CHAPTER IV

RESULTS AND DISCUSSION

4.1 OVERVIEW

To achieve the purpose of the study the investigator selected 200 subjects as 100 school boys and 100 girls at junior level. 50 boys and 50 girls were beginners who played basketball uptointerzonal or interschool level and 50 boys and 50 girls were district level players who played upto district level or divisional level. The age group of the selected subjects was from 12 to 14 years. The subjects were selected from 20 different schools in Tamil Nadu, India. The static group comparison design was used for the purpose of the study. Selected subjects were divided into four equal groups consisting of 50 subjects each. 50 junior boys in beginner group (Beginner Boys Group, BBG) and 50 junior boys in district level group (District Boys Group, DBG). And, the girls also divided into 50 junior girls of beginner group (Beginner Girls Group, BGG) and 50 junior girls of district level group (District Girls Group, DGG).

To determine the significant difference between the groups on the dependent variable the statistical procedure Analysis Of Variance (ANOVA) was applied. To find out the significant difference on means of the group, Scheffe's Post-hoc test was administered.

4.2 LEVEL OF SIGNIFICANCE

To ascertain the significant difference between the groups the level of significance was set at 0.05 level of confidence which has considered adequate for the purpose of this study.

4.3 Results

This chapter deals with the analysis of data collected from the subjects on selected five co-ordinative abilities, reaction ability, orientation ability, differentiation ability, balance ability and rhythm ability.

Table III

Descriptive Statistics on Reaction Ability

Groups	N	Mean	Std. Deviation
BeginnerBoys Group	50	2.28	.199
BeginnerGirls Group	50	2.44	.226
DistrictBoys Group	50	1.96	.202
DistrictGirls Group	50	2.05	.178

Table III showing the mean values of beginner boys and girls, district level boys and girls on reaction ability.

