CHAPTER - IV
RESULTS AND DISCUSSIONS

4.0 Introduction

The data that have been collected from a sample of 120 belonging to standard VIII pupils, are analyzed in this chapter to determine whether the results support the hypotheses formulated earlier, to make inferences and to interpret them suitably. The pre and post-test scores of the control and experimental group were obtained by evaluating the pre-test and post-test question paper answered by the sample. The totals of the pre-test and post-test papers of the sample in both experimental and control groups were added for the total test as well as the sub-totals for 5 grammar aspects separately.

Three types of research analysis are used in the present study for the purpose of describing and interpreting the obtained data, and the same are detailed below:

4.1 Descriptive Analysis

4.2 Differential Analysis

4.3 Analysis of Variance

4.1 Descriptive Analysis

Analysis was made on the basis of the scores obtained from the pupils in pre and post-tests. The test items in the pre and post-tests included 1) Article (10 marks), 2) Sentence patterns (10 marks), 3) Question tags (10 marks), 4) Concord (10 marks), and 5) Reported Speech (10 marks). Each of the marks thus obtained are collectively called as 'Total Score' and the same are tabulated and analyzed. In addition to this, information collected from the pupils regarding educational level of the parents and siblings have also contributed to the analysis of the data.

The total number of the sample selected in the school comprised of 120 pupils of std VIII which was divided into 60 in experimental group and 60 in control group. The experimental group and the control group comprised of 30 boys and 30 girls each.

The educational qualification of the parents and the siblings in both experimental and control group is detailed below in Table 4.1.

Table 4.1: Educational Qualification of Parents and Siblings of the Sample

Particulars	Educational qualification (experimental Group n=60)					Educational qualification (Control Group n=60)				
	Illiterate	Primary school level	High School level	Higher Secondary level	Total	Illiterate	Primary school level	High School level	Higher Secondary level	Total
Father	9 (16%)	8 (14%)	31 (54%)	9 (16%)	57	8 (14%)	10 (17%)	29 (49%)	12 (20%)	59
Mother	10 (17%)	7 (12%)	29 (50%)	12 (21%)	58	10 (17%)	8 (13%)	30 (50%)	12 (20%)	60
Siblings (Boys)	2 (4%)	9 (19%)	10 (21%)	27 (56%)	48	4 (9%)	7 (15%)	12 (26%)	23 (50%)	46
Siblings (Girls)	7 (14%)	19 (38%)	8 (16%)	16 (32%)	50	5 (10%)	9 (18%)	15 (31%)	20 (41%)	49

From Table 4.1, it is inferred that in both the groups educational qualification of fathers, mothers, brothers and sisters varied from illiterate to higher secondary level. Out of the 60 pupils in experimental group,57 of them had fathers and out of them 9 (16%) were illiterate, 8 (14 %) were educated upto primary school level, 31 (54%) were up to high school level and 9 (16%) upto higher secondary level and 3 of them had lost their fathers. Out of the 60 pupils 58 of them had mother and out of the 58 mothers,10 (17%) of them were illiterate 7 (12%) were educated upto

primary level, 29 (50%) were educated upto secondary level and 12 (21%)were educated upto higher secondary level. Two of them lost their mothers.

48 of the experimental group pupils had brothers (elder /younger). Out of the 48, 2 (4%) were illiterate, 9 (19%) were educated upto primary school level, 10 (21%) were educated upto high school level and 27 (56%) upto higher secondary level. 12 of them had no younger/elder brothers.

Out of the 60 pupils 50 of them had sisters. Out of them 7 (14%) were illiterate, 19 (38%) were educated up to primary level, 8 (16%) of them up to high school level and 16(32%) of them up to higher secondary level. 10 of them had no sisters.

Out of the 60 pupils in control group 59 of them had fathers and out of them 8 (14%) were illiterate, 10 (17%) were educated upto primary school level, 29 (49%) were up to high school level and 12(20%) up to higher secondary level 1 of them had lost father. All 60 of the pupils in control group had mothers, 10 (17%) of them were illiterate 8 (13%) were educated upto primary level, 30(50%) were educated up to secondary level and12 (20%) were educated upto higher secondary level. Out of the 60, 46 of the control group pupils had brothers (elder / younger). Out of the 46,4(9%) were illiterate, 7 (15%) were educated up to primary school level, 12 (26%) were educated up to high school level and 23 (50%) upto higher secondary level. 14 of them had no younger/elder brothers.

Out of the 60 pupils of the control group 49 of them had sisters. Out of them 5 (10%) were illiterate, 9 (18%) were educated up to primary level, 15 (31%) of them up to high school level and 20 (41%) of them up to higher secondary level. 11 of them had no sisters.

4.2 Differential Analysis

4.2.1 Analysis of the pre-test scores of the control and experimental group

Mean scores of the pre-test scores of the experimental group taught using language games and control group taught using conventional method are given below in Table 4.2.

Table 4.2: Analysis of the pre-test scores of both experimental and control group pupils

Stage	Group	Mean	SD	t value
Pre-test n=60	Experimental	11.26	2.31	0.47 (NS)
Pre-test n=60	Control	11.05	2.74	

NS : not significant

From the Table 4.2, it is evident that the obtained t=0.47 is less than the table value 2.58. It reveals that the experimental group taught by language game method and the control group taught by conventional method do not differ significantly in their English grammar proficiency at the pre -assessment stage. Thus, the hypothesis stated as Ho_1, ***"There is no significant difference between the pre-test mean scores of the experimental and control group of the sample"*** is accepted. It is proved statistically that both the groups are similar in their English grammar proficiency before treatment**.**

The results of this study are in line with the findings of Akın et al. (2004), the comparison of the means of the pre-test scores of both control and experimental groups showed that the two groups were not significantly different in terms of their vocabulary proficiency on the tested items. After the treatment however, the post-test scores of the two groups showed significant differences.

4.2.2 Analysis of the post-test scores of the Sample

Mean scores of the post-test scores of both experimental group taught using language games and control group taught using conventional method are shown in Table 4.3 and Figure 3.1.

Table 4.3: Analysis of the post-test scores of experimental and control group pupils

Stage	Group	Mean	SD	t value
Post-test n=60	Experimental	29.85	2.93	26.94**
Post-test n=60	Control	17.76	1.86	

****Significant at 0.01 level**

From the Table 4.3, it is evinced that, there is a significant difference (t: 26.94) at 0.01 level between the mean value of experimental and control groups. Thus, the hypothesis stated as Ho_2, ***"There is no significant difference between the post-test mean scores of the experimental and control group of the sample"*** is rejected. The mean score of the experimental group (M=29.85) was higher than the control (M= 17.76) at the post-assessment stage. Thus, the language game method of learning and practising was more effective than the conventional method, and was proved statistically**.** The findings of Dennis et al. (2011) whose study was to activate the students during grammar instruction by using cooperative learning proved that advice (26) involvement in learning grammar through language games by the experimental group scored higher markers in learning of grammar.

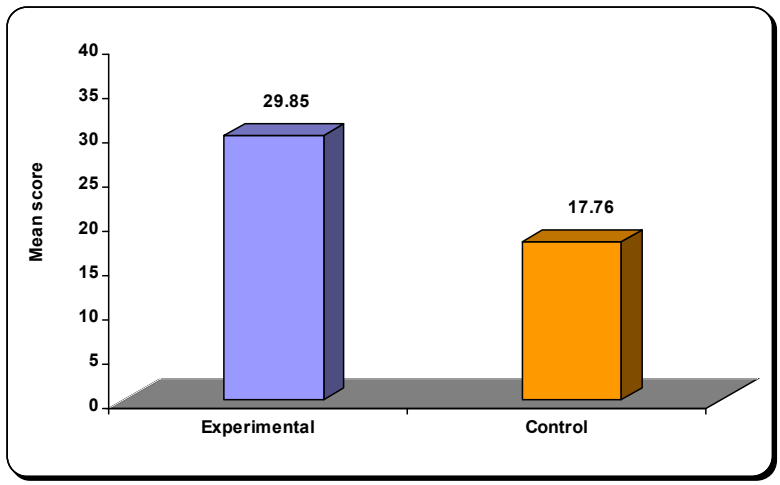

Figure 4.1: Post-test Mean Scores of the Experimental Group and Control Group

4.2.3 Analysis of pre-test Scores of the Samples-Aspect-Wise

Table 4.4 and Figure 4.2 given below shows the difference between the mean scores of the pre-test (aspect-wise) - experimental group and control groups

