CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

4.0 INTRODUCTION

Analysis refers to a critical assessment of the gathered and organized facts in order to investigate the features of the issues. After the data is collected, it must be processed and analyzed in line with the guidelines established during the research plan development process. This is necessary for the scientific study and to guarantee that we have all the pertinent data for the planned comparisons and analysis. Editing, coding, classifying, and tabulating the gathered data are the main tasks of analysis. The computation of certain metrics and the pattern-searching for links between the data groups are referred to as analysis.

The current investigation was an experimental one. The effectiveness of drama activities were seen in terms of achievement in listening and speaking skills. The reaction of the students was also measured towards the drama activities used for teaching English.

For a single academic year that is 2022-2023 a division of class XI pupils participated in Drama activities which acted as an experimental group. Chapter III contains a description of this. Based on the pre-test and post-test non-equivalent control group design employed in this study, students from a different division of class XI of the same school were selected to form the control group.

To find the effectiveness of the drama activities the collected data were analyzed quantitatively. In the quantitative analysis mean of post test scores, standard deviation, standard error of mean, Mann-Whitney U-test, Wilcoxon signed ranks test and Intensity Indices were used. The analysis and interpretation are given under the caption 4.1.0. The reaction of the experimental group towards teaching of English through drama activities was analysed through frequesncy, percentage and intensity index.

4.1 DATA ANALYSIS AND INTERPRETATION

The analysis of data and interpretation were done objective-wise. In the present study, the focus was teaching English through drama activities for enhancement in listening and speaking skills. The objectives are related to the development of drama activities, to implement these drama activities, to examine the effectiveness of the drama activities in terms of achievement in

listening and speaking skills and to collect the reaction of students towards the drama activities used for teaching English as shown in Table 4.1.

4.1.1 DATA ANALYSIS OF OBJECTIVE 1

"To develop drama activities for the teaching of English for enhancing communication skills in the English Language". There were no statistics used for this objective which has been described in Chapter III

4.1.2. DATA ANALYSIS OF OBJECTIVE 2

"To implement drama activities to enhance communication skills in the English language." There were no statistics used for this objective which has been described in Chapter III

4.1.3. DATA ANALYSIS OF OBJECTIVE 3

"To study the effectiveness of the drama activities in terms of achievement in (i)speaking skills and (ii) listening skills."

Table 4.1: Mean, Standard Deviation, Standard Error of Mean of Experimental group for enhancement in listening and speaking skills.

Overall marks of the experimental group out of 100		N	Mean	Standard Deviation	Standard Error of Mean
	Pre-test	26	69.80	6.70	1.31
	Post-test	26	73.80	6.03	1.18

From Table 4.1, it was found that the mean scores of the students for overall marks of the experimental group in pre-test and post-test for overall speaking and listening skills out of 100 were 69.80 and 73.80 respectively. The standard deviation from the scores for overall marks of the experimental group was found to be 6.70 and 6.03 respectively for the pre-test and post-test. The standard error of the mean was 1.31 and 1.18 for the respective pre-test and post-test. Comparing means it was found that the mean of the post-test was higher than the pre-test. From standard deviations it was observed that pre-test was more heterogeneous than the post-test. The higher mean score of post-test in overall marks of the experimental group in comparison

to the pre-test may be due to drama activities used for enhancing speaking and listening skills in English language. To find whether the difference in the mean was significant or by chance and to test the null hypothesis i.e. Ho, **"There will be no significant difference between the mean pre-test and post-test scores of students of the experimental group of class XI in the overall enhancement of speaking and listening skills."**, Wilcoxon Signed Ranks test was used as the sample was taken by convenience sampling technique. The summary of the Wilcoxon Signed Ranks test in given table, which is followed by an interpretation.

Table 4.2: Summary of the Wilcoxon Signed Ranks test for Overall marks of experimental group in pre-test and post-test out of 100 with the number of samples, sum of ranks, Wilcoxon W, Z-value and probability

Overall marks of the experimental group out of 100	N	Sum of Ranks	Wilcoxon W	Z- Value	Probability (p)
Pre-test	26	573.00	573.000	- 4.30	0.000
Post-test	26	805.00			

