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Motor educability among school level male athletes

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Abstract

The purpose of the present study was to analyse motor educability among school level male athletes of Punjab. Study was focused on a sample of seventy five (N=75) athletes, which includes twenty five each, district (25), state (25) and national (25) level male athletes of age ranging from 16 to 18 years. All the subjects were informed about the objective and protocol of the study. Data was collected with the help of Metheny-Johnson Motor Educability Test. One way Analysis of Variance (ANOVA) to find out the intra-group differences and where the 'F' ratio found significant then Scheffe's Post-hoc test was applied to find out the direction and degree of differences. To test the hypothesis, the level of significance was set at 0.05. Results revealed statistically significant ($p < 0.05$) differences with regard to jumping half-turns among district, state and national level athletes. It is also concluded that statistically significant differences were found with regard to jumping full-turns between district and national level athletes.

Keywords: athletes, motor educability.

Introduction

Today Sports and games are competitive in nature; Sports performance has taken a great leap over the last twenty years. Technology has enhanced our level of performance greatly through improved equipment, nutritional product, anthropometric characteristics, training methods (physical & psychological) and many more. A study resulted as various anthropometric characteristics have clear impact on the competition level of the volleyball players (Gaurav, V. *et al.*, 2015) [6]. Top form is a product of training state and interrelationship among the various components. Performance in a given sport is a complex combination of several factors. Certain factors are dominating factors and other supportive (Barrow and MaGee, 1979) [1]. Singh, A. *et al.* (2015) [11] found in their study that inter-university group had statistically significant better achievement motivation than inter-college and state level basketball players. In the current scenario motor educability emerge as a burning issue among sports scientist. The quality of motor educability is the ability to learn motor skills easily and well (Baumngartner & Jackson, 1995) [2]. In other word, motor educability is the general ability to learn a task immediately and precisely (Rusli Lutan, 1988) [10]. In other words, motor educability refers to one's level of ease with which one learns new motor skills. As in intelligence testing in education, so is motor educability testing (Motor intelligence) in physical education. Although, the validity of motor educability tests at their ability to predict motor skill learning has not been established, yet a large number of motor educability test batteries have been published (Brace, 1941, Johnson, 1932, Metheny 1938, McCloy and Young 1954) [3, 5, 9, 8]. Earlier, in 1958, Franklin Henry's Memory-Drum theory of narrow muscular reaction advocated that motor learning ability is task specific rather than general to various motor skills. Development of the motor ability is an important part of a child's physical development. Henry's claims supported by many studies where a very low (0.46 or less) value of correlation between different types of motor educability tests has been reported. However all the researcher agrees on the significance and benefits of motor educability as the key to create champions, but high quality research into motor educability is limited. Therefore, this study is an effort to discover the like lihood of; there could be significant group differences in respect of motor educability among district, state and national level male athletes.

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Materials and Methods

Subjects

For the purpose of the present study, seventy five (N=75) male subjects representing district, state and national level in athletics, the age group of 16-18 years were selected as subjects. The subjects were purposively assigned into three groups: Group-A: District (N₁=25); Group-B: State (N₂=25) and Group-C: National (N₃=25). All the subjects were informed about the objective and protocol of the study. The purposive sampling technique was used to select the subjects.

Methodology

To measure the motor educability of subjects the Metheny-Johnson Motor Educability Test was applied. This test includes front roll, back roll, jumping half-turns and jumping full-turns. Necessary instructions were given before attempting the test and each and every step was explained to the subjects briefly.

Statistical Analyses

One way Analysis of Variance (ANOVA) to find out the intra-group differences and where the 'F' ratio found significant then Scheffe's Post-hoc test was applied to find out the direction and degree of differences. To test the hypothesis, the level of significance was set at 0.05.