Table 4.4: Analysis of the pre-test mean scores of Experimental and Control group - Aspect-wise

Grammar Aspects	Experimental group		Control group		t value
	Mean	SD	Mean	SD	
Articles	2.35	1.12	3.15	1.16	3.84**
Sentence patterns	2.33	1.08	2.62	0.94	1.53(NS)
Question tags	2.23	1.06	2.32	0.96	0.08(NS)
Concord	2.20	1.06	1.50	0.81	3.96**
Reported speech	2.02	0.91	1.41	0.80	3.82**

NS: not significant ****Significant at 0.01 level**

From the Table VII, it is inferred that the obtained 't' values 1.53 and 0.08,of sentence patterns and question tags respectively are found to be

lesser than the table value and hence not significant. On the other hand the 't' values 3.84,3.96 and 3.82of articles, concord and reported speech respectively, are higher than the table value and hence significant at 0.01 level . It means that there is a significant difference between the two groups at the pre-stage on articles, concord and reported speech. Thus the hypothesis stated Ho_3, ***"There is no significant difference between pre-test mean scores of the control and experimental groups of the sample for the selected aspects of English grammar"*** is rejected partly. As 't' values for articles (3.84), concord (3.96) and reported speech (3.82) are significant at 0.01 level, the hypothesis is rejected for these 3 aspects of the English grammar whereas the 't' value for sentence patterns (1.53) and question tags (0.08) are not significant and hence the hypothesis is accepted.

Further from the mean obtained by the Control group for articles being 3.15 and for the experimental group for concord being 2.20and for reported speech being 2.02 these groups have performed better in the pre-assessment stage in the respective aspects of English grammar.

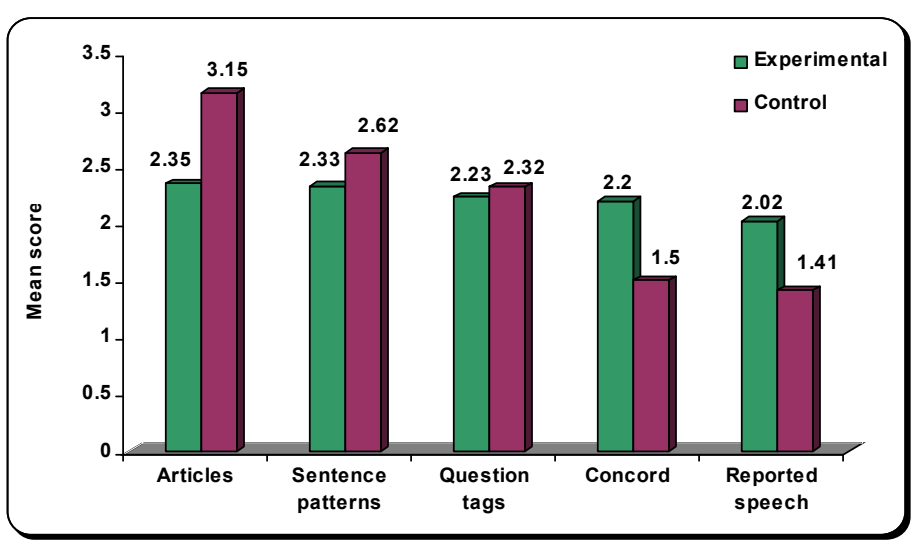

Figure 4.2: Pre -test mean scores of the experimental and control groups - aspect-wise

4.2.4 Analysis of Post-test Scores of the Sample-Aspect-Wise

The difference between the post-test mean scores (aspect-wise) of the experimental and control groups of the sample is shown in Table 4.5 and Figure 4.3.

Table 4.5: Analysis of Experimental and Control Groups in the Post-Assessment Stage

Grammar Aspects	Experimental group		Control group		t value
	Mean	SD	Mean	SD	
Articles	6.48	1.56	3.70	0.97	11.70**
Sentence patterns	5.91	1.33	3.88	0.69	10.49**
Question tags	5.70	0.94	3.50	0.80	13.06**
Concord	5.50	1.20	3.30	0.75	11.66**
Reported speech	6.27	1.35	3.27	0.58	15.81**

****Significant at 0.01 level**

From the table 4.5, it of experimental group over the control group at the post- stage level. Thus the hypothesis as stated Ho_4, ***"There is no significant difference between post-test mean scores of the experimental and control groups of the sample for the selected aspects of the English grammar"*** is rejected**.** Hence it could be concluded that the language Game method for learning and practising the selected aspects namely- articles, sentence patterns, question tags, concord and reported speech is more effective. It is statistically proved to be a better method to learn grammar than the conventional way of teaching and learning.

Jurhill Dennis (2011) found in his experiment using co-operative learning help the students to learn grammar better whereas Bruce (2010) describes how ESL teachers can use poetry to introduce English vocabulary and grammar to English language learners and help their students develop writing skills.

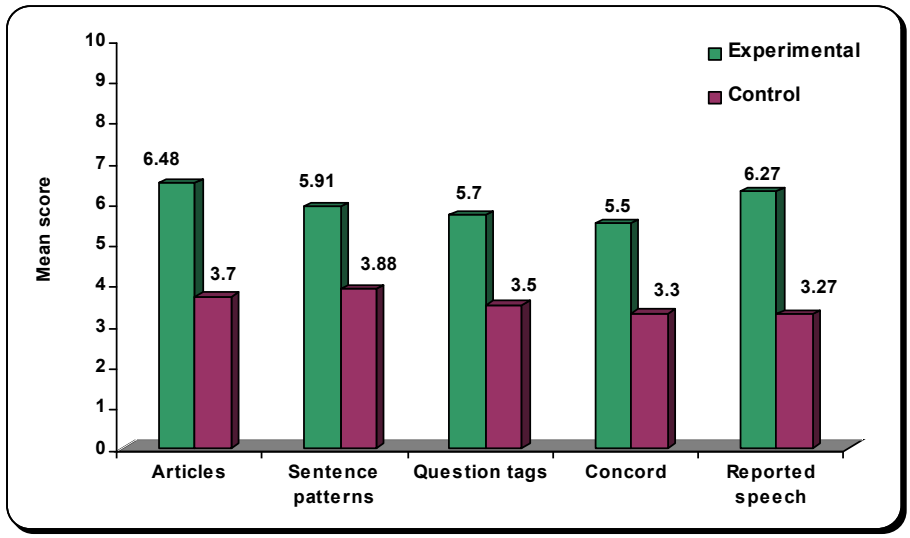

Figure 4.3: Post-Test Mean Scores of the Sample -'Aspect-wise'

4.2.5 Analysis of Pre and Post-test Mean Scores of the Experimental Group-'Aspect-Wise'

The difference between the mean scores of pre and post-tests of the experimental group in relation to various aspects of English grammar is depicted in Table 4.6 and Figure 4.4.

Table 4.6: Differences Between the Pre and Post-test Mean Scores of the Experimental Group Aspect-Wise

Grammar aspects	Pre Test		Post Test		t value
	Mean	SD	Mean	SD	
Articles	2.35	1.12	6.48	1.56	16.70**
Sentence patterns	2.33	1.08	5.91	1.33	16.6**
Question tags	2.33	1.27	5.68	0.95	16.37**
Concord	2.33	1.06	5.50	1.20	15.58**
Reported speech	2.02	0.91	6.27	1.35	20.20**

**** Significant at 0.01 level**

From the Table 4.6, it is learnt that the obtained 't' values 16.7, 16.6, 16.37, 15.58 and 20.20 of articles, sentence patterns, question tags,

concord and reported speech respectively, are found to be higher than the table value and hence significant at 0.01 level. It means that there is significant difference between the pre test and the post test scores aspect-wise of the experimental group. Thus the hypothesis stated as Ho_5, ***"There is no significant difference between the pre and post-test mean scores of the experimental groups with regard to articles, sentence patterns, question tags, concord and reported speech"*** is rejected. This proves that learning and practising English grammar through language games is effective statistically.

Guilin Yolo(2011) study fall in line with the present study that Turkish EFL teachers have a range of conceptions about using games in grammar teaching similar to those reported in the current literature. The study of Greenall (1984) fall in line with the present study proved that Language games and activities provide students an opportunity for real communication, and, although there are some artificial limits, they help to link the classroom with the real world. Language games are a chance that students have to learn or reinforce their knowledge about a foreign language.