From the table 4.2, it was found that the sum of ranks of overall marks of experimental group in pre-test and post-test out of 100 were 573 and 805 respectively with 26 students in each group. The Wilcoxon W and z-value were found to be 573 and -4.30 respectively. Referring the table for normal probability (Table A of Siegel, 1956) under null hypothesis (*Ho*) of z, for z <= -4.30, the two tailed probability was found to be 0.00 which was lesser than our decided $\alpha = 0.01$. Hence the null hypothesis i.e. Ho, **"There will be no significant difference between the mean pre-test and post-test scores of students of the experimental group of class XI in the overall enhancement of speaking and listening skills."** was rejected. Therefore it was clear that the mean post test scores and pre-test score of experimental group students differed significantly in terms of in overall marks out of 100 in English language. From Table 4.2 it was also established that the mean scores of the post-test were more than the mean scores of the pre-test that could be attributed to the use of drama activities in the enhancement of speaking and listening skills while teaching the English language. Hence it can be concluded that the overall enhancement in listening and speaking skills in the English language of the students in the post-test was stochastically higher than the students in the pre-test which was due to use of the drama activities.

Table 4.3: Mean, Standard Deviation, and Standard Error of the Mean of Experimental Group and Control Group for Achievement in Listening Skills in the English Language

Listening test (50 marks) in the English language	N	Mean	Standard Deviation	Standard Error of Mean
Experimental Group	26	36.50	3.88	0.76
Control Group	26	33.30	3.94	0.77

From Table 4.3, it was found that the mean scores of the students for the listening test (50 marks) in the English language of the experimental and the control group were 36.50 and 33.30 respectively. The standard deviation from the scores for the listening test (50 marks) in the English language in students was found to be 3.88 and 3.94 respectively for the experimental and the control group. The standard error of the mean was 0.76 and 0.77 for the respective groups. Comparing means it was found that the mean of the experimental group was higher than the control group. From standard deviations it was observed that the control group was more heterogeneous than the experimental group. The higher mean score of the experimental group in the listening test (50 marks) in the English language in comparison to the control group may be due to the use of drama activities in the achievement of the listening test in the English language through teaching. To find whether the difference in the mean was significant or by chance and to test the null hypothesis i.e. Ho, **"There will be no significant difference between the mean post-test scores of students of the experimental and control groups of class XI in the achievement of listening skills".** Mann-Whitney U test used as the sample was taken by convenience sampling technique. The summary of the Mann-Whitney U test in given table, which is followed by an interpretation as depicted Table 4.4.

Table 4.4: Summary of Mann-Whitney U-test for Listening Skill in the English Language for Experimental Group and Control Group Students with the Number of Sample, Sum of Ranks, U-value, and Z-Value and Probability

Listening test (50 marks)	N	Sum of Ranks	U-Value	Z- Value	Probability(p)
Experimental Group	26	832.00	195.00	-2.630	0.009
Control Group	26	546.00			

From the table 4.4, it was found that the sum of ranks of experimental and the control group students in listening test (50 marks) in English language were 832 and 546 respectively with 26 students in each group. The U-value and z-value were found to be 195.00 and -2.630 respectively. Referring the table for normal probability (Table A of Siegel, 1956) under null hypothesis (*Ho*) of z, for z <= -2.630, the two tailed probability was found to be 0.009 which was lesser than our decided $\alpha = 0.01$. Hence the null hypothesis i.e. **"There will be no significant difference between the mean post-test scores of students of the experimental and control groups of class XI in the achievement of listening skills"** was rejected. Therefore, it was clear that the experimental and the control group students differed significantly in terms of the listening test (50 marks) in English language. From table 1.4 it was also established that the mean scores of the experimental group were more than the mean scores of control group which could be attributed to the use of drama activities in the enhancement of listening skills while teaching the English language. Hence it can be concluded that the listening skills of the students in English language of the experimental group were stochastically higher than the students in the control group which was due to the implementation of drama activities as shown in Table 4.5.

Table 4.5: Mean, Standard Deviation, Standard Error of Mean of Experimental group and Control group for Achievement of Speaking test post-test marks of Experimental and Control Group in English language.

Speaking test (50 marks) in English language		N	Mean	Standard Deviation	Standard Error of Mean
	Experimental Group	26	37.30	2.88	0.56
	Control Group	26	34.69	3.43	0.67

From the table 4.5, it was found that the mean scores of the students for speaking test (50 marks) in English language of the experimental and the control group were 37.30 and 34.69 respectively. The standard deviation from the scores for speaking test (50 marks) in English language in students was found to be 2.88 and 3.43 respectively for the experimental and the control group. The standard error of mean was 0.56 and 0.67 for the respective groups. Comparing means it was found that the mean of the experimental group was higher than the control group. From standard deviations it was observed that control group was more heterogeneous than the experimental group. The higher mean score of the experimental group in speaking test (50 marks) in English language in comparison to the control group may be due to drama activities used in achievement of speaking skills in English language through the use of drama activities. To find whether the difference in the mean was significant or by chance and to test the null hypothesis i.e. Ho, **"There will be no significant difference between the mean post-test scores of students of the experimental and control group of class XI in the achievement of speaking skills."** Mann-Whitney U test used as the sample was taken by convenience sampling technique. The summary of the Mann-Whitney U test is given in the table below, which is followed by interpretation as given in Table 4.6.

