, passing, dribbling and ball control) (77%).

As for the phase in which external imagery training are used, a little more than half of the coaches answered that they use it during all phases of the season (53.8%), with a significant percentage of coaches who use it in the period of physical preparation only (30.8%).

For the method using in external imagery training, (50%) of coaches answered that they explain skills to their players, and (50%) of them they use videos for that.

Most coaches also answered that the training sessions with the external imagery are integrated with internal imagery training sessions (42.3%) with a significant percentage of coaches who use it through associated sessions (38.5%) and most of them allocate half hour or less for this training.

Most coaches apply external imagery individually and collectively in order to improve technical performance.(69.2%)

As for the last question, all coaches answered that they advise their players to watch videos of certain players with high skills.

Through the table, it is clear that the calculated Chi^2 is greater than the tabular in questions No.1 to 3 and 6 to 8, which indicates the presence of statistically significant differences. But not in the questions NO. 4 and 5.

3. Discussion

Internal imagery perspective

Through the results of the second section, we conclude that soccer coaches for youth categories use internal imagery perspective in order to improve the technical performance of their players, and this is according to the previous answers to all questions, which indicates the validity of the first hypothesis which states that soccer coaches for young categories rely on internal imagery perspective To improve the technical performance of players, which is confirmed by the results of the Spittle and Morris (2007) study, which confirmed the use of internal imagery perspective techniques by athletes in order to improve their closed and open skills. This is confirmed by Callow et al. (2013) on the effectiveness of internal imagery perspective in improving technical performance through a comparative experimental study between internal and external mental imagery.

External imagery perspective

We conclude through the results of the third section that soccer coaches for youth categories use external imagery perspective in order to improve the technical performance of their players, and this is according to the previous answers to all questions, which indicates the validity of the first hypothesis which states that soccer coaches for young categories rely on external imagery perspective to improve the technical performance of players, which is confirmed by the results of Spittle and Morris (2007) study which confirmed the use of external imagery perspective techniques by athletes in order to improve their closed and open skills. This is confirmed by Majlesi et al. (2021) on the effectiveness of external imagery perspective in improving technical performance of soccer players Through a pilot study.

4. Conclusion

From collecting the results of the questionnaire, analyzing and discussing the results, the researchers came to accept the first and second hypothesis, from which we conclude that the general hypothesis that provides soccer coaches for young division depends on the strategy of mental imagery to improve the technical performance of their players has been achieved. The study also recommended the need for periodic training courses to improve the level of coaches for youth categories.

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