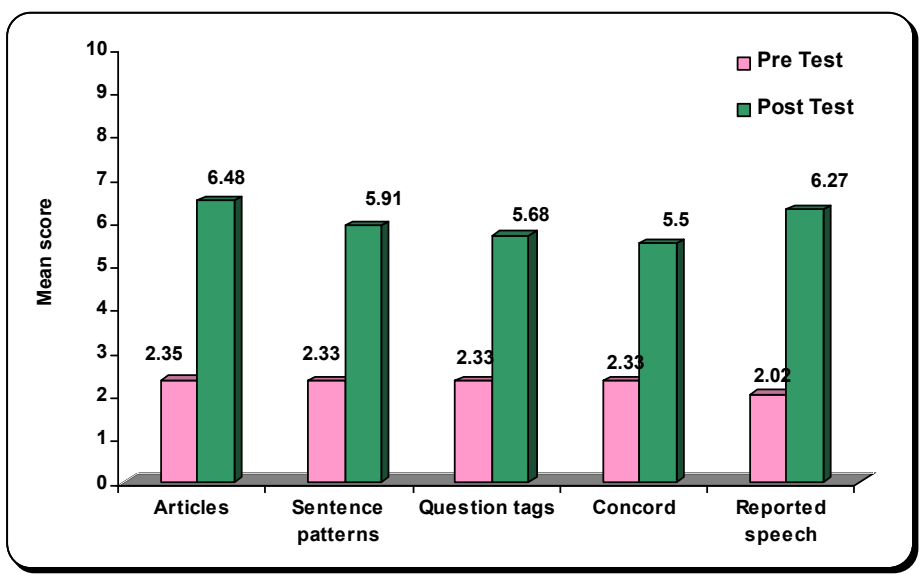

Figure 4.4: Post and Pre- test Mean Scores of the Experimental group for the Selected aspects of Grammar

4.2.6 Analysis of Pre and Post-tests Mean Scores of the Control Group - Aspect-Wise

The following Table 4.7 and Figure 4.5 shows the difference between pre and post- test mean scores of the control group-aspect-wise.

Table 4.7: Analysis of the Pre and Post-test Mean Scores of the Control Group- Aspect-wise

Grammar aspects	Pre test		Post test		t value
	Mean	SD	Mean	SD	
Articles	3.15	1.16	3.70	0.97	2.80**
Sentence patterns	2.62	0.94	3.88	0.69	8.40**
Question tags	2.32	0.97	3.58	0.81	7.80**
Concord	1.55	0.81	3.30	0.75	12.49**
Reported speech	1.42	0.81	3.27	0.58	14.41**

**** -Significant at 0.01 level**

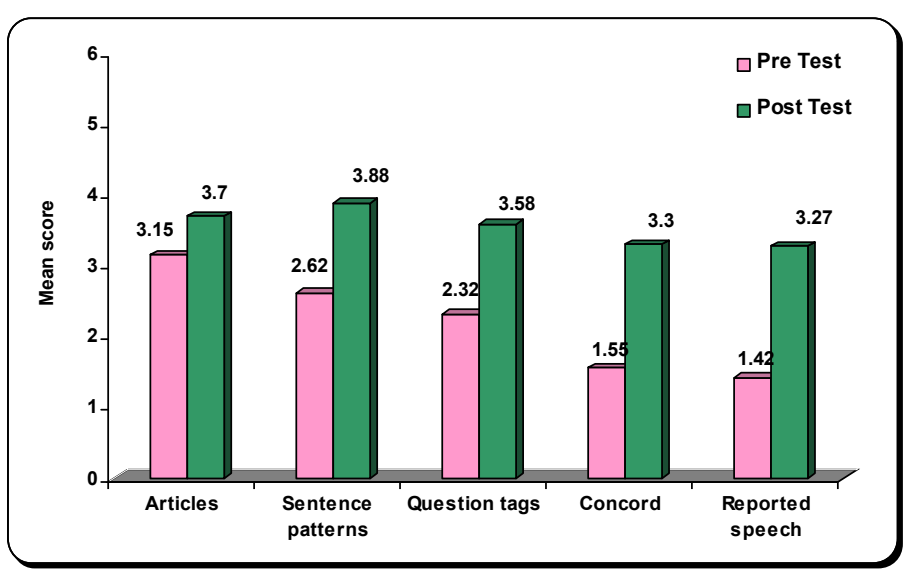

Figure 4.5 Differences Between Pre and Post-Test Scores of the Control Group for Selected Aspects

The above, Table 4.7 shows the obtained 't' values 2.80, 8.40, 7.80, 12.49, and 14.41 for articles, sentence patterns, question tags, concord and

reported speech respectively, are higher than the table value and hence significant at 0.01 level. It means that there is a significant difference between the pre-test and the post-test scores of the control group taught by conventional method in all aspects. Thus the hypothesis stated as Ho_6 "**There is no significant difference between the pre and post-tests mean scores of the control group with regard to the selected aspects of English grammar"** is rejected**.** It can be concluded that there is a rise in the mean scores of the post - test of control group (in all aspects) taught using conventional method of teaching grammar. The effect (r) values calculated for control and Experimental groups, in order to study the exact effectiveness between the 2 ratio of 't ' values of pre and post-test mean scores are shown in Figure 4.5 A.

Even though there exists a difference in the pre and post test scores in both control and experimental groups, the effect size when calculated showed higher effects in the experimental group (r = 0.84, 0.83, 0.83, 0.82, 0.88 for articles, sentence pattern, question tags, concord and reported speech respectively) when compared to the control group (r= 0.25, 0.61, 0.58, 0.75, and 0.79). These results shows that the games used to learn English grammar are very effective.

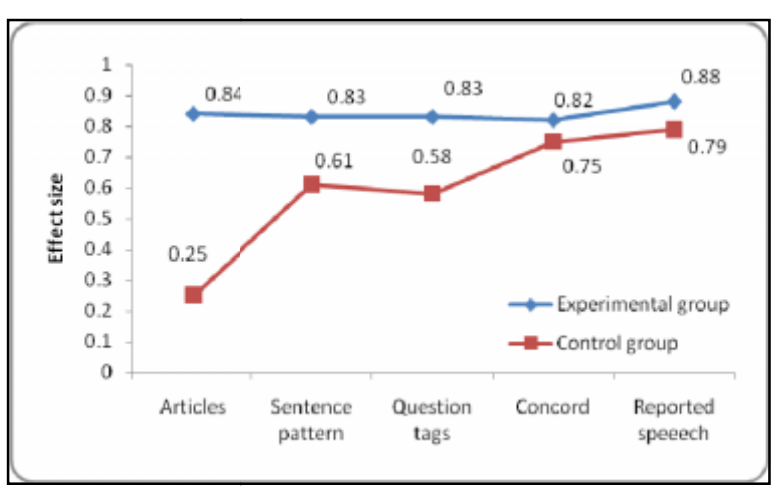

Figure 4.5 A. Effect Size for the 't' values of Pre and Post- Tests Mean Scores of Experimental and Control Groups

4.3 Analysis of Variance

4.3.1 Analysis of variance of pre -test scores of the experimental group in relation to fathers educational level

The details of the computation of analysis of variance of mean pre-test scores of the experimental group of the sample in relation to the educational level of the fathers is shown below in Table 4.8 and Figure 4.6.

In the table 4.8, the obtained 'F 'values 0.35, 0.44, 1.45, 2.90, 0.92 and 0.9 of articles, sentence patterns, question tags, concord, reported speech and all the aspects respectively, of the experimental group are lesser than the table value 2.97 and hence the relation between the educational level of the fathers and that of the pre-test mean scores of the experimental group of the sample is not significant . Thus the hypothesis stated Ho_7, ***"There is no significant difference among the pre-test scores (aspect-wise and in toto) of the experimental group in relation to the educational levels of the fathers",*** is accepted.

