RESEARCH PAPER | Education | Volume : 6 | Issue : 4 | April 2016 | ISSN - 2249-555X | IF : 3.919 | IC Value : 74.50

Impact of Specific Preparatory Training on Selected Coordinative Abilities of Positional Inter Collegiate Football Players

KEYWORDS: ANOVA, Specific Preparatory Period, Forward, Mid Field, Defense Position

Dr.Manas Das

Physical Education Teacher, C/O Belonia, Kalinagar (Village), Dist: South Tripura-799155

ABSTRACT *Football is the world's most popular form of sport being played by every nation without exception. Football's most wide spread code is association football or soccer. For this study, Twenty four intercollegiate college men football players (8 Forward, 8 mid fields, 8 Defenders) were selected as subjects. They were selected from various colleges in Coimbatore city, Tamil Nadu. Their ages ranged from 17 to 28 years. The selected criterion variables are selected space orientation ability and agility. The variables measured with numbered medicine ball test and agility tested with 4x10 shuttle run. Twelve weeks of specific preparatory training was given to the selected subjects. Their training days and hours every week were from Monday to Friday from 5.oo to 6.30 pm. The results shows that pretest, the subject in the forward position group, midfield position group and defense position group are treated with specific preparatory training for five days a week and for duration of 12 weeks. Mid tests are conducted after 6 weeks of training and post tests are conducted in all the variables for all the four groups after 12 weeks of training. The collected data treated with Repeated measures ANOVA is applied. When the F ratio is found to be significant Newman-Keuls post hoc test is applied to test which of the possible comparison among the means are significant. Analysis of Covariance is applied to determine the significant difference among the three groups namely forward position group, midfield position group and defense position group on the development of selected variables after 12 weeks of training. If the F ratio is significant to find out which of the paired adjusted final group means is significant, scheffe's post-hoc test is applied. The results shows that Impact of specific preparatory training on selected coordinative abilities space orientation ability and agility improved.*

INTRODUCTION

Soccer, or association football, as it is commonly called, is played in virtually every country in the world. It is very popular with people because it can be played almost anywhere on any surface and in all weather conditions. Secondly, it can be played by adults and children or both the genders. Thirdly, all that is needed to play soccer is a ball of some kind or sometimes even a tin can will do. Whether it is two children playing in the street or two teams batting it out in the world cup final, it is soccer all the way. The game soccer consists of many elements namely passing, controlling, shooting, dribbling, goal keeping and heading. This variety of functions makes soccer exciting and enjoyable, but it also makes it challenging. To be a good player, one needs to master many skills, and the only way to achieve this is by practicing correctly and regularly over a long period of time. The word 'training has been a part of human language since ancient times. It denotes the process of preparation for some task. This process invariably extends over a number of days, even months and years. The term training is widely used in sports.

METHODLOGY

Twenty four intercollegiate college men football players (8 Forward, 8 mid fields, 8 Defenders) were selected as subjects. They were selected from various colleges in Coimbatore city, Tamil Nadu. Their ages ranged from 17 to 28 years. The selected criterion variables are selected space orientation ability and agility. The variables measured with numbered medicine ball test and agility tested with 4x10 shuttle run. Twelve weeks of specific preparatory training was given to the selected subjects. Their training days and hours every week were from Monday to Friday from 5.oo to 6.30 pm. The results shows that pretest, the subject in the forward position group, midfield position group and defense position group are treated with specific preparatory training for five days a week and for duration of 12 weeks. Mid tests are conducted after 6 weeks of training and post tests are conducted in all the variables for all the four groups after 12 weeks of training. The collected data treated with Repeated measures ANOVA is applied. When the F ratio is found to be significant Newman-Keuls post hoc test is applied to test which of the possible comparison among the means are significant. Analysis of Covariance is applied to determine the significant difference among the three groups namely forward position group, midfield position group and defense position group on the development of selected variables after 12 weeks of training. If the F ratio is significant to find out which of the paired adjusted final group means is significant, scheffe's post-hoc test is applied.