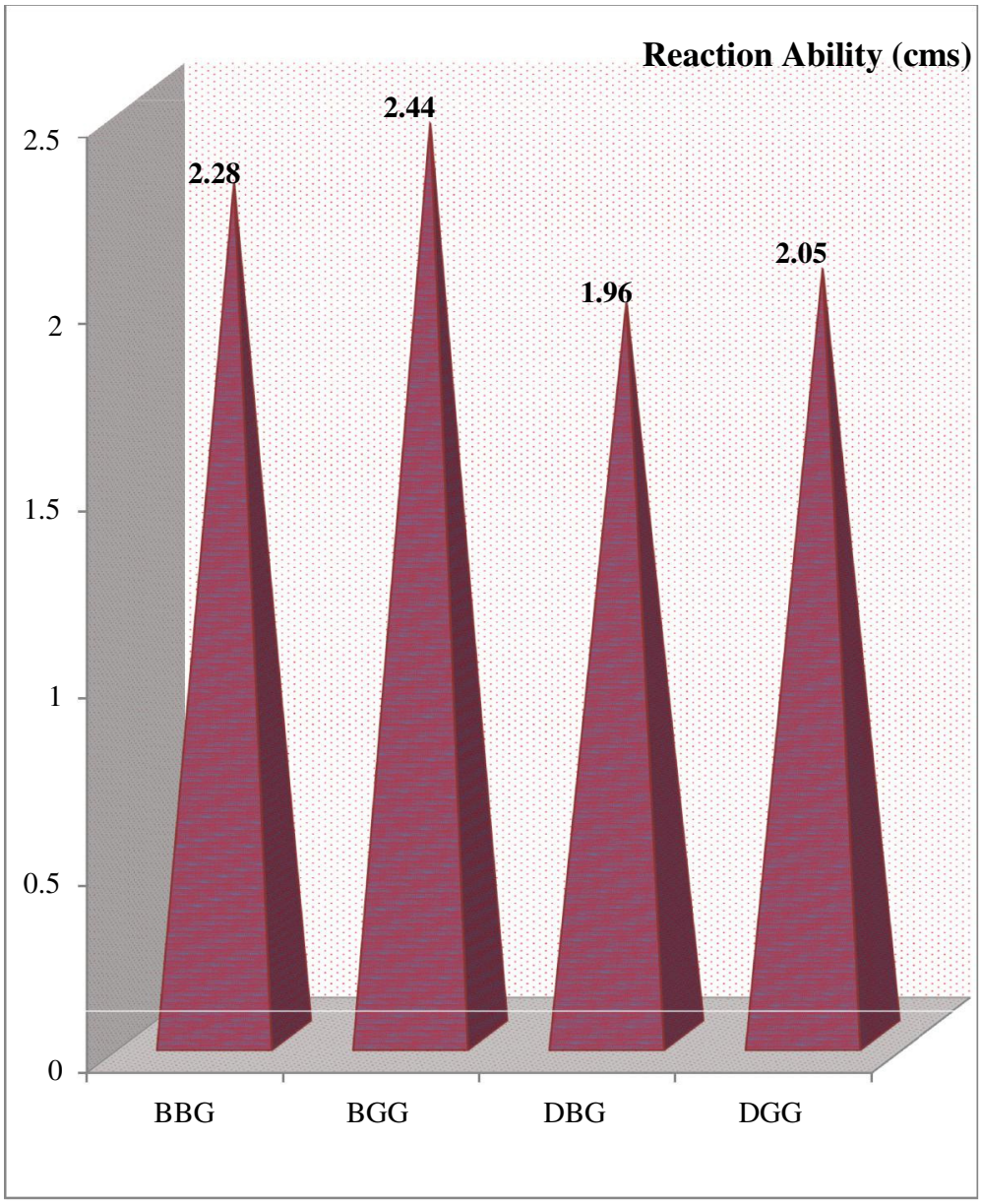

Figure 7 showing the mean values of Reaction Ability

Table IV

ANOVA on Reaction Ability

Sources	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.018	3	2.339	57.214*	.000
Within Groups	8.014	196	.041		
Total	15.031	199			

As shown in Table IV the obtained F-ratio value on the reaction ability is higher than the required table value of 2.651 at 3,196 df at 0.05 level of significance. Hence, the null hypothesis was rejected. There was a significant difference on the reaction ability between the groups. To find out further significant difference among the groups, the Scheffes' post hoc test was employed.

Table V

Scheffes' Post-hoc test on Reaction Ability

(I) Groups	(J) Groups	Mean Difference (I-J)	Sig.
Beginner Boys Group (BBG)	BGG	-.15540*	.003
	DBG	.32080*	.000
Beginner Girls Group (BGG)	DBG	.47620*	.000
	DGG	.38340*	.000
District Boys Group (DBG)	DGG	-.09280	.157
District Girls Group (DGG)	BBG	-.22800*	.000

As mentioned in Table V district level boys group (DBG) showed significantly high reaction ability than the other groups. There was a significant difference between beginner boys group (BBG) and beginner girls group (BGG). And, there was no significant difference between the district level boys group (DBG) and district level girls (DGG) group in reaction ability.

Table VI

Descriptive Statistics on Orientation Ability

Groups	N	Mean	Std. Deviation
Beginner Boys Group	50	11.37	1.18992
Beginner Girls Group	50	12.76	.58824
District Boys Group	50	8.94	1.02109
District Girls Group	50	10.16	1.43204

Table VI showing the mean values of beginner boys and girls, district level boys and girls on orientation ability.