Table 4.8: Analysis of variance in relation to fathers' educational levels using the pre- test scores of experimental group

Educational level of Fathers									
Grammar aspects	**Illiterate**		**Primary School**		**High School**		**Higher Secondary**		**F values**
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	
Articles	2.2	1.20	2.70	1.20	2.30	1.17	2.40	0.72	0.35NS
Sentence patterns	2.1	1.20	2.10	1.16	2.40	1.04	2.55	1.01	0.44NS
Question tags	2.0	1.30	2.20	0.97	2.25	1.30	3.10	1.05	1.45NS
Concord	1.7	1.60	3.88	1.11	2.30	1.0	1.77	0.66	2.90NS
Reported speech	2.0	0.94	2.40	1.0	2.00	0.91	1.66	0.71	0.92NS
All aspects	10.0	2.66	12.3	2.64	11.28	2.3	11.55	1.88	0.9NS

NS - not significant

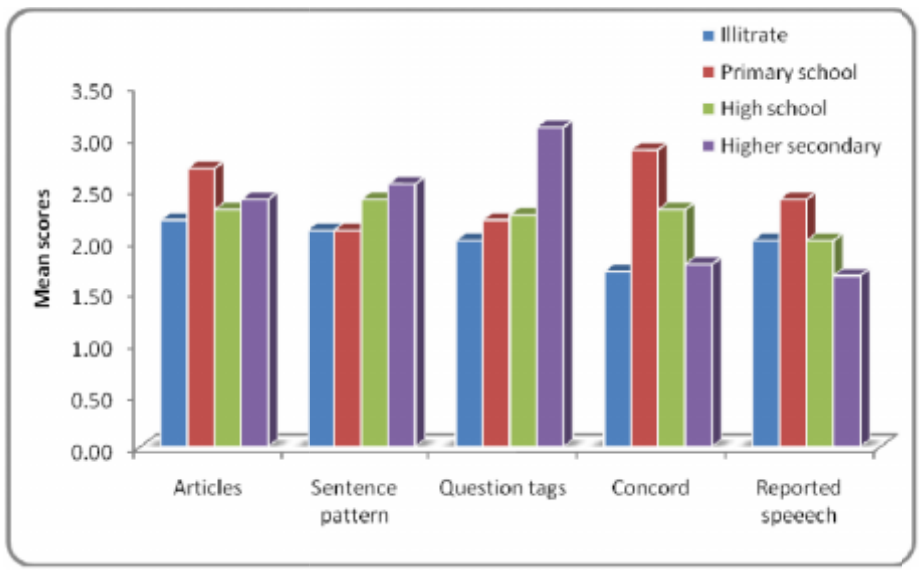

Figure 4.6 Influence of the Educational Level of the Fathers in the Learning of English Grammar by the Experimental Group of the Sample - 'Aspect-wise'

Fathers' educational level does not influence the learning of English grammar taught by language games in the experimental group as revealed from the pre-test mean scores of the experimental group.

4.3.2 Analysis of variance of post-test mean scores of experimental group in relation to the educational level of fathers

The details of the analysis of variance of mean post-test scores of the experimental group of the sample in relation to the educational level of the fathers is shown below in Table 4.9 and Figure 4.7.

Table 4.9: Analysis of Post-test Mean Scores of Experimental Group in Relation to Fathers' Educational Level

Educational level of Fathers									
Grammar aspects	**Illiterate**		**Primary School**		**High School**		**Higher Secondary**		**F values**
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	
Articles	6.7	1.4	6.3	1.4	6.3	1.5	6.9	1.96	0.37NS
Sentence patterns	6.5	1.35	5.5	1.2	5.8	1.2	5.8	1.5	0.89NS
Question tags	6.1	1.10	5.2	0.66	5.5	0.9	6.2	0.83	2.84NS
Concord	5.7	1.56	5.9	1.2	5.3	1.1	5.4	1.3	0.55NS
Reported speech	6.5	1.17	5.9	1.5	6.2	1.3	6.5	1.3	0.47NS
All aspects	31.5	2.67	28.9	2.8	29.28	2.5	31.0	3.70	2.39NS

NS - not significant

In the table 4.9, the obtained 'F' values 0.37, 0.89, 2.84, 0.55, 0.47 and 2.39 for articles, sentence patterns, question tags, concord, reported speech and all aspects of grammar as a whole (5 aspects) of the experimental group respectively, are lesser than the table value2.97and is not significant at 0.05 level. Thus the stated hypothesis Ho_8, ***"There is no significant difference among the post-test scores (aspect- wise and in toto) of the experimental group in relation to the educational levels of the fathers"*,** is accepted. Fathers' educational level does not influence the learning of English grammar taught by language games to the experimental group as revealed from the post-test mean scores of the experimental group.

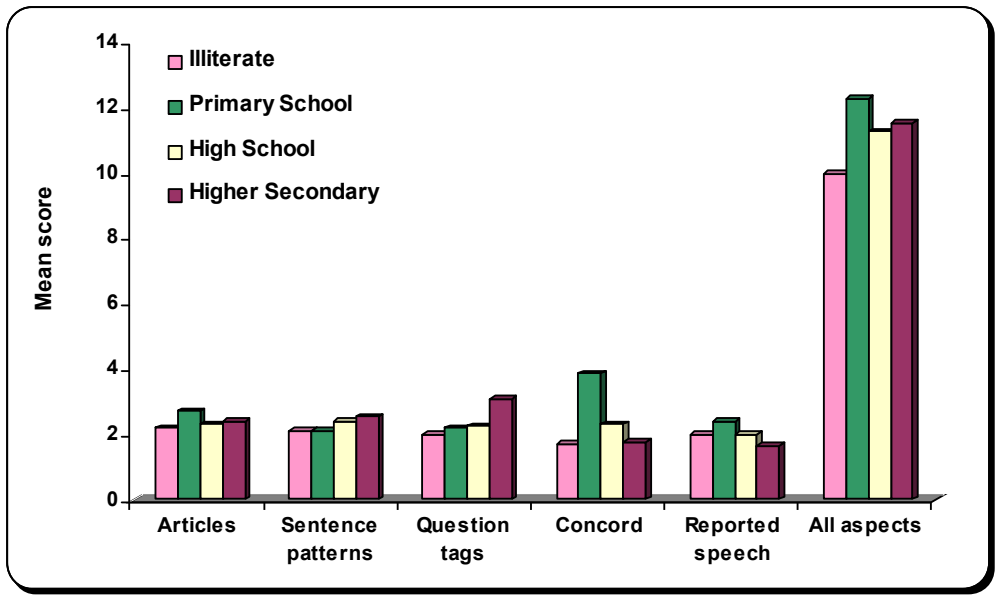

Figure 4.7. Influence of the Educational Level of Fathers in Learning English Grammar by the Experimental group - Aspect-Wise (Post-Test Mean Scores)

4.3.3 Analysis of Variance of Pre-test Scores of the Experimental Group in relation to Mothers Educational Level

The details of the analysis of variance of pre-test mean scores of the experimental group of the sample in relation to the educational level of the mothers' is shown in Table 4.10 and Figure 4.8.

Table 4.10 shows, the obtained 'F' values 0.46, 1.45, 1.12, 0.45, 2.55 and 1.04 of articles, sentence patterns, question tags, concord, reported speech and grammar as a whole (5 aspects)of the experimental group respectively, are lesser than the table value, 2. 97 and it is not significant at 0.05 level. Thus the hypothesis stated Ho_9, ***"There is no significant difference among the pre-test scores (aspect wise and in toto) of the experimental group in relation to the educational levels of the mothers"*,** is accepted. Mothers' educational qualification does not influence the learning of English grammar in the experimental group as revealed from the pre-test scores of the experimental group.