Results

Table 1: Mean & SD of District, State and National level Athletes with regard to Motor Educability's Components

Variable	District		State		National	
	Mean	SD	Mean	SD	Mean	SD
Front Roll (Count)	6.04	0.97	6.36	1.68	6.08	1.57
Back Roll (Count)	6.24	1.42	6.56	1.70	6.96	1.45
Jumping Half Turn (Count)	6.44	1.47	6.40	1.73	7.84	1.14
Jumping Full Turn (Count)	5.96	1.76	6.92	1.60	7.56	1.32

Table 1 shows the Mean values (±SD) of athletes of different level of competition (District, State and National) with regard to Motor Educability's components. While comparing the means, it revealed that National Level Athletes had better Back Roll, Jumping Half-Turn and Jumping Full-Turn than District and State Level Athletes.

Table 2: Analysis of Variance (ANOVA) Results with regard to Motor Educability among District, State and National Level Athletes

Variables	Source of variance	Sum of Squares	df	Mean Square	F-ratio	Sig.
Front Roll	Between Groups	1.520	2	0.760	0.363	0.697
	Within Groups	150.56	72	2.091		
	Total	152.08	74			
Back Roll	Between Groups	6.05	2	3.253	1.380	0.258
	Within Groups	169.68	72	2.357		
	Total	176.18	74			
Jumping Half-Turns	Between Groups	33.62	2	16.813	7.784	0.001*
	Within Groups	155.52	72	2.160		
	Total	189.14	74			
Jumping Full-Turns	Between Groups	32.42	2	16.213	6.523	0.002*
	Within Groups	178.96	72	2.486		
	Total	211.387	74			

Table-2 shows the Analysis of Variance (ANOVA) results which revealed that significant differences were found among athletes of different levels of competition i.e. District, State and National with regard to Jumping Half-Turns ($p < 0.05$) and Jumping Full-Turns ($p < 0.05$). Since the obtained F-value was

found significant of these two, hence Post-Hoc (Scheffe) Test was applied to see the direction and significance of difference between the paired Means of Athletes of different levels of competition (District, State and National) with regard to Jumping Half-Turns and Jumping Full-Turns. Post-Hoc (Scheffe) results have been given in Table-3 below.

Table 3: Comparison of Mean Values of Post-Hoc Test (Scheffe) among Athletes of different levels of competition with regard to Jumping Half-Turns and Jumping Full-Turns.

Variables	Athletes			Mean Difference	Sig.
	District	State	National		
Jumping Half-Turns	6.44	6.40		0.04	0.995
	6.44		7.84	1.40	0.005*
		6.40	7.84	1.44	0.004*
Jumping Full-Turns	5.96	6.92		0.96	0.106
	5.96		7.56	1.60	0.003*
		6.92	7.56	0.64	0.362

Ag glance at table-3 showed that national level athletes has exhibited statistically significant ($p < 0.05$) differences as compare to district and state level athletes on jumping half-turns. National athletes has also shown statistically significant ($p < 0.05$) differences as compare to district level athletes with regard to jumping full-turns.

Discussion

The results of jumping half turn in the present study is supported by the results of partially in line with the results of Karkare, A. (2012) [7], as he concluded that non-tribal boys had significance better on the account of jumping half-turns compare to their counterparts. Results also supported by the investigation of Das, J. (2014) [4]. As he concluded that Group of under-13 girls had significantly better than other groups in relation to jumping half-turns. The result of current investigation in respect to jumping full-turns is in line with the outcome of Sings, S & Kumar, S (2014) [12], as they discovered in their study that there was no significance difference among foil, sabre and epee fencers in relation to jumping full-turns. Das, J. (2014) [4] study also partially in line as he establishes no difference in relation to jumping full-turns between under-11 and under-12 year's girls groups. Investigation done by Karkare, A. (2012) [7] is also partially in contrast as they found that non-tribal boys had significantly performed better than tribal boys & girls and non-tribal girls.

Conclusion

It is concluded that statistically significant differences were found with regard to jumping half-turns among district, state and national level athletes. It is also concluded that statistically significant differences were found with regard to jumping full-turns between district and national level athletes.

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