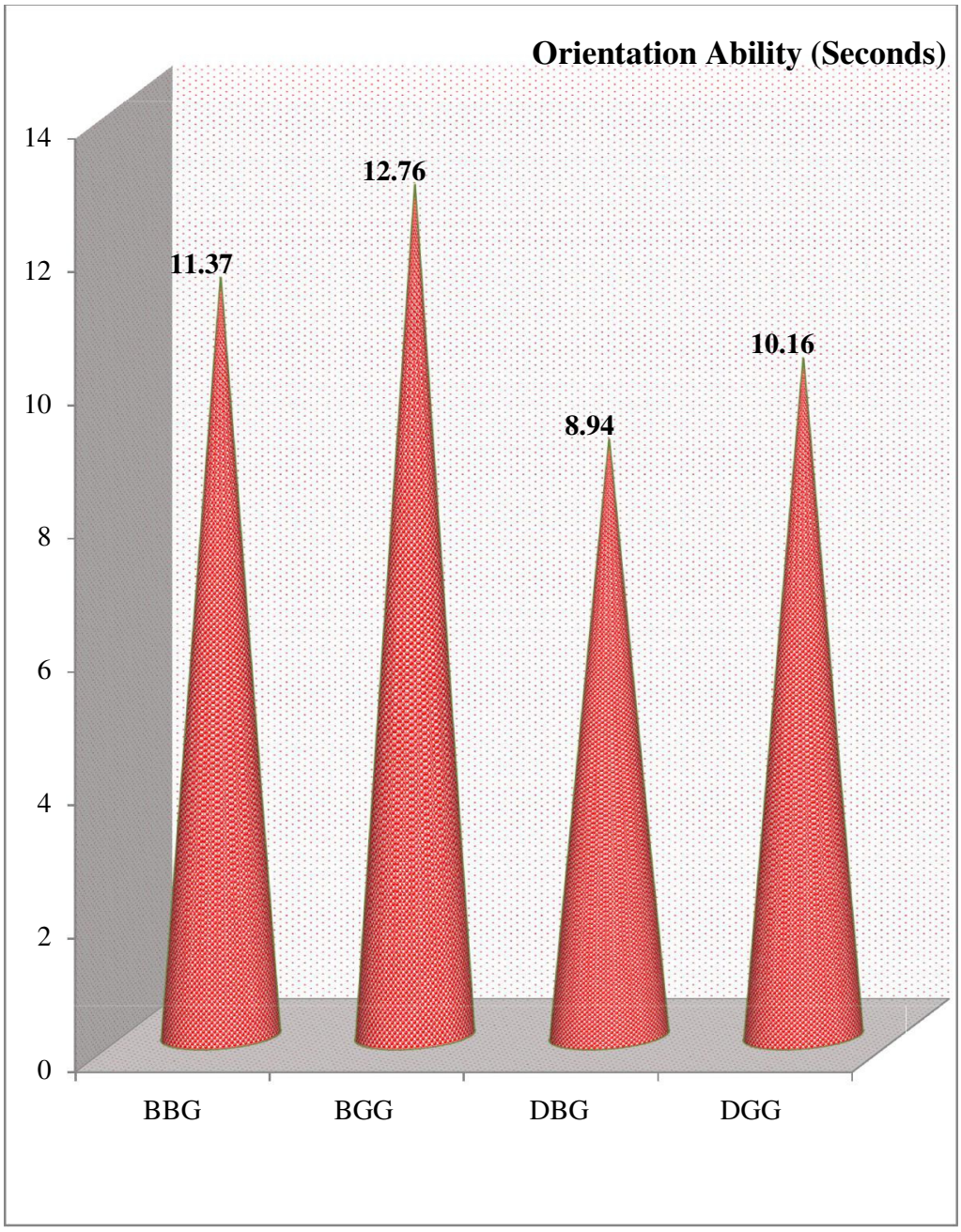

Figure 8 showing the mean values of Orientation Ability

Table VII

ANOVA on Orientation Ability

Sources	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	402.256	3	134.085	110.465*	.000
Within Groups	237.910	196	1.214		
Total	640.166	199			

As presented in Table VII, the obtained F-ratio value on the orientation ability is higher than the required table value of 2.651 at 3,196 df at 0.05 level of significance. Hence, the null hypothesis was rejected. There was a significant difference on the orientation ability between the groups. To find out further significant difference among the groups, the Scheffes' post hoc test was employed.

Table VIII

Scheffes' Post-hoc test on Orientation Ability

(I) Groups	(J) Groups	Mean Difference (I-J)	Sig.
Beginner Boys Group (BBG)	BGG	-1.39360*	.000
	DBG	2.42840*	.000
Beginner Girls Group (BGG)	DBG	3.82200*	.000
	DGG	2.60480*	.000
District Boys Group (DBG)	DGG	-1.21720*	.000
District Girls Group (DGG)	BBG	-1.21120*	.000

As denoted in Table VIII district level boys group (DBG) showed significantly high orientation ability than the other groups. There was a significant difference between beginner boys group (BBG) and beginner girls group (BGG). And, there was significant difference between the district level boys group (DBG) and district level girls (DGG) group in orientation ability.

