

COMPARISON BETWEEN SELECTED COORDINATIVE ABILITIES AND MOTOR ABILITIES OF FEMALE ATHLETES OF SELECTED INTERNATIONAL SCHOOLS IN PUNE

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DOI: 10.26524/1231

ABSTRACT The article presents a study regarding the coordinative and motor ability comparison of female athletes from international schools including Victorious Kids, Mercedes Benz, and Symbiosis International School in Pune, India. Methods used include motor ability testing, standard deviation, and data analysis. Result shows that female athletes from Mercedes Benz school possessed the best explosive power in the 12 minute run/walk.

Key words: Coordinative Abilities, Motor Abilities, Female Athletes

INTRODUCTION

Sport has become a part and parcel of our culture. It is being influenced and does influence all of our social institutions including education, economics, arts, politics, law, mass communication and international diplomacy – its scope is awesome [1-5]. Today sport has become mass participation; it is being adopted as fashion by some. It attracts the mass either for recreation or physical fitness, or as a profession. Every sportsman has to be physically, physiologically and psychologically fit. This includes fitness, skill, physical endowment and psychological or behavioral dimension. Sports hold a prominent place in modern life. Millions of people participate in sports activities, watch and hear about them and spend billions of dollars actually on sports related activities and equipments [6-11]. This has led to the competitive element in sports, as now sportsman participate to win and achieve laurels for them as well as for their country contrary to earlier philosophy of participation in sports competition for participation's sake.

METHODOLOGY

Selection of the subjects

In the present study Ninety female subjects age ranged from 15 to 17 years were selected from three international schools (Symbiosis International School, Victorious Kids and Mercedes Benz) of Pune, Maharashtra, India. Thirty subjects were selected from each of the schools.

Selection of variables

The following table – 1, shows coordinative abilities and motor abilities test-retest correlation selected for the study and the tests used for the study.

Table - 1

Test-retest correlation coefficient of Coordinative Ability and Motor Ability

Sr. No.	Variables	Tests	'r'
1	Reaction ability	Ball reaction Exercise Test	0.90*
2	Orientation ability	Numbered Medicine Ball run test	0.88*
3	Differentiation ability	Backward Medicine Ball Throw Test	0.89*
4	Rhythmic ability	Sprint at the Given Rhythm Test	0.91*
5	Explosive strength	Standing broad jump	0.89*
6	Speed	50 meter dash	0.92*

7	Agility	4 x 10 shuttle run	0.90*
8	Cardio respiratory endurance	Cooper 12 min run/walk	0.91*

* Significant at 0.05 level of confidence

Sample of ten (10-2=8)= „r“ = 0.632

Statistical techniques employed for the analysis of data

To compare the selected coordinative abilities and motor abilities of female athletes of international schools, the mean, standard deviation and Analysis of variance was applied at 0.05 level of significance.

Findings

The findings with regards to the present study have been presented in two sections. Section one deals with the characteristics of selected Coordinative abilities and Motor Ability and section two deals with the comparison of Coordinative abilities and Motor Ability belonging to Symbiosis International School, Victorious Kids, and Mercedes Benz female athletes of Pune, Maharashtra state, India respectively.

Section One

The findings pertaining to all the categories have been given: To study characteristics of Coordinative abilities and Motor Ability belonging to Symbiosis International School, Victorious Kids, and Mercedes Benz female athletes of Pune, Maharashtra state, India. The mean and standard deviations were computed and results pertaining to that have been presented in Table – 2 and Table – 3.

Table – 2

Descriptive statistics of Female athletes (Symbiosis, Victorious and Mercedes) of Pune Maharashtra State, INDIA in relation to Coordinative Ability Variables

Coordinative abilities	Level	N	Mean	S.D.
Reaction Ability (Cm)	Symbiosis International School	30	92.76	5.02
	Victorious Kids	30	92.36	7.60
	Mercedes Benz	30	93.56	6.29
	Total	90	92.90	6.34
Orientation Ability (Sec.)	Symbiosis International School	30	8.46	0.25
	Victorious Kids	30	7.64	0.83
	Mercedes Benz	30	8.25	0.42
	Total	90	8.12	0.65
Differentiation Ability (Max. Points scored)	Symbiosis International School	30	7.40	2.19
	Victorious Kids	30	9.40	2.83
	Mercedes Benz	30	9.40	2.74
	Total	90	8.73	2.74
Rhythmic Ability (Sec)	Symbiosis International School	30	1.44	0.18
	Victorious Kids	30	1.56	0.21
	Mercedes Benz	30	1.55	0.19
	Total	90	1.52	0.20

Table – 3

Descriptive statistics of Female athletes (Symbiosis, Victorious and Mercedes) of Pune Maharashtra State, INDIA in relation to Motor Ability Variables