RESULTS

TABLE-1

ONE WAY REPEATED MEASURES ANOVA ON SELECTED VARIABLES OF PRE, MID AND POST TESTS OF FORWARD POSITION GROUP

Variables	Sources of variance	Sum of Squares	df	Mean Squares	Obtained 'F' ratio
Space orientation ability	Between	4.951	2	2.475	19.813*
	Error	1.749	14	0.125	
Agility	Between	6.813	2	3.407	90.557*
	Error	0.527	14	0.038	
	Error	24.250	14	1.732	

*Significant at 0.05 level. The table value required for significance at 0.05 level with df 2 and 14 is 3.738.

Table I shows that the obtained F-ratio values of forward position group on the selected variables namely space orientation ability, agility, are greater than the table value of 3.738with df 2 and 14 required for significance at 0.05 level of confidence.

Volume : 6 | Issue : 4 | April 2016 | ISSN - 2249-555X | IF : 3.919 | IC Value : 74.50

The result of the study indicate that there is a significant difference among the means of three tests of forward position group in space orientation ability, agility, To find out which of the three paired means had a significant difference, the Newman Keuls post hoc test is applied and the results are presented in table II

TABLE -II
NEWMAN KEULS TEST FOR THE DIFFERENCES BETWEEN TREATMENT MEANS OF SPACE ORIENTATION ABILITY OF FORWARD POSITION GROUP

Means Pre test 9.3		Ordered means			Range (r)	Critical Value
		Mid test	Post test			
		8.8	8.2			
Pre test	9.3	-	0.5*	1.1*	3	0.462
Mid test	8.8	-		0.6*	2	0.378
Post test	8.2	-	-	-		

*Significant.

TABLE - III
NEWMAN KEULS TEST FOR THE DIFFERENCES BETWEEN TREATMENT MEANS OF AGILITY OF FORWARD POSITION GROUP

Means Pre test 10.3		Ordered means			Range (r)	Critical Value
		Mid test	Post test			
		9.6	9.0			
Pre test	10.3	-	0.7*	1.3*	3	0.255
Mid test	9.6	_		0.6*	2	0.208
Post test	9.0	-	-	-		

*** Significant.**

TABLE–IV
ONE WAY REPEATED MEASURES ANOVA ON SELECTED VARIABLES OF PRE, MID AND POST TESTS OF MID FIELD POSITION GROUP

Variables	Sources of variance	Sum of Squares	df	Mean Squares	Obtained 'F' ratio
Space orientation ability	Between	1.211	2	0.605	11.314*
	Error	0.749	14	0.054	
Agility	Between	3.006	2	1.503	28.659*
	Error	0.734	14	0.052	
	Error	27.667	14	1.976	

*Significant at 0.05 level. The table value required for significance at 0.05 level with df 2 and 14 is 3.738.

Table IV shows that the obtained F-ratio values of midfield position group on the selected variables namely space orientation ability, agility, are greater than the table value of 3.738 with df 2 and 14 required for significance at 0.05 level of confidence.

The result of the study indicates that there is significant difference among the means of three tests of midfield position group in space orientation ability, agility To find out which of the three paired means had a significant difference, the Newman Keuls post hoc test is applied and the results are presented in table-V.

TABLE - V
NEWMAN KEULS TEST FOR THE DIFFERENCES BETWEEN TREATMENT MEANS OF SPACE ORIENTATION ABILITY OF MIDFIELD POSITION GROUP

Means Pre test 9.3		Ordered means			Range (r)	Critical Value
		Mid test	Post test			
		9.0	8.7			
Pre test	9.3	-	0.3*	0.6*	3	0.303
Mid test	9.0	-	-	0.3*	2	0.248
Post test	8.7	-	-	-		

* Significant.