Table 4.10: Analysis of Variance of Pre-test Scores of Experimental Group in Relation to Mothers' Educational Level

Grammar Aspects	Educational level of Mothers								
	Illiterate		Primary Level		High School level		Higher Sec. level		Calculated F value
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Article	2.2	0.7	2.3	1.18	2.5	1.66	2.08	1.24	0.46(NS)
Sentence patterns	2.0	0.81	1.87	0.99	2.6	1.2	2.25	0.86	1.45(NS)
Question tags	1.9	0.99	2.5	1.19	2.3	1.2	2.83	1.58	1.12(NS)
Concord	2.5	0.97	2.3	1.18	2.2	1.1	2.0	0.95	0.45(NS)
Reported speech	1.8	0.78	2.6	0.74	2.1	0.92	1.58	0.90	2.55(NS)
All aspects	10.4	2.01	11.75	2.6	11.6	2.14	10.75	2.73	1.04(NS)

NS : not significant **Table Value - 0.05 level = 2.97**

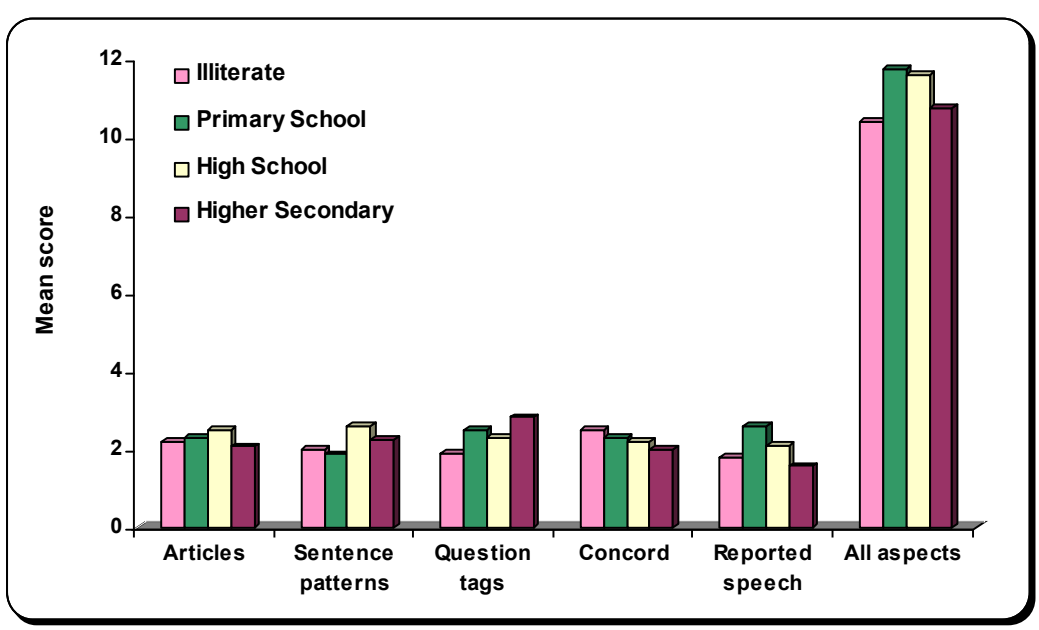

Figure 4.8: Influence of the Educational Levels of the Mothers in the Learning of English grammar by the Experimental Group of the Sample - 'Aspect-Wise' (Pre-test Mean Scores)

4.3.4 Analysis of Variance of Post-test Scores of the Experimental Group in Relation to Mothers Educational Level

The details of the analysis of variance of mean post-test scores of the experimental group of the sample in relation to the educational level of the mothers' is shown below in Table 4.11.

Table 4.11: Analysis of Variance of Post-test Mean Scores of Experimental Group in Relation to Mothers' Educational Level

Educational level of Mothers									
Grammar Aspects	**Illiterate**		**Primary School**		**High School**		**Higher Secondary**		**Calculated F value**
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	
Articles	6.0	1.63	6.25	1.7	6.4	1.38	7.08	1.78	0.96(NS)
Sentence patterns	5.7	1.41	5.12	0.64	6.66	1.41	6.25	1.28	1.44(NS)
Question Tags	6.1	0.99	5.12	0.83	5.5	0.89	6.08	0.90	2.76(NS)
Concord	6.0	1.3	5.12	0.99	5.6	1.24	4.9	0.90	1.98(NS)
Reported Speech	6.6	1.4	5.5	0.53	6.3	1.41	6.4	1.4	1.12(NS)
All aspects	30.4	3.09	27.13	1.73	30.03	3.1	30.7	2.0	3.14*

NS: not significant *** Significant at 0.05 level**

In the above Table 4.11, the obtained 'F' values0.96, 1.44, 2.76, 1.98 and 1.12 for articles, sentence patterns, question tags, concord and reported speech of the experimental group respectively, are lesser than the table value 2.97, but for all aspects put together the value (3.14) is higher than the table value 2.97 at 0.05 level. The post-test mean F value is not significant at 0.05 levels for individual aspect but for all aspects put together (Total) the F value is significant are 0.05 level. Thus the hypothesis stated as no. Ho_{10}, "***There is no significant difference among the post-test scores (aspect wise and in toto) of the experimental group in relation to the***

educational levels of the mothers", is accepted partly. Mothers' educational qualification does not influence the learning of English grammar taught by language games to the experimental group, aspect-wise but has influenced for all aspects put together in the study for the post-test.

4.3.5 Analysis of variance of the pre-test scores of the experimental sample - in relation to brothers' educational level

The details of the analysis of variance of mean pre-test scores of the experimental group of the sample in relation to the educational level of the brothers' is shown below in Table 4.12 and Figure 4.9.

Table 4.12: Analysis of Variance by using the Pre-test Scores of the Experimental Group of the Sample in Relation to Educational Levels of Brothers

Grammar aspects	Illiterate		Primary School		High School		Higher Secondary		Calculated 'F' value
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Articles	2.25	1.06	-	-	2.44	1.03	2.36	1.2	0.11NS
Sentence patterns	2.5	1.31	-	-	2.44	0.96	2.18	1.02	0.54NS
Question tags	2.31	0.94	-	-	1.94	1.39	2.57	1.39	1.28NS
Concord	2.44	1.31	-	-	2.19	0.91	2.14	1.00	0.40NS
Reported Speech	2.0	1.03	-	-	2.12	0.81	1.96	0.92	0.16NS
All aspects	11.5	2.39	-	-	11.13	2.68	11.21	2.11	0.12NS

NS - not significant

Table 4.12 shows, the obtained 'F' values0.11, 0.54, 1.28, 0.40, and 0.16 and 0.12 of articles, sentence patterns, question tags, concord, and reported speech and all aspects of the grammar of the experimental group are lesser than the table value, 2.97 at 0.05 level and hence these are not significant. Thus the stated hypothesis, Ho_{11}, ***"There is no significant difference among the pre-test score (aspect-wise and in toto) of the***

experimental group in relation to the educational level of the brothers'", is accepted.

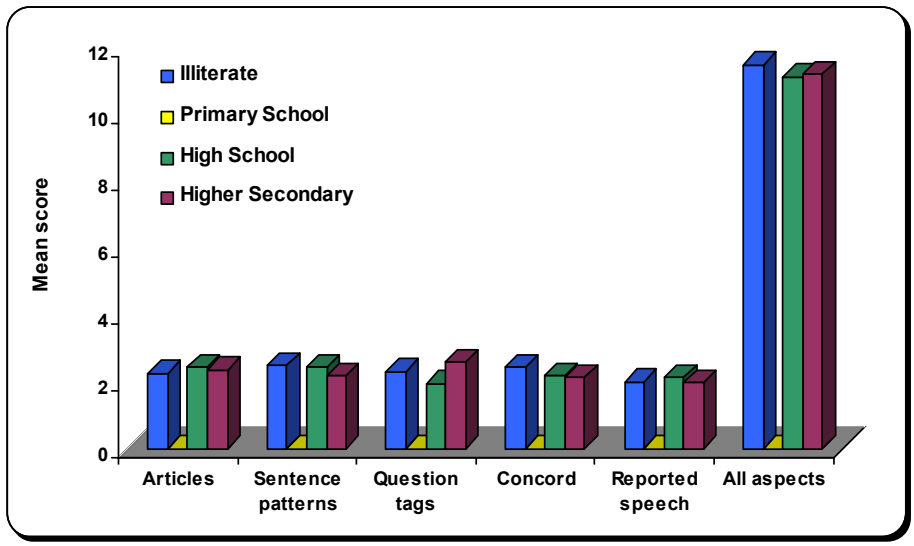

Figure 4.9: Influence of the Education of the Brothers in the Learning of English Grammar by the Experimental Group of the Sample - Aspect-Wise (Pre-test)

As a conclusion, the above analysis reveals that the 'F' values of the pre-test scores of the experimental group with regard to brothers education is not significant. This deduces that brothers' education at different levels with regard to articles, sentence patterns, question tags, concord, reported speech and all aspects in total are in no way influencing the experimental group in their grammar performance.

4.3.6 Analysis of Variance of the Post-test Score of the Experimental Group in Relation to the Educational Level of the Brothers:

The details of the analysis of variance of the mean post-test scores of the experimental group of the sample in relation to the educational level of the brothers is shown below in Table 4.13 and Figure 4.10.

The obtained 'F' values 0.12, 1.79, 0.45, 0.27, 1.15 and 0.09 of articles, sentence patterns, question tags, concord, reported speech and all

aspects of the post-test mean scores of the experimental group respectively, are lesser than the table value and hence not significant. So the stated hypothesis Ho_{12}, ***"There is no significant difference among the post-test scores (aspect-wise and in toto) of the experimental group in relation to the educational levels of the brothers",*** is accepted.