Table IX

Descriptive Statistics on Differentiation Ability

Groups	N	Mean	Std. Deviation
Beginner Boys Group	50	9.82	.84973
Beginner Girls Group	50	6.0	.80812
District Boys Group	50	15.48	1.35887
District Girls Group	50	11.62	1.08590

Table IX showing the mean values of beginner boys and girls, district level boys and girls on differentiation ability.

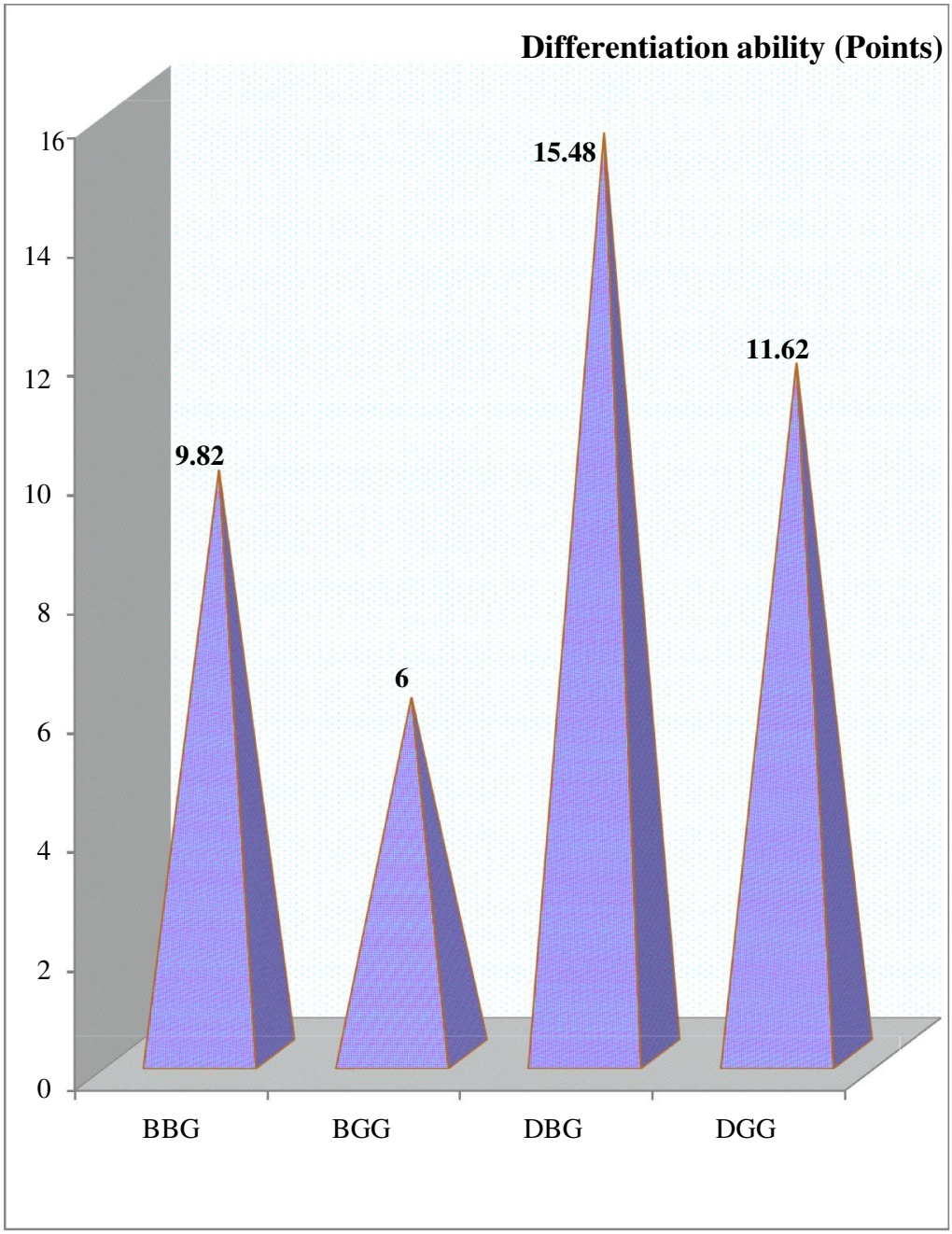

Figure 9 showing the mean values of Differentiation Ability

Table X

ANOVA on Differentiation Ability

Sources	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2327.780	3	775.927	705.257*	.000
Within Groups	215.640	196	1.100		
Total	2543.420	199			