TABLE - VI
NEWMAN KEULS TEST FOR THE DIFFERENCES BETWEEN TREATMENT MEANS OF AGILITY OF MIDFIELD POSITION GROUP

Means Pre test 10.3		Ordered means			Range (r)	Critical Value
		Mid test	Post test			
		9.6	9.4			
Pre test	10.3	-	0.7*	0.9*	3	0.298
Mid test	9.6	-	-	0.2	2	0.244
Post test	9.4	-	-	-		

* Significant.

TABLE - VII
ONE WAY REPEATED MEASURES ANOVA ON SELECTED VARIABLES OF PRE, MID AND POST TESTS OF DEFENSE POSITION GROUP

Variables	Sources of variance	Sum of Squares	df	Mean Squares	Obtained 'F' ratio
Space orientation ability	Between	0.491	2	0.245	5.186*
	Error	0.662	14	0.047	
Agility	Between	0.576	2	0.288	56.906*
	Error	0.071	14	0.005	
	Error	34.917	14	2.494	

*Significant at 0.05 level. The table value required for significance at 0.05 level with df 2 and 14 is 3.738.

Table VII shows that the obtained F-ratio values of defense position group on the selected variables namely space orientation ability, agility are greater than the table value of 3.738 with df 2 and 14 required for significance at 0.05 level of confidence.

The result of the study indicates that there is significant difference among the means of three tests of defense position group in space orientation ability, agility To find out which of the three paired means had a significant difference, the Newman Keuls post hoc test is applied and the results are presented in table VIII.

TABLE - VIII
NEWMAN KEULS TEST FOR THE DIFFERENCES BETWEEN TREATMENT MEANS OF SPACE ORIENTATION ABILITY OF DEFENSE POSITION GROUP

Means Pre test 9.3		Ordered means			Range (r)	Critical Value
		Mid test	Post test			
		9.1	9.0			
Pre test	9.3	-	0.2	0.3*	3	0.283
Mid test	9.1	-		0.1	2	0.232
Post test	9.0	-	-	-		

* Significant.

Volume : 6 | Issue : 4 | April 2016 | ISSN - 2249-555X | IF : 3.919 | IC Value : 74.50

TABLE - IX
NEWMAN KEULS TEST FOR THE DIFFERENCES BETWEEN TREATMENT MEANS OF AGILITY OF DEFENSE POSITION GROUP

Means Pre test 10.2		Ordered means			Range (r)	Critical Value
		Mid test	Post test			
		10.0	9.9			
Pre test	10.2	-	0.2*	0.3*	3	0.092
Mid test	10.0	-		0.1*	2	0.075
Post test	9.9	-	-	-		

* Significant.

TABLE -X
ANALYSIS OF COVARIANCE FORWARD POSITION GROUP MIDFIELD POSITION GROUP AND DEFENSE POSITION GROUP ON SPACE ORIENTATION ABILITY

Test	Forward position group	Midfield position group	Defense position group	Source of variance	Sum of square	df	Mean square	F-ratio
Pre Test mean	9.3	9.3	9.3	Between	0.011	2	0.005	0.018
				Within	6.189	21	0.295	
Post test mean	8.2	8.7	9.0	Between	2.572	2	1.286	4.147*
				Within	6.514	21	0.310	
Adjusted post test mean	8.2	8.7	9.0	Between	2.565	2	1.283	10.630*
				Within	2.413	20	0.121	

* Significant at 0.05 level. Table value for df2 and 21 is 3.466 and for df2 and 20 is 3.492

Table X reveals the computation of 'F' ratios on pre test, post test and adjusted post test means of space orientation ability of forward position group, midfield position group and defense position group.

The obtained 'F' ratio for the pre test means of space orientation ability of forward position group, midfield position group and defense position groupis1.018. Since the 'F' value is less than the required table value of 3.466 for the degrees of freedom 2 and 21, it is found to be not significant at 0.05 level of confidence.