Table 4.13: Analysis of Variance of Post-test Scores of the Experimental Group-Aspect-Wise in Relation to Education of Brothers

Grammar Aspects	Educational Level of Brothers								'F' value
	Illiterate		Primary		High School		Higher Secondary		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Articles	6.56	1.6	-	-	6.3	1.7	6.5	1.4	0.12NS
Sentence Patterns	6.44	1.5	-	-	5.6	1.3	5.78	1.19	1.79NS
Question tags	5.5	1.03	-	-	5.8	0.75	5.71	1.01	0.45NS
Concord	5.6	0.81	-	-	5.3	1.19	5.5	1.45	0.27NS
Reported speech	6.0	1.63	-	-	6.6	1.3	6.17	1.18	1.15NS
All aspects	30.1	2.96	-	-	29.75	3.0	29.7	2.99	0.09NS

NS - not significant

This shows that brothers' education at different levels with regard to learning of grammar aspects namely, articles, sentence patterns, question tags, concord reported speech and all 5 aspects in no way influences as revealed in the post-test mean scores of experimental group of VIII Std pupils.

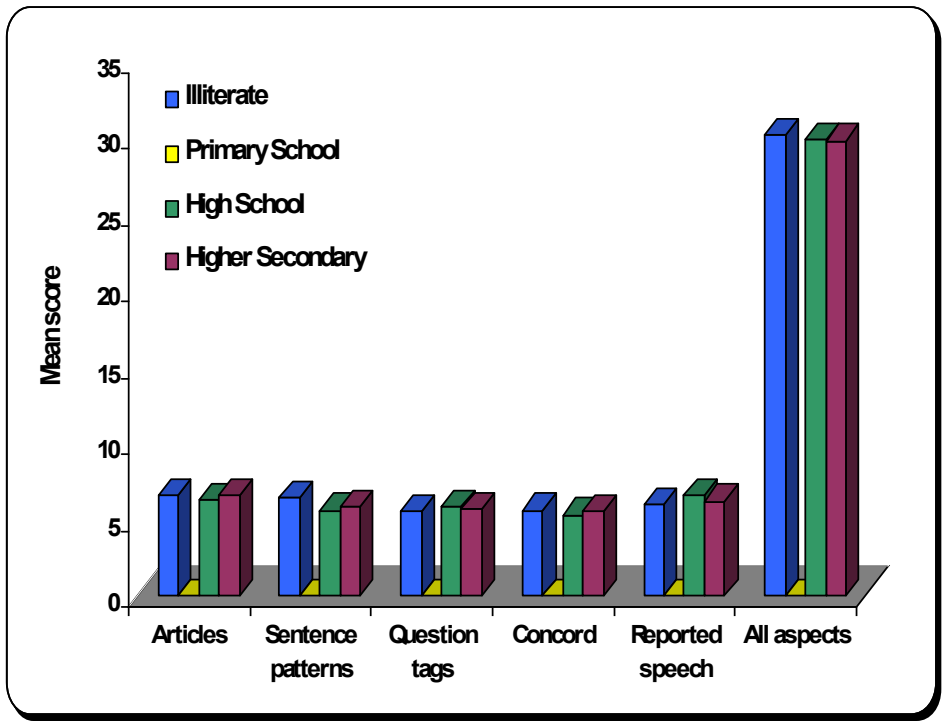

Figure 4.10: Influence of the Education of Brothers in the learning of English Grammar by the Experimental group of the Sample - Aspect-Wise (Post-test)

4.3.7 Analysis of Variance of Pre-test Scores of the Experimental Group in Relation to the Educational Level of Sisters

The details of the analysis of variance of the pre-test mean scores of the experimental group of the sample in relation to the educational level of the sisters is depicted below in Table 4.14 and Figure 4.11.

Table 4.14: Analysis of Variance of Pre-test Scores of the Experimental Group-Aspect-Wise in Relation to the Education Level of Sisters

Grammar Aspects	Educational level of sisters								'F' value
	Illiterate		Primary school		High school		Higher sec.		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Articles	2.3	1.11	2.00	0	2.4	0.99	2.35	1.32	0.76NS
Sentence patterns	2.2	0.94	1.5	0.70	2.91	1.08	2.23	1.25	1.80NS
Question tags	2.44	1.29	2.00	0	2.50	1.00	2.05	1.48	0.45NS
Concord	2.31	1.00	4.00	0	1.83	1.02	2.17	1.07	2.68NS
Reported Speech	2.03	0.98	2.00	1.41	2.08	0.90	1.9	0.83	0.06NS
All aspects	11.34	1.99	11.5	2.12	11.75	2.26	10.78	2.92	0.45NS

NS - not significant

The obtained 'F' values0.76, 1.80, 0.45, 2.68, 0.06 and 0.45 of articles, sentence patterns, question tags, concord, reported speech and grammar as a whole (5 aspects)of the experimental group respectively, are lesser than the table value 2.97and hence pre-test mean 'F' value is not significant. Thus the hypothesis stated as Ho_{13}, ***"There is no significant difference among the pre-test scores (aspect-wise and in toto) of the experimental group in relation to the educational levels of the sisters",*** is accepted.

This shows that sisters' education at different levels with regard to the learning of grammar aspects namely articles, sentence patterns, question tags, concord, reported speech and all 5 aspects in no way influences the experimental group in learning grammar.

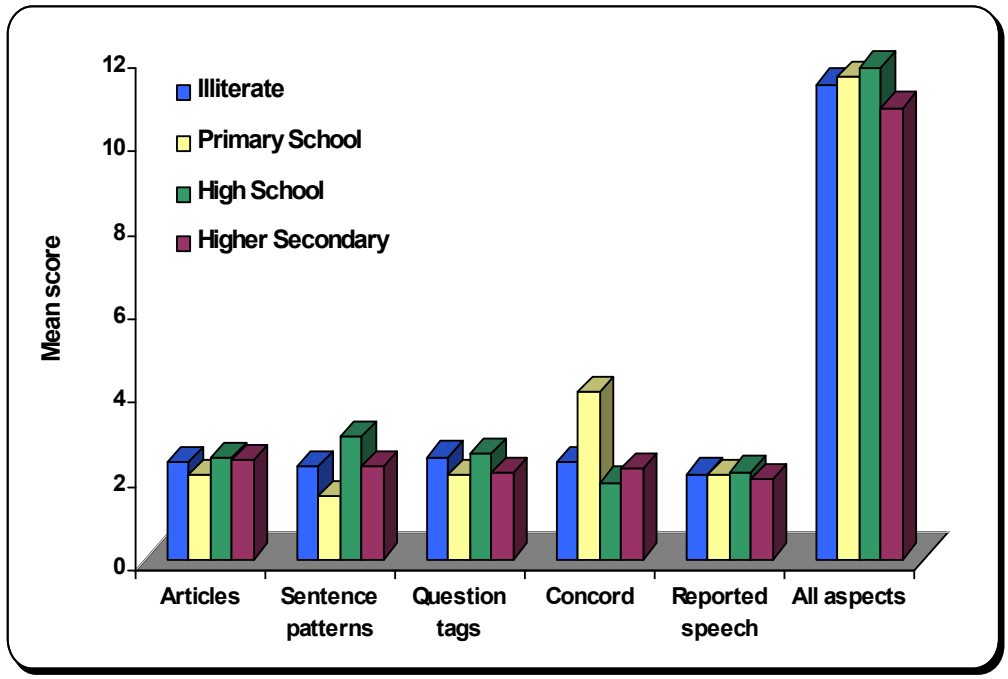

Figure 4.11: Influence of the Education of Sisters in the Learning of English Grammar by the Experimental Group of the Sample - Aspect-Wise (Pre-Test)

4.3.8. Analysis of Variance of the Post-test Scores of Experimental Group Aspect Wise in Relation to Educational Level of Sisters

The details of the analysis of variance of the mean post-test scores of the experimental group of the sample in relation to the educational level of the sisters' is shown below in Table 4.15 and Figure 4.12.

