

Advantage of mental imagery training on skill performance of inter-university football players

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■ ABSTRACT

The aim of the present study was to find out the effects of mental practice on selected football skill. For this purpose of the study, thirty footballer boys studying in B.P.E. 3rd year of L.N.I.P.E., Gwalior, who were attending Yoga class as their instructional class were selected as subjects. The subjects were divided into two groups (experimental group and control group) each group consisted on 15 subjects. The ages of these subjects ranged between 20 to 23 years. The selected soccer skills were juggling, dribbling and wall volley kicking and Start's (1960) technique of mental practice was used for mental imagery training. The technique of mental practice was carried out for six weeks and was performed three days a week. Pre-test and post-test score was taken, to find out the effect of mental practice between experimental and control groups after the training of six week. The data were treated by applying analysis of covariance and level of confidence was chosen at 0.05. The analysis of data using analysis of covariance revealed that post adjusted mean of experimental groups trained by mental imagery practice, showed better efficacy on selected soccer skill mainly juggling (4.75), dribbling(4.46) and wall volley(5.89) which were higher than the F ratio 4.21 needed to be significant.

■ Key Words : Mental practice, Juggling, Dribbling, Wall volley kicking

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Mental imagery, also called visualization and mental rehearsal, is defined as experience that resembles perceptual experience, but which occurs in the absence of the appropriate stimuli for the relevant perception (John, 1999). Whenever we imagine ourselves performing an action in the absence of physical practice, we are said to be using imagery. While most discussions of imagery focus on the visual mode, there exists other mode of experience such as auditory and kinaesthetic that is also important Morris (2005); Taylor and Wilson (2005).

Some of very common examples of mental images are in our daily life such as daydreaming and the mental visualization that occurs while reading a book (Oliver, 2007). When a musician hears a song, he or she can sometimes "see" the song notes in their head, as well as hear them with all their tonal qualities (Roekelein, 2004). This is considered different

from an after-effect, such as an after-image. Calling up an image in our minds can be a voluntary act, so it can be characterized as being under various degrees of conscious control.

Many sports such as golf, tennis and skating, not only require physical skills, but a strong mental game as well. Most coaches preach the line that sports are 90 per cent mental and only 10 per cent physical. Especially in sports where hundredths of a second or tenths of an inch separate the champions from the mediocre athletes, an extra edge can be extremely crucial (Sheikh and Korn, 1994). Hence, numerous athletes are turning towards mental imagery to take their game to the next level. Different uses of imagery in sport include: mental practice of specific performance skills, improving confidence and positive thinking, problem solving, controlling arousal and anxiety performance review and analysis,

preparation for performance, and maintaining mental freshness during injury.

Research scholar gone through the numbers of research conducted on the use of mental imagery and its use in sports and various literatures available in library as well on the internet. On the basis of information gathered from above mentioned sources researcher scholar has conceptualized this study to find out the effect of mental imagery training on selected football skill.

METHODOLOGY

Thirty footballer boys studying in B.P.E. 3rd Year of L.N.I.P.E., Gwalior who were attending Yoga class as their instructional class were selected as subjects for the study and divided into two groups of 15 subjects each. The ages of these subjects ranged between 20 to 23 years. All of them were taking part in routine physical education programme as per the schedule of the college. The selected soccer skills were juggling, dribbling and wall volley kicking. Start's (1960) experimental technique of mental practice was used as experimental treatment which was carried out for six week practice and was performed three days a week. Pre test and Post test score was taken to find out the effect of mental practice. Between experimental group and control group after the training of six weeks. The data was treated by applying analysis of covariance in order to find out the effects of mental practice on selected skill performance in football the level of confidence was chosen at 0.05.

OBSERVATIONS AND DISCUSSION

To determine the effect of mental imagery practice on Juggling, Dribbling and Wall Volley of experimental group and control group analysis of covariance was used and analyses of data pertaining to this study are presented in Tables 1, 2, 3, 4, 5 and 6.

Table 1: Analysis of covariance of the mean of experimental and control groups on juggling

	Group		Sum of square	df	Mean of square	F-ratio
	Experimental group	Control group				
Pre-test mean	36	33.6	43.2	1	43.2	3.98
			303.6	28	10.84	
Post-test mean	38	34.13	116.0	1	116.0	9.48*
			342.66	28	12.23	
Adjusted post-test mean	36.08	34.55	28.11	1	28.11	4.75*
			159.5	27	5.90	

* Indicate significance of values at P=0.05.

The analysis of covariance from Table 1 for juggling indicates that F-ratio applied to the pre test means. The resultant F-ratio is 3.98 that was insignificant at 0.05 levels. From the above it is cleared that the pre-test mean did not differ significantly and random assignment of the subjects in two groups was successful. The post – test means of the all two groups yielded F-ratio value of 9.48* which was significance at 0.05 levels. The difference between the adjusted post-test mean was also found significant as the adjusted F-ratio was 4.75* at 0.05 level of significance. As the difference between the adjusted post-test means for two groups were found significant the critical difference between the paired adjusted final means were not significant difference between all paired adjusted final means are shown in Table 2.

Table 2 : Paired adjusted means and differences between means for experimental and control groups on juggling

Mean		Diff. between means	Critical diff. for adjusted mean
Experimental group	Control group		
37.13	35.07	2.06*	1.81

* Indicate significance of values at P=0.05.

It is evident from Table 2 that means difference of Experimental group and control group was found to be significant at 0.05 levels. The statistical finding of above table reveals that the mental imagery practice of 6 weeks was effective on performance of juggling.