Further, the post test 'F' ratio 4.147 is higher than the required table value of 3.466 for the degrees of freedom 2 and 21 and hence it is found to be statistically significant at 0.05 level of confidence.

The obtained 'F' ratio for the adjusted post test means of space orientation ability of forward position group, midfield position group and defense position groupis10.630. Since the 'F' value is higher than the required table value of 3.492 for the degree of freedom 2 and 20, it is found to be statistically significant at 0.05 level of confidence.

Since the obtained 'F' ratio is found to be significant, scheffe's post hoc test is applied to find out which of the paired adjusted final means differ significantly. The result of the scheffe's post hoc test is presented in the table XI.

TABLE -XI
SCHEFFE'S POST HOC TEST FOR THE DIFFERENCES BETWEEN THE PAIRED ADJUSTED POST-TEST MEANS OF SPACE ORIENTATION ABILITY

Forward position group	Midfield position group	Defense position group	Mean difference	CI
8.2	8.7		0.5*	0.459
8.2		9.0	0.8*	
	8.7	9.0	0.3*	

* Significant

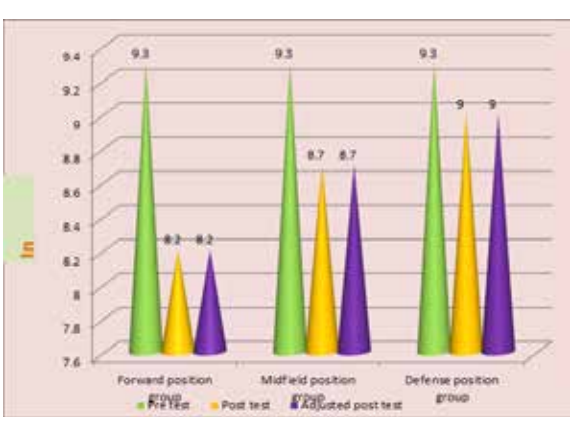
Table XI reveals the adjusted post test mean differences on space orientation ability between the forward position group and midfield position group; forward position group and defense position group; midfield position group and defense position group.

It is inferred that there is significant mean difference between the adjusted post test means of forward position group and midfield position group; forward position group and defense position group in space orientation ability.

It is inferred that there is no significant mean difference between the adjusted post means of midfield position group and defense position group in space orientation ability.

The adjusted post test mean values of forward position group, midfield position group and defense position group are graphically presented in figure 1

FIGURE -1



ADJUSTED POST TEST MEAN VALUE OF FORWARD POSITION GROUP MIDFIELD POSITION GROUP AND DEFENSE POSITION GROUP ON SPACE ORIENTATION ABILITY

Volume : 6 | Issue : 4 | April 2016 | ISSN - 2249-555X | IF : 3.919 | IC Value : 74.50

TABLE - XII
ANALYSIS OF COVARIANCE FORWARD POSITION GROUP MIDFIELD POSITION GROUP AND DEFENSE POSITION GROUP ON AGILITY

Test	Forward position group	Midfield position group	Defense position group	Source of variance	Sum of square	df	Mean square	F-ratio
Pre Test mean	10.3	10.3	10.2	Between	0.017	2	0.009	0.035
				Within	5.229	21	0.249	
Post test mean	9.0	9.4	9.9	Between	2.977	2	1.489	6.169*
				Within	5.068	21	0.241	
Adjusted post test mean	9.0	9.4	9.9	Between	3.331	2	1.666	21.783*
				Within	1.529	20	0.076	

* Significant at 0.05 level. Table value for df2 and 21 is 3.466 and for df2 and 20 is 3.492

Table XII reveals the computation of 'F' ratios on pre test, post test and adjusted post test means of agility of forward position group, midfield position group and defense position group.