As represented in Table X the obtained F-ratio value on the differentiation ability is higher than the required table value of 2.651 at 3,196 df at 0.05 level of significance. Hence, the null hypothesis was rejected. There was a significant difference on the differentiation ability between the groups. To find out further significant difference among the groups, the Scheffes' post hoc test was employed.

Table XI

Scheffes' Post-hoc test on Differentiation Ability

(I) Groups	(J) Groups	Mean Difference (I-J)	Sig.
Beginner Boys Group (BBG)	BGG	3.82000*	.000
	DBG	-5.66000*	.000
Beginner Girls Group (BGG)	DBG	-9.48000*	.000
	DGG	-5.62000*	.000
District Boys Group (DBG)	DGG	3.86000*	.000
District Girls Group (DGG)	BBG	1.80000*	.000

As denoted in Table XI district level boys group (DBG) showed significantly high differentiation ability than the other groups. There was a significant difference between beginner boys group (BBG) and beginner girls group (BGG). And, there was significant difference between the district level boys group (DBG) and district level girls (DGG) group in differentiation ability.

Table XII

Descriptive Statistics on Balance Ability

Groups	N	Mean	Std. Deviation
Beginner Boys Group	50	11.19	4.39755
Beginner Girls Group	50	11.63	5.58070
District Boys Group	50	8.92	2.92171
District Girls Group	50	9.77	3.56565

Table XII showing the mean values of beginner boys and girls, district level boys and girls on balance ability.