Table 4.15: Analysis of Variance of Post-test Scores of the Experimental Group in Relation to the Educational Levels of Sisters

Grammar aspects	Educational Level of Sisters								'F' value
	Illiterate		Primary		High School		Higher Secondary		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Articles	6.86	1.61	6.50	0.70	5.75	1.42	6.35	1.49	1.54NS
Sentence Patterns	5.69	1.33	6.60	2.12	6.17	1.27	6.06	1.34	0.60NS
Question tags	5.62	0.86	4.00	0	5.92	0.99	5.82	0.95	2.73NS
Concord	5.55	1.32	6.00	0	5.75	1.29	5.18	1.07	0.67NS
Reported Speech	6.28	1.13	7.00	2.8	6.08	1.44	6.29	1.57	0.26NS
All aspects	30.00	2.76	30.00	5.65	29.67	2.34	29.71	3.5	0.05NS

NS - not significant

The obtained 'F' values1.54, 0.60, 2.73, 0.67, 0.26 and 0.05 of articles, sentence patterns, question tags, concord, reported speech and grammar as a whole (5 aspects)of the experimental group respectively, are lesser than the table value 2.97and therefore the post-test mean 'F' values are not significant at 0.05 level. Thus the hypothesis stated as Ho_{14},***"There is no significant difference among the post-test scores (aspect wise and in toto) of the experimental group in relation to the educational levels of the sisters",*** is accepted.

This reveals that sisters' education at different levels with regard to the learning of grammar aspects namely articles, sentence patterns, question tags, concord, reported speech and all 5 aspects in no way influences experimental group in learning grammar when taking the post-test scores into account.

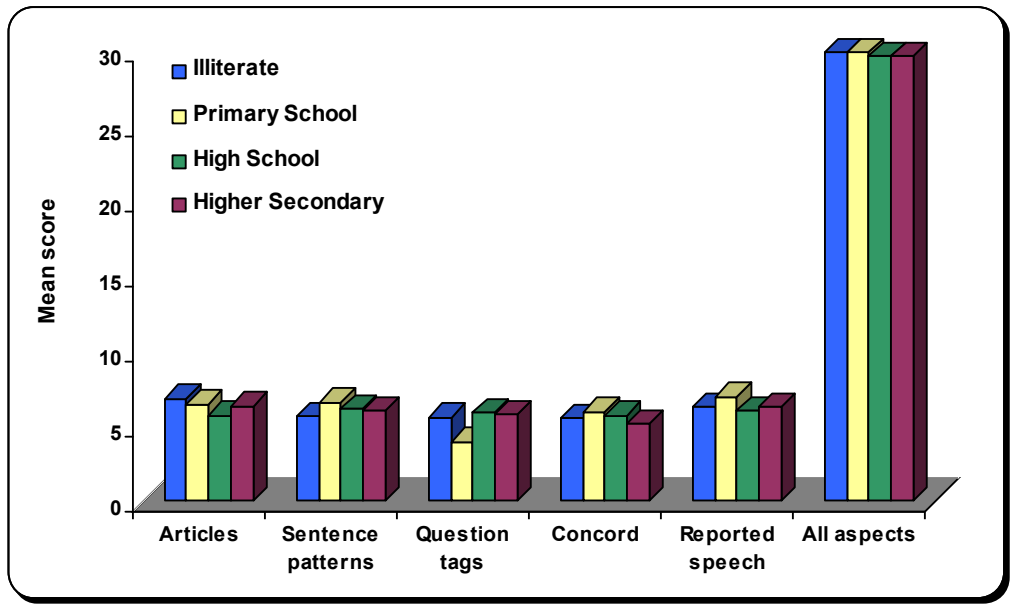

Figure 4.12: Influence of the Education of Sisters in the Learning of English Grammar by the Experimental Group of the Sample-Aspect-Wise (Post-test)

4.3.9 Analysis of Variance of the Post-test Mean Scores of the Experimental Group in Various Games Aspect-Wise

The details of the analysis of variance of mean scores of the experimental group of the sample with regard to the language games used for learning English grammar aspect-wise is shown below in Table 4.16 and 4.16 A

Table 4.16: Analysis of Variance on Different Games used in Learning English Grammar -Aspect-Wise

Grammar aspects	Game 1		Game 2		Game 3		Game4		'F' value
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Articles	7.13	1.06	5.0	1.11	6.03	1.16	6.05	1.25	34.25**
Sentence Patterns	6.12	0.99	7.53	1.14	6.56	1.15	5.93	0.86	28.12**
Question tags	5.86	0.62	6.06	0.79	6.01	0.62	7.75	1.06	73.89**
Concord	7.98	0.85	6.41	1.11	5.55	1.43	6.06	1.00	47.16**
Reported Speech	5.80	1.24	5.70	0.74	6.06	1.00	6.11	0.90	24.3**

**** Significant at 0.01 level**

Table 4.16 shows, the obtained 'F' values for 4 different games used in each of the 5 aspects of English grammar learning as 34.25, 28.12, 73.89, 47.16and 24.3 for articles, sentence patterns, question tags, concord and reported speech respectively. All the 5 values are higher than the Table value of 4.64 at 0.01 level and so significant. Thus the hypothesis stated as H_{15}, ***"There is no significant difference among the scores of experimental group in relation to various games used for various aspects in learning English grammar"*** is rejected.

From the above analysis that reveals, that the 'F' values being significant, G1 for articles with higher mean (7.13) G2of sentence patterns with higher mean (7.53), G4of question tags with higher mean (7.75), G1 of concord with higher mean (7.98) and G4 of reported speech with higher mean (6.11)are better compared to other games in their aspect groups. Further to refer the games in each aspect with higher mean mentioned above in articles, 'FILL IN THE POUCHES' is played with more interest and joy as the pupils were provided with attractive and colorful pouches to fill the strips within a short stipulated period of time than the remaining 3 games G2 (Flower arrangement), G3(Lucky corner) and G4 (Passing the

parcel). When 'Sentence patterns' is taken G2 named as, 'SP Cricket match' has gained the priority probably because the word ' CRICKET' itself is liked by all, especially pupils and it sounds to be trendy than the remaining 3 games namely G1(SP EXPRESS), G3(HIDE AND SEEK) and G4 (CARROM BOARD).

When taking 'question tags' into consideration it is G4 named as, 'FIXING FOX'TAIL' that has gained a higher mean score, because the pupils were excited to fix the tail for the tailless fox than the remaining 3 games,G1 (HEN AND ITS EGGS),G2(MUNCH THE CHOCOLATE) and G3(Hidden Treasure). When taking concord, it is G1 named 'BUGER TO TASTE', that has gained a higher mean score in which pupils pretend to taste and so enjoyed and scored higher than the remaining 3 games G2(Your Lucky Lot) , G3 (Rapid Fire) ,G4(Made for each).When taking, reported speech it is G4 named as 'Lolly Pop' that has gained a higher mean score, in which pupils get lolly pop on which they write correct answer, and pretend to eat than the remaining 3 games G1 (Sword and its sheath), G2 (Custodian) and G3 (Clean the Bin).

This proves that learning and practising English grammar through various language games used in the study are all effective as shown by significant results.

Nguyen et al. (2003) study goes in line with the present study and his research showed that the games were effective in helping students to improve their vocabulary building skills. Mohammad et al. (2009) study is also similar to the present study, proving that games make the student study in groups competitively and learnt vocabulary and grammar with hilarity and laughter.

Further computation of analysis of variance of average of the mean of the 4 games in each aspect of language games in the learning of English

grammar (5 aspects) by the experimental group of the samples is given in table 4.16A.

Table 4.16A: Analysis of Variance of Average of Mean Scores o Different Games used in Grammar Learning-Aspect-Wise

Grammar aspects	Mean	SD	'F' value
Articles	6.05	0.59	19.12**
Sentence Patterns	6.53	0.56	
Question Tags	6.42	0.38	
Concord	6.54	0.51	
Reported Speech	5.92	0.47	

**** Significant at 0.01 level**

As seen in table, the calculated 'F' value is higher (19.12) than the table value at 0.01 level. Hence in the Ho_{15} **"There is no significant difference in the games used for different grammar learning aspects"** is rejected as a whole.

As a conclusion the language games used for all selected grammar aspects is statistically significant and the games are effective in learning the selected aspects of grammar used in the study.