Motor Variables	Levels	N	Mean	S.D.
Standing Broad Jump (meters)	Symbiosis International School	30	2.205	0.26
	Victorious Kids	30	2.202	0.26
	Mercedes Benz	30	2.399	0.28
	Total	90	2.269	0.28
50m dash (sec)	Symbiosis International School	30	7.26	0.42
	Victorious Kids	30	7.22	0.57
	Mercedes Benz	30	7.23	0.56
	Total	90	7.24	0.51
12 min. Run/Walk	Symbiosis International School	30	30.09	5.97
	Victorious Kids	30	29.01	6.31
	Mercedes Benz	30	38.65	5.85
	Total	90	32.59	7.38
4 x 10 m shuttle run (sec)	Symbiosis International School	30	10.97	1.12
	Victorious Kids	30	11.00	0.92
	Mercedes Benz	30	11.24	1.36
	Total	90	11.07	1.14

Section Two

Section two deals with the comparison of Symbiosis International School, Victorious Kids, and Mercedes Benz female athletes of Pune, Maharashtra state, India. To observe the difference among athletes belonging to different schools, the analysis of variance was adopted and results pertaining to these have been presented in Table – 4 to Table – 11.

Table – 4

Analysis of variance of Symbiosis International School, Victorious Kids, and Mercedes Benz female athletes of Pune, Maharashtra state, India in relation to Reaction Ability

	Sum of Squares	df	Mean Square	F
Between Groups	22.400	2	11.200	.274
Within Groups	3559.700	87	40.916	
Total	3582.100	89		

Tab. F .05 (2, 87)= 3.09

It appears from the Table – 4 that the computed value of F (.274) among different schools of Symbiosis International School, Victorious Kids, and Mercedes Benz female athletes in relation to Reaction ability was less than the tabulated (3.09), F at .05 level. Therefore null hypothesis among selected international schools in relation to reaction ability was accepted at 0.05 level.

Table – 5

Analysis of variance of Symbiosis International School, Victorious Kids, and Mercedes Benz female athletes in relation to Orientation ability

	Sum of Squares	df	Mean Square	F
Between Groups	10.691	2	5.345	17.001*
Within Groups	27.354	87	.314	
Total	38.045	89		

Tab. F .05 (2, 87)= 3.09

It appears from the Table – 5 that the computed value of F (17.001) among Symbiosis International School, Victorious Kids, and Mercedes Benz female athletes in relation to orientation ability was greater than the tabulated (3.09), F at .05 level. Therefore null hypothesis among selected international schools in relation to orientating ability was not accepted at 0.05 level.

To further analyze which group differ significantly post hoc test (LSD) was applied.

Table-5.1

Mean Comparison of Symbiosis International School, Victorious Kids, and Mercedes Benz female athletes in relation to Orientation ability

Symbiosis International School	Victorious Kids	Mercedes Benz	M.D.	C.D.
8.46	7.64		0.82*	0.28
8.46		8.25	0.21	
	7.64	8.25	0.61*	

The above table reveals that significant difference was found in case of Symbiosis and Victorious Kids, Victorious Kids and Mercedes Benz. No significant difference was found in case of Symbiosis and Mercedes Benz as the mean difference was less than the critical value of 0.28 at 0.05 level of significance.

Table – 6

Analysis of variance of Symbiosis International School, Victorious Kids, and Mercedes Benz female athletes of Pune, Maharashtra state, India in relation to Differentiation ability

	Sum of Squares	df	Mean Square	F
Between Groups	80.000	2	40.000	5.882*
Within Groups	591.600	87	6.800	
Total	671.600	89		

Tab. F .05 (2, 87)= 3.09

It appears from the Table – 6 that the computed value of F (5.882) among selected International Schools, female athletes of Pune, in relation to differentiation ability was greater than the tabulated (3.09), F at .05 level. Therefore, null hypothesis among selected international schools in relation to differentiation ability was not accepted at 0.05 level.

To further analyze which group differ significantly post hoc test (LSD) was applied.

Table-6.1

Mean Comparison of Symbiosis International School, Victorious Kids, and Mercedes Benz female athletes of Pune, Maharashtra state, India in relation to Differentiation ability

Symbiosis International School	Victorious Kids	Mercedes Benz	M.D.	C.D.
7.40	9.40		2*	1.34
7.40		9.40	2*	
	9.40	9.40	0	

The above table reveals that significant difference was found in case of Symbiosis and Victorious Kids, Symbiosis and Mercedes Benz as the mean difference was greater than the critical difference. No significant difference was found in case of Victorious Kids and Mercedes Benz as the mean difference was less than the critical value of 0.28 at 0.05 level of significance.

Table – 7

Analysis of variance of Symbiosis International School, Victorious Kids, and Mercedes Benz female athletes of Pune, Maharashtra state, India in relation to Rhythmic ability

	Sum of Squares	df	Mean Square	F
Between Groups	.247	2	.124	3.050
Within Groups	3.525	87	.041	
Total	3.772	89		

Tab. F .05 (2, 87)= 3.09

It appears from the Table – 7 that the computed value of F (3.05) among Symbiosis International School, Victorious Kids, and Mercedes Benz female athletes of Pune, Maharashtra state, India in relation to rhythmic ability was less than the tabulated (3.09), F at .05 level. Therefore null hypothesis among selected international schools in relation to rhythmic ability was accepted at 0.05 level.