Table 4.6: Summary of Mann-Whitney U-test for Speaking test in English language. For Experimental Group and Control Group students with the Number of Sample, Sum of Ranks, U-value, and Z-value and Probability

Speaking test (50 marks)	N	Sum of Ranks	U-Value	Z- Value	Probability(p)
Experimental Group	26	838.50	188.50	-2.750	0.006
Control Group	26	539.50			

From the table 4.6, it was found that the sum of ranks of experimental and the control group students in speaking skill test (50 marks) in English language were 838.50 and 539.50 respectively with 26 students in each group. The U-value and Z-value were found to be 188.50 and -2.750 respectively. Referring the table for normal probability (Table A of Siegel, 1956) under null hypothesis (*Ho*) of z, for z <= -2.750, the two tailed probability was found to be 0.006 which was lesser than our decided $\alpha = 0.01$. Hence the null hypothesis i.e. **"There will be no significant difference between the mean post-test scores of students of the experimental and control group of class XI in the achievement of speaking skills."** was rejected. Therefore, it was clear that the experimental and the control group students differed significantly in terms of the speaking test (50 marks) in English language. From table 4.6 it was also established that the mean scores of the experimental group were more than the mean scores of control group that could be attributed to the use of drama activities in the enhancement of speaking skills while teaching the English language. Hence it can be concluded that speaking skills in English language of the students in the experimental group was stochastically higher than the students in the control group which was due to the implementation of drama activities

No table of figures entries found.

Table 4.7: Mean, Standard Deviation, and Standard Error of Mean of Experimental Group and Control Group for Achievement in Overall Listening and Speaking skills in English Language.

Overall marks (100 marks) in English language		N	Mean	Standard Deviation	Standard Error of Mean
	Experimental Group	26	73.80	6.03	1.18
	Control Group	26	68.00	6.58	1.29

From the table 4.7, it was found that the mean scores of the students for overall marks (out of 100) in English language of the experimental and the control group were 73.80 and 68.00 respectively. The standard deviation from the scores for overall marks (out of 100) in English language in students was found to be 6.03 and 6.58 respectively for the experimental and the control group. The standard error of mean was 1.18 and 1.29 for the respective groups. Comparing means it was found that the mean of the experimental group was higher than the control group. From standard deviations it was observed that control group was more heterogeneous that the experimental group. The higher mean score of the experimental group in overall marks (out of 100) in English language in comparison to the control group could be attributed to the use of drama activities in the enhancement of speaking and listening skills while teaching the English language. To find whether the difference in the mean was significant or by chance and to test the null hypothesis i.e. Ho, **"There will be no significant difference in the mean post-test scores of students of the experimental and control groups of class XI in the overall achievement of speaking and listening skills.",** Mann-Whitney U test used as the sample was taken by convenience sampling technique. The summary of the Mann-Whitney U test in given table, which is followed by interpretation as given in Table 4.8.

Table 4.8: Summary of Mann-Whiteney U-test for overall marks in the English language for experimental group and control group students with the number of samples, sum of ranks, U-value, and Z-value and probability

Overall marks (out of 100)	N	Sum of Ranks	U-Value	Z- Value	Probability(p)
Experimental Group	26	851.00	176.00	-2.969	0.003
Control Group	26	527.00			

From the table 1.8, it was found that the sum of ranks of experimental and the control group students in overall marks (out of 100) in English language were 851.00 and 527.00 respectively with 26 students in each group. The U-value and Z-value were found to be 176.00 and -2.969 respectively. Referring the table for normal probability (Table A of Siegel, 1956) under null hypothesis (*Ho*) of z, for z <= -2.969, the two tailed probability was found to be 0.003 which was lesser than our decided $\alpha = 0.01$. Hence the null hypothesis i.e. **"There will be no significant difference in the mean post-test scores of students of the experimental and control groups of class XI in the overall achievement of speaking and listening skills."** was rejected. Therefore, it was clear that the experimental and the control group students differed significantly in terms of the overall marks (out of 100) in English language. From table 4.8 it was also established that the mean scores of the experimental group were more than the mean scores of control group that could be attributed to the use of drama activities for teaching English. Hence it can be concluded that the overall speaking and listening skills of the students in the experimental group was stochastically higher than the students in the control group which was due to implementation of drama activities in the teaching of English.