4.3.10 Analysis of Post-test Mean Scores of the Control Group- Gender-Wise

The following table shows the difference between boys and girls in learning English grammar (aspect-wise) in the post-test scores of the control group

From the table 4.17 it is inferred that the obtained 't' 5.39 for the total score for all the 5 aspects is above the table value at 0.01 level, and hence there is a significant difference between the boys and girls in the total score in learning of the English grammar. The obtained 't' is 4.17 in the aspects articles, 2.54 in the aspect sentence patterns and 2.83 in the aspect reported speech are above the table value at 0.05 level and so the difference is significant. The 't' value 0.15 for question tags and 1.75 for the aspect concord are below the table value for 0.05 level and so the difference is not significant. Hence, the hypothesis stated as Ho_{16}, ***"There is no significant difference between boys and girls in the learning English grammar - aspect-wise and in toto as depicted in the post-test mean scores of the control group"*** is rejected with respect to articles, total scores, sentence patterns and reported speech and accepted for question tags and concord**.**

Table 4.17: Analysis of Post- test Means Scores of the Control Group- Gender-Wise

Grammar aspects	Boys N=30		Girls N=30		't' value
	Mean	SD	Mean	SD	
Articles	3.23	0.94	4.17	0.79	4.17*
Sentence Patterns	3.67	0.66	4.10	0.66	2.54*
Question Tags	3.57	0.72	3.60	0.89	0.15NS
Concord	3.17	0.74	3.50	0.73	1.75NS
Reported Speech	3.07	0.52	3.47	0.57	2.83*
All aspects	16.70	1.62	18.83	1.44	5.39**

**** Significant at 0.01 level * Significant at 0.05 level NS-Not significant**
Table Value-0.01 level=4.64 Table value-0.05 level=2.54

To conclude, the above analysis reveals that the 't' value of the mean post-test scores of the control group with respect to gender in learning English grammar is significant statistically in learning articles, sentence patterns reported speech and for the total score. Further the mean values of post-test scores of the control group in all these aspects and in toto are higher for girls compared to the means of boys. So it is seen that the girls have performed better in the post assessment stage than boys and the differences are higher in the aspects of grammar as noted above.

4.3.11 Analysis of Post-test Mean Scores of the Experimental Group - Gender-Wise

The following Table shows the difference between boys and girls as seen from the mean post-test scores of the experimental group.

Table 4.18: Analysis of Post-test Mean Scores of the Experimental Group- Gender-Wise

Grammar aspects	Boys N=30		Girls N=30		't' value
	Mean	SD	Mean	SD	
Articles	6.40	1.69	6.57	1.43	0.41NS
Sentence Patterns	6.07	1.33	5.77	1.33	0.87NS
Question Tags	6.00	0.83	5.37	0.96	2.73*
Concord	5.43	1.43	5.57	1.00	0.42NS
Reported Speech	6.87	1.40	5.67	0.99	3.8*
All aspects	30.77	2.16	28.93	3.33	2.53*

***Significant 0.05 level** **NS - not significant**

From the table 4.18, it is inferred that the obtained 't' value is 2.73for the aspect - question tags, 3.8for the aspect reported speech and 2.53 for all the 5 aspects. Since these 't' values are higher than the table value these differences are significant at 0.05 level. The 't' value 0.41 for the aspect, articles,0.87 for the aspect, sentence patterns and 0.42 for the aspect, concord are less than the Table value 2.50 at 0.05 level and hence, the

difference between boys and girls in the post-test mean scores of the experimental group is not significant. Hence, the hypothesis stated as Ho_{17},***"There is no significant difference between boys and girls in the learning of English grammar -aspect-wise and in toto as depicted in the post-test mean scores of the experimental group"*** is rejected with respect to question tags, reported speech and for the total scores, but accepted for articles, sentence patterns and concord.

As seen from the means obtained the performance of boys is higher in the learning of English grammar compared to girls, for aspects namely - question tags, reported speech and in all aspects put together.

The results go in line with the present study of Joy et al (2011) proved that narrative did increase student experience of flow and positive perceptions of the game, especially when males were matched with the masculine version of the game. Increased learning outcomes took place only when students were placed in the masculine narrative and when males were matched to the masculine narrative.

4.3.12 Analysis of mean gain scores of the post-test-Experimental group over the Control group

Comparison of the mean gain scores of English grammar proficiency of the experimental over the control group pupils is given in Table 4.19 and Figure 4.13.

The objective was to compare the mean gain score of English grammar proficiency of the experimental and the control group of pupils of VIII std. The scores were analysed with the help of Independent sample 't'test.

Table 4.19: Analysis of mean gain scores of the sample - aspect-wise.

Aspects	Group	N	Mean Gain scores	SD	Critical Ratio
Articles	Experimental	60	4.13	1.77	13.44**
	Control	60	0.55	1.06	
Sentence Patterns	Experimental	60	3.58	1.63	9.50**
	Control	60	1.27	0.95	
Question Tags	Experimental	60	3.35	1.40	9.50**
	Control	60	1.27	0.95	
Concord	Experimental	60	3.27	1.58	6.37**
	Control	60	1.78	0.87	
Reported Speech	Experimental	60	4.25	1.83	9.36**
	Control	60	1.85	0.78	
All aspects	Experimental	60	18.58	3.92	20.46**
	Control	60	6.72	2.20	

****Significant at 0.01 level**

From the table XXII, it is observed that the obtained 't' values 13.44, 9.50, 9.50, 6.37, 9.36 and 20.46 for articles, sentence patterns, question tags, concord, reported speech and all 5 aspects are above the table value at 0.01 level and hence the difference between the mean gain scores of the experimental group over the mean gain scores of the control group are statistically significant at 0.01 level, for all aspects and in toto. Thus, the stated hypothesis Ho_{18}, ***" There is no significant difference between the mean gain scores of the experimental group taught using language games over the control group taught using conventional method in the learning of various aspects of English grammar and in toto''*** is accepted.

Further, **the mean gain scores** of English grammar proficiency of the experimental group are 4.13, 3.58, 3.35, 3.27, 4.25 and 18.58 and the control group are 0.55, 1.27, 1.27, 1.78, 1.85, 2.20for various aspects and in to respectively. It is obvious that the difference of the experimental group and the control group **reveals that there is a significant difference between the mean gain scores** of the experimental group taught using language games over the control group taught by conventional method.

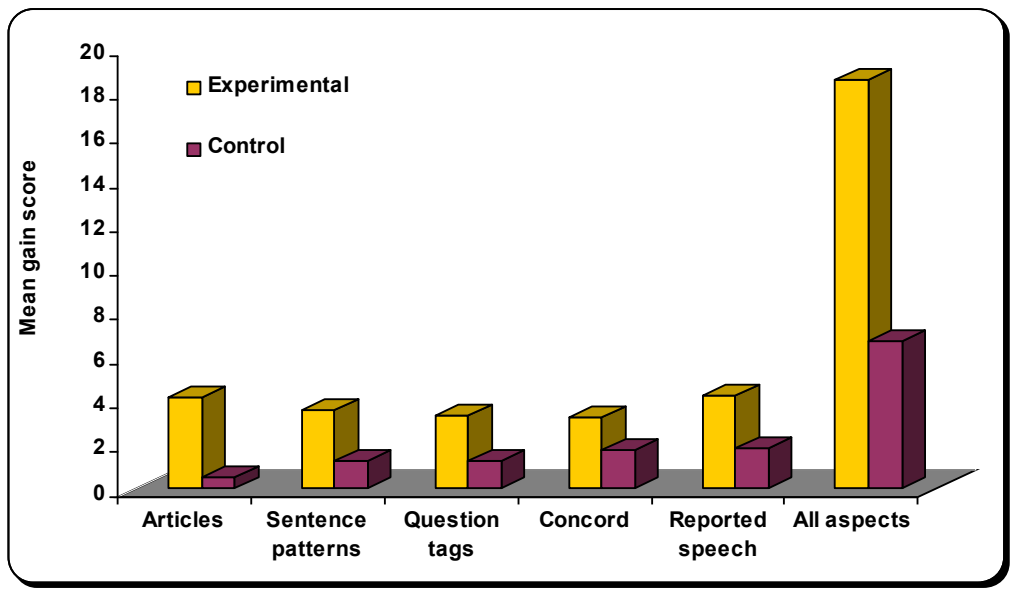

Figure 4.13: Bar Diagram showing the Mean Gain Score Differences between the Experimental Group and Control Group

4.4 Conclusion

From the above inferences, the investigator came to the conclusion that language games for English grammar learning helped in the improvement of learning, understanding and applying grammar in the right context. The analysis of this chapter helped the investigator to arrive at the findings and offer the recommendations and suggestions for further research which are presented in the next chapter.