From Table 3 the analysis of covariance for dribbling clearly signify that F-ratio applied to the pre test means. The resultant F-ratio is 0.03 that was insignificant at 0.05 levels. From the above it is cleared that the pre-test mean did not differ significantly and random assignment of the subjects in two groups was successful. The post – test means of the all two groups yielded F-ratio value of 4.27* which was significance at 0.05 levels. The difference between the adjusted post-test mean was also found significant as the adjusted F-ratio was 4.46* at 0.05 level of significance.

Table 3 : Analysis of covariance of the mean of experimental and control groups on dribbling

	Group		Sum of square	df	Mean of square	F-ratio
	Experimental group	Control group				
Pre-test mean	26.6	27.13	2.13	1	2.13	0.30
			193.3	28	6.90	
Post-test mean	25.06	27.2	34.13	1	34.13	4.27*
			223.3	28	7.97	
Adjusted post test-mean	25.24	27.03	23.8	1	23.8	4.46*
			143.8	27	5.32	

* Indicate significance of values at P=0.05.

As the difference between the adjusted post-test means for two groups were found significant the critical difference between the paired adjusted final means were not significant difference between all paired adjusted final means are shown in Table 4.

Table 4 : Paired adjusted means and differences between means for experimental and control group on dribbling

Mean		Diff. between means	Critical diff. for adjusted mean
Experimental group	Control group		
25.24	27.03	1.79*	1.72

* Indicate significance of values at P=0.05.

Table 4 shows that mean difference of xperimental group and control group was found to be significant at 0.05 levels. The statistical finding of above table reveals that the mental imagery practice of 6 weeks was effective on efficacy of dribbling.

Table 5 suggests that the analysis of covariance for wall volley clearly signify that F-ratio applied to the pre test means. The resultant F-ratio is 3.29 that was insignificant at 0.05 levels. From the above it is cleared that the pre-test mean did not differ significantly and random assignment of the subjects in two groups was successful. The post – test means of the all two groups yielded F-ratio value of 4.42* which was significance at 0.05 levels. The difference between the adjusted post-test mean was also found significant as the adjusted F-ratio was 5.89* at 0.05 level of significance. As the difference between the adjusted post-test means for two groups were found significant the critical difference between the paired adjusted final means were not significant difference between all paired adjusted final means are shown in Table 6.

Table 5 : Analysis of covariance of the mean of experimental and control groups on wall volley

	Group		Sum of square	df	Mean of square	F-ratio
	Experimental group	Control group				
Pre-test mean	24.06	25.26	10.8	1	10.8	3.29
Post-test mean	26.06	24.06	30.0	1	30.0	4.42*
Adjusted post-test mean	26.32	23.12	39.09	1	39.09	5.89*
			178.95	27	6.62	

* Indicate significance of values at P=0.05.

Table 6 shows that mean difference of experimental group and control group was found to be significant at 0.05 levels. The statistical finding of above table reveals that the mental imagery practice of 6 weeks was effective on efficacy of wall volley.

Table 6 : Paired adjusted means and differences between means for experimental and control groups on wall volley

Mean		Diff. between means	Critical diff. for adjusted mean
Experimental group	Control group		
26.32	23.12	3.2*	1.92

* Indicate significance of values at P=0.05.

Conclusion :

Researches has shown that the mere visualization of a muscle movement in the mind can create electrical activity in that muscle even though there’s no actual movement in the muscle itself, and also that the pattern of electrical activity closely resembles that seen during actual movement (Floy Washburn, 1973). The analysis of data using analysis of covariance revealed that experimental groups trained by mental imagery practice, showed better efficacy on selected soccer skill mainly Juggling, Dribbling and Wall Volley. There was no change found in control group because the control group was not edged in any type of mental imagery practice as the experimental groups were. The better performance of experimental group as compared to the control group may be due to the fact that the experimental groups have undergone a systematic and progressive training program (thrice a week) for duration of six weeks whereas control groups did not participated in any kind of formal training. It is well knows facts that to perform any skill in game and sports a athletics should equally prepare himself physically and mentally then only he is able to implement that skill with maximum efficiency. Mentally imagery preparation helps athletics to make himself ready in advance for the task he is going to perform and it help to overcome the psychological problem that could have been hindered his performance (Guillot *et al.*, 2010). In this study also the subjects were preparing themselves psychological with the practice of mental imagery program for the skills which they were going to employ and which help them to perform the skill with more confidence and to bring more efficacies while executing the skill better then the control group after the 6 weeks of mental imagery practice.

In Moran (1993) conducted a study which examined the influence of mental practice on sports skills. While most of the previous studies on this topic showed positive effects of mental rehearsal. In a recent experiment conducted by C. Deschaumes *et al.* (1992) they found six specific autonomic nervous system (ANS) responses that correlated with mental rehearsal, thereby improving sports performance. The subjects were placed into an imagery group and a control group. The task measured in each group was based on their ability to pass an opponent serve to a given teammate, in the sport of volleyball. The ANS parameters tested included: skin potential and resistance, skin temperature and heat clearance, instantaneous heart rate and respiratory frequency. The results

of the test revealed a strong correlation between the response in the actual physical tasks (both pre- and post-test volleyball) and during the mental imagery sessions. There existed a difference in the skills between the imagery and the control group. Result of this study was also supported by Neck and Charles (1992), Martha (1980) conducted the similar study on influence of mental imagery practice on different sports.

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