4.2.0: DATA ANALYSIS PERTAINING TO OBJECTIVE 4 :

"To study the reaction of students towards the drama activities used for teaching English." To study the reaction of students towards the drama activities reaction scale was used and data were analyzed.

The data of the reaction of all the students of the experimental group on the use of drama activities for teaching English to enhance speaking and listening skills in English was collected. Each statement had five alternatives mentioned in the scale. The five alternatives ranged from strongly agree, agree, undecided, disagree and strongly disagree. The scores were as follows:

Strongly agree (5), agree (4), undecided (3) and disagree (2) and strongly disagree (1). The percentage of the responses for each statement and the intensity index were calculated and are given in the table below. Intensity Index for each statement in the reaction scale was calculated using the formula given below:

Intensity Index = $\frac{\mathbf{5 x f1+ 4 x f2 +3 x f3+ 2 x f4+1 x f5}}{\mathbf{N}}$

f 1 = frequency of Strongly Agree;

f2 = frequency of Agree;

f3 = frequency of Undecided;

f4 = frequency of Disagree

f5 = frequency of Strongly Disagree

N = Number of respondents

For Average Index (AI) =Total of all Statement Intensity Indices/Number of Statements

REACTION SCALE

Put tick below numbers accordingly for

Strongly Agree : 5 ; Agree : 4 ; Un decided : 3 ; Disagree : 2 ; Strongly Disagree : 1

Sr. No.	Statement	SA	A	UD	D	SD	Intensity Index
1.	The drama activities to teach English were new.	80.77 (21)	15.38 (4)	3.85 (1)	0.00 (0)	0.00 (0)	4.77
2.	I was keen to understand the new way of learning English.	80.77 (21)	19.23 (5)	0.00 (0)	0.00 (0)	0.00 (0)	4.81

3.	The drama activities used for learning lessons made language learning very interesting and joyful.	69.23 (18)	26.92 (7)	3.85 (1)	0.00 (0)	0.00 (0)	4.65
4.	The various drama activities used were different from each other.	80.77 (21)	15.38 (4)	3.85 (1)	0.00 (0)	0.00 (0)	4.77
5.	I was interested in participating in the drama activities.	84.62 (22)	15.38 (4)	0.00 (0)	0.00 (0)	0.00 (0)	4.85
6.	The drama activities were interesting and joyful.	88.46 (23)	11.54 (3)	0.00 (0)	0.00 (0)	0.00 (0)	4.88
7.	The drama activities helped me to understand the subject effectively.	76.92 (20)	23.08 (06)	0.00 (0)	0.00 (0)	0.00 (0)	4.77
8.	The drama activities for listening were	0.00 (0)	0.00 (0)	3.85 (1)	11.54 (3)	84.62 (22)	4.80

	not interesting.						
9.	The drama activities for Speaking were not interesting.	0.00 (0)	0.00 (0)	3.85 (1)	7.69 (2)	88.46 (23)	4.84
10	I always felt that it was a usual regular class only with some drama activities.	38.46 (10)	19.23 (5)	0.00 (0)	42.31 (11)	0.00 (0)	3.54
11.	The syllabus of English was completed on time even while teaching with the drama activities.	84.62 (22)	15.38 (4)	0.00 (0)	0.00 (0)	0.00 (0)	4.85
12.	The classroom management was effective even with the participation of the students in drama activities.	69.23 (18)	19.23 (5)	11.54 (3)	0.00 (0)	0.00 (0)	4.58
13.	I was interested in participating	0.00 (0)	0.00 (0)	19.23 (5)	26.92 (7)	53.85 (14)	4.34

	in only few drama activities done in the class.						
14.	The drama activities were effectively linked with the chapters.	57.69 (15)	23.08 (06)	0.00 (0)	19.23 (5)	0.00 (0)	4.19
15.	The drama activities helped enhance my listening and speaking skills in English.	80.77 (21)	0.00 (0)	19.23 (05)	0.00 (0)	0.00 (0)	4.62
16.	I would want the drama activities to be integrated into my English language class regularly.	84.62 (22)	15.38 (4)	0.00 (0)	0.00 (0)	0.00 (0)	4.85

4.2.1: DATA INTERPRETATION OF REACTION SCALE

1