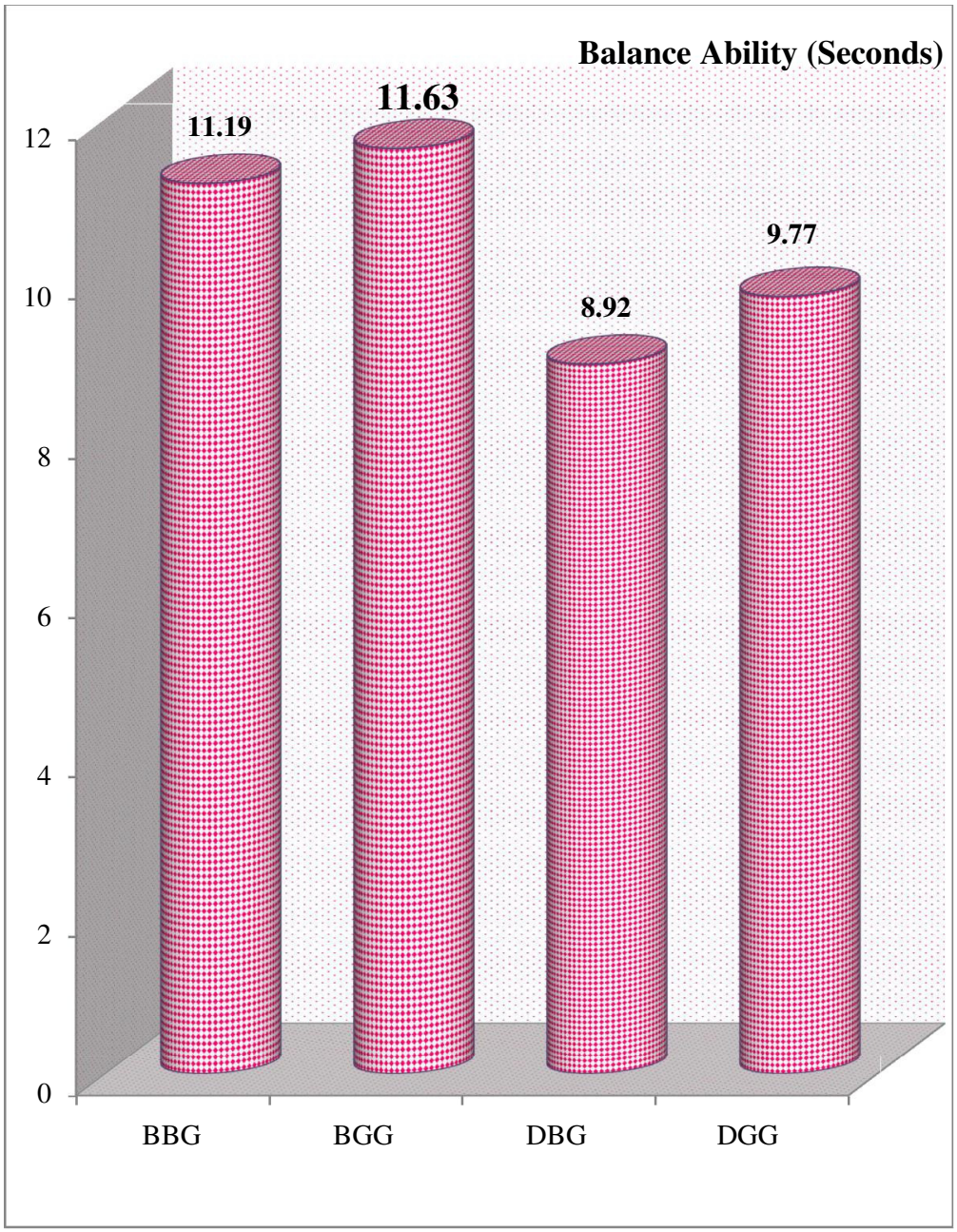

Figure 10 showing the mean values of Balance Ability

Table XIII

ANOVA on Balance Ability

Sources	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	236.159	3	78.720	4.390*	.005
Within Groups	3514.918	196	17.933		
Total	3751.076	199			

As noted in Table XIII the obtained F-ratio value on the balance ability is higher than the required table value of 2.651 at 3,196 df at 0.05 level of significance. Hence, the null hypothesis was rejected. There was a significant difference on the balance ability between the groups. To find out further significant difference among the groups, the Scheffes' post hoc test was employed.

Table XIV

Scheffes' Post-hoc test on Balance Ability

(I) Groups	(J) Groups	Mean Difference (I-J)	Sig.
Beginner Boys Group (BBG)	BGG	-.43340	.967
	DBG	2.27580	.069
Beginner Girls Group (BGG)	DBG	2.70920*	.019
	DGG	1.85380	.191
District Boys Group (DBG)	DGG	-.85540	.796
District Girls Group (DGG)	BBG	-1.42040	.424

As denoted in Table XIV district level boys group (DBG) showed high balance ability than the other groups. There was no significant difference between beginner boys group (BBG) and beginner girls group (BGG). And, there was no significant difference between the district level boys group (DBG) and district level girls (DGG) group in balance ability.

Table XV

Descriptive Statistics on Rhythm Ability

Groups	N	Mean	Std. Deviation
Beginner Boys Group	50	2.07	.50326
Beginner Girls Group	50	2.72	.39378
District Boys Group	50	1.91	.48873
District Girls Group	50	2.14	.37436

Table XV showing the mean values of beginner boys and girls, district level boys and girls on rhythm ability.