The obtained 'F' ratio for the pre test means of agility of forward position group, midfield position group and defense position groupis0.035. Since the 'F' value is less than the required table value of 3.466 for the degrees of freedom 2 and 21, it is found to be not significant at 0.05 level of confidence.

Further, the post test 'F' ratio 6.169ishigher than the required table value of 3.466 for the degrees of freedom 2 and 21 and hence it is found to be statistically significant at 0.05 level of confidence.

The obtained 'F' ratio for the adjusted post test means of agility of forward position group, midfield position group and defense position groupis21.783. Since the 'F' value is higher than the required table value of 3.492 for the degree of freedom 2 and 20, it is found to be statistically significant at 0.05 level of confidence.

Since the obtained 'F' ratio is found to be significant, scheffe's post hoc test is applied to find out which of the paired adjusted final means differ significantly. The result of the scheffe's post hoc test is presented in the table XIII.

TABLE – XIII
SCHEFFE'S POST HOC TEST FOR THE DIFFERENCES BETWEEN THE PAIRED ADJUSTED POST-TEST MEANS OF AGILITY

Forward position group	Midfield position group	Defense position group	Mean difference	CI
9.0	9.4		0.4*	0.364
9.0		9.9	0.9*	
	9.4	9.9	0.5*	

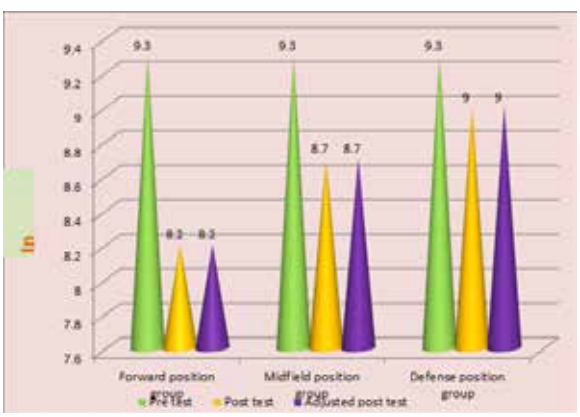
* Significant

Table XIII reveals the adjusted post test mean differences on agility between the forward position group and midfield position group; forward position group and defense position group; midfield position group and defense position group.

It is inferred that there is significant mean difference between the adjusted post test means of forward position group and midfield position group; forward position group and defense position group; midfield position group and defense position group in agility.

The adjusted post test mean values of forward position group, midfield position group and defense position group are graphically presented in figure 2.

FIGURE - 2



ADJUSTED POST TEST MEAN VALUE OF FORWARD POSITION GROUP MIDFIELD POSITION GROUP AND DEFENSE
POSITION GROUP ON AGILITY

DISCUSSION ON FINDINGS

The results of the present study evidenced that the specific preparatory training contributes the significant progresses on space orientation ability in forward, midfield and defense position groups.

Football players must have the space orientation ability for overcoming the opponent with efficient movement. The systematic and scientific creation of the specific preparatory training is advantageous for improving the agility.

Lester, Mark E.;& Sharp. (2013)., Localizacion Cecile Bisch& Christopher.(2008) Loturco,&Irineu. (2013)., M Chtara, & K Chamari.(2005) proved that there is an improvement in space orientation ability.

Football players must have the agility for overcoming the opponent with quick turn and speed with the ball. The systematic and scientific creation of the specific preparatory training is advantageous for improving the agility.

Metaxas T., Sendelides T., Koutlianos N.,&Mandroukas K.(2006), Millet GP, &Jaouen B.(2002)., Naclerio,& Fernando. (2013)., Perez, G, J., (2008) Pienaar, C. & Coetzee B. (2013) proved that there is an improvement in agility.

CONCLUSIONS

Volume : 6 | Issue : 4 | April 2016 | ISSN - 2249-555X | IF : 3.919 | IC Value : 74.50

Impact of specific preparatory training on selected coordinative abilities space orientation ability and agility improved.

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