Table – 8

Analysis of variance of Symbiosis International School, Victorious Kids, and Mercedes Benz female athletes of Pune, Maharashtra state, India in relation to explosive strength

	Sum of Squares	df	Mean Square	F
Between Groups	.764	2	.382	5.209*
Within Groups	6.384	87	.073	
Total	7.148	89		

Tab. F .05 (2, 87)= 3.09

It appears from the Table – 8 that the computed value of F (5.209) among Symbiosis International School, Victorious Kids, and Mercedes Benz female athletes of Pune, Maharashtra state, India in relation to explosive strength was greater than the tabulated (3.09), F at .05 level. Therefore null hypothesis among selected international school in relation to explosive strength was not accepted at 0.05 level.

Table-8.1

Mean Comparison of Symbiosis International School, Victorious Kids, and Mercedes Benz female athletes of Pune, Maharashtra state, India in relation to Explosive strength

Symbiosis International School	Victorious Kids	Mercedes Benz	M.D.	C.D.
2.205	2.202		0.003	0.139
2.205		2.399	0.194*	
	2.202	2.399	0.197*	

The above table reveals that significant difference was found in case of Symbiosis International School, Victorious Kids, and Mercedes Benz female athletes of Pune, Maharashtra state, India as the mean difference was greater than the critical difference. No significant difference was found in case of Symbiosis International School and Mercedes Benz as the mean difference was less than the critical value of 0.28 at 0.05 level of significance.

Table – 9

Analysis of variance of Symbiosis International School, Victorious Kids, and Mercedes Benz female athletes of Pune, Maharashtra state, India in relation to Speed

	Sum of Squares	df	Mean Square	F
Between Groups	.030	2	.015	.054
Within Groups	23.949	87	.275	
Total	23.978	89		

Tab. F .05 (2, 87) = 3.09

It appears from the Table – 9 that the computed value of F (.054) among Symbiosis International School, Victorious Kids, and Mercedes Benz female athletes of Pune, Maharashtra state, India in relation to speed was less than the tabulated (3.09), F at .05 level. Therefore null hypothesis among selected international schools in relation to speed was accepted at 0.05 level.

Table – 10

Analysis of variance of Symbiosis International School, Victorious Kids, and Mercedes Benz female athletes of Pune, Maharashtra state, India in relation to 12min. Run/Walk

	Sum of Squares	df	Mean Square	F
Between Groups	1673.867	2	836.934	22.872*
Within Groups	3183.510	87	36.592	
Total	4857.377	89		

Tab. F .05 (2, 87) = 3.09

It appears from the Table – 8 that the computed value of F (22.872) among Symbiosis International School, Victorious Kids, and Mercedes Benz female athletes of Pune, Maharashtra state, India in relation to 12min. Run/walk was greater than the tabulated (3.09), F at .05 level. Therefore null hypothesis among selected international school in relation to 12min. Run/Walk was not accepted at 0.05 level.

Table-10.1

Mean Comparison of Symbiosis International School, Victorious Kids, and Mercedes Benz female athletes of Pune, Maharashtra state, India in relation to 12min. Run/Walk

Symbiosis International School	Victorious Kids	Mercedes Benz	M.D.	C.D.
30.09	29.01		1.08	3.12
30.09		38.65	5.56*	
	29.01	38.65	9.64*	

The above table reveals that significant difference was found in case of symbiosis and Mercedes Benz, Victorious Kids and Mercedes Benz as the mean difference was greater than the critical difference. No significant difference was found in case of Symbiosis and Victorious Kids as the mean difference was less than the critical value of 0.28 at 0.05 level of significance.

Table – 11

Analysis of variance of Symbiosis International School, Victorious Kids, and Mercedes Benz female athletes of Pune, Maharashtra state, India in relation to Agility

	Sum of Squares	df	Mean Square	F
Between Groups	1.342	2	.671	.503
Within Groups	116.039	87	1.334	
Total	117.381	89		

Tab. F .05 (2, 87) = 3.09

It appears from the Table – 11 that the computed value of F (.503) among Symbiosis International School, Victorious Kids, and Mercedes Benz female athletes of Pune, Maharashtra state, India in relation to agility was less than the tabulated (3.09), F at .05 level. Therefore null hypothesis among selected schools in relation to agility was accepted at 0.05 level.

Conclusion

Within the limitations of the present study, the following conclusions may be drawn.

1. Significant difference was found in case of orientation ability, differentiation ability, explosive strength and 12 min. run/walk.
2. No significant difference was found in case of rhythmic ability, reaction ability, speed and agility.
3. It was concluded that the nature of abilities at all the selected international schools are more or less similar in nature.
4. Mercedes Benz female players possess better 12 min. run/walk and explosive strength than the other school athletes.

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