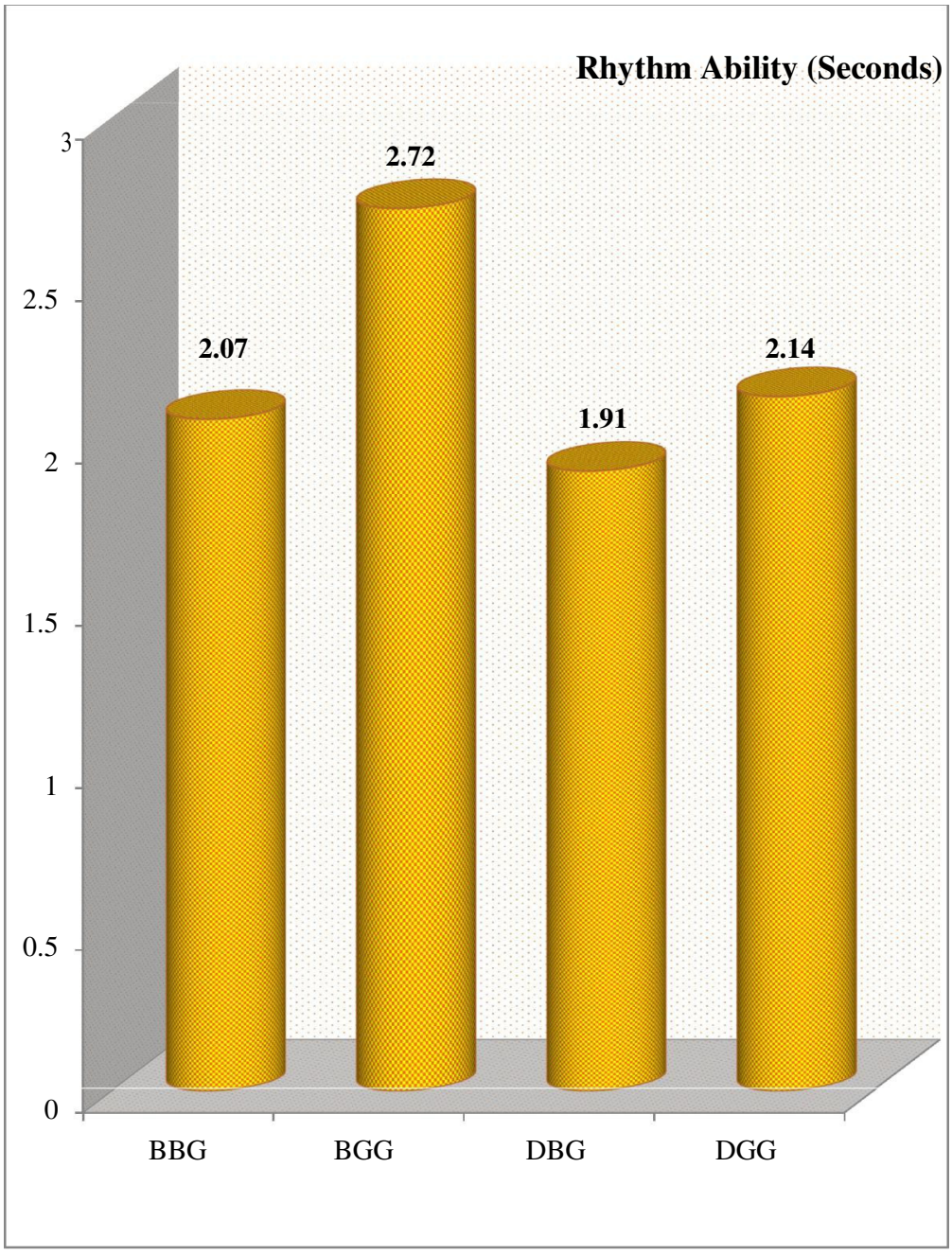

Figure 11 showing the mean values of Rhythm Ability

Table XVI

ANOVA on Rhythm Ability

Sources	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	18.849	3	6.283	31.920*	.000
Within Groups	38.579	196	.197		
Total	57.428	199			

As mentioned in Table XVI the obtained F-ratio value on the rhythm ability is higher than the required table value of 2.651 at 3,196 df at 0.05 level of significance. Hence, the null hypothesis was rejected. There was a significant difference on the rhythm ability between the groups. To find out further significant difference among the groups, the Scheffes' post hoc test was employed.

Table XVII

Scheffes' Post-hoc test on Rhythm Ability

(I) Groups	(J) Groups	Mean Difference (I-J)	Sig.
Beginner Boys Group (BBG)	BGG	-.65100*	.000
	DBG	.16280	.341
Beginner Girls Group (BGG)	DBG	.81380*	.000
	DGG	.57860*	.000
District Boys Group (DBG)	DGG	-.23520	.074
District Girls Group (DGG)	BBG	.07240	.881

As denoted in Table XVII district level boys group (DBG) showed significantly high rhythm ability than the other groups. There was significant difference between beginner boys group (BBG) and beginner girls group (BGG). And, there was no significant difference between the district level boys group (DBG) and district level girls (DGG) group in rhythm ability.

4.4 DISCUSSION ON REACTION ABILITY

District level boys group showed significantly high reaction ability with the mean value of 1.96 than the beginner level boys (2.28) and beginner level girls (2.44). Beginner level boys showed significantly high reaction ability with mean value of 2.28 with the beginner level girls (2.44). There was no significant difference between district level boys and district level girls (2.05) in the reaction ability.

Coordination abilities like reaction ability facilitate the fast learning of new movements and the efficient adaptation to a variety of situations. District level boys and girls showed significant difference in reaction ability than the beginner level boys and girls, the findings of the study is in consonance with the findings of **Moraru Cristina-Elena and Radu Liliana-Elisabeta (2014).**

The results of the study are supported by the study conducted by **Singh (2013)** that coordination abilities have also important and strong links with the motor skills as the motor coordination focus the basis of both. These abilities enable the sportsperson to do a group or set of movement with better quality and effect as district level boys and girls showed high reaction ability.

4.5 DISCUSSION ON ORIENTATION ABILITY

Beginner level boys group with the mean value of 11.37 showed significantly better orientation ability than the beginner level girls with the mean value of 12.76. District level boys group with the mean value of 8.94 showed better orientation ability than the district level girls (10.16). District level boys group showed significant difference with the beginner level boys and beginner level girls.

The results of the study are in relation to the findings of the research study conducted by **Amit Panwar, et.al., (2013)**that same age group, gender won't differ in their co-ordinative ability much.

Amarpreet Singh (2013)concluded that orientation ability differs at different gender group and level of players and the study supports the findings of the present research.

4.6 DISCUSSION ON DIFFERENTIATION ABILITY

District level boys group showed significantly high differentiation ability with the mean value of 15.48 than the District level girls group with the mean value of 11.62 and beginner level boys and girls group. And, there was a significant difference on the differentiation ability between Beginner level boys group with the mean value of 9.82 and Beginner level girls group with the mean value of 6.0.

The finding of the present research study is in line with the finding of the research conducted by **Ziemowit Bankosz (2012)** that differentiation ability significantly differ from each other in the accuracy of performing the studied movement.

Marina Tsetseli, et.al., (2010)concluded that kineasthetic differentiation ability is very much needed for the higher level of performance. The results of the study revealed that district level boys and girls showed significantly high differentiation ability than the beginner level boys and girls.

4.7 DISCUSSION ON BALANCE ABILITY

District level boys group showed significant difference with the mean value of 8.92 with the beginner level girls with the mean value of 11.63. There was no significant difference between beginner boys (11.19) and beginner level girls (11.63). And, there was no significant difference between district level boys (8.92) and district level girls (9.77) in balance ability.

The findings of the present study is in line with the findings of the study conducted by **Hrysomallis C (2011)** that balance ability improves the performance and enhances the motor skills.

The present study is in contrast with the findings of the **Hota (2001)** that balance ability doesn't have significant relationship with the performance.

4.8 DISCUSSION ON RHYTHM ABILITY

Beginner level boys (mean = 2.07) were better than the beginner level girls (mean=2.72) in rhythm ability. There was no significant difference between the district level boys (1.91) and district level girls (2.14). District level boys group showed better rhythm ability than the other group with the mean rhythm ability of 1.91.

The findings of the present research study are supported by the findings of **Joseph Singh (2014)** that rhythm ability has vital role in the improvement of playing ability of any game.

The result of the study is in consonance with the findings of **Hemraj D Patel, et.al., (2012)** that rhythm ability enhance once learning process and improves the performance.

4.9 DISCUSSION ON HYPOTHESES

1. First hypothesis stated that there would be no significant difference of co-ordinative abilities of beginner level basketball players at junior level boys and girls. The result of the study showed that the junior level boys and girls in Beginner level Boys Group showed significant difference than Beginner level Girls Group in reaction ability, orientation ability, differentiation ability and rhythm ability except balance ability.

2. Second hypothesis stated that there would be no significant difference of co-ordinative abilities of district level basketball players at junior level boys and girls. Junior level boys in District level Boys Group showed significantly high orientation and differentiation ability than the junior level girls in District level Girls Group except reaction ability, balance ability and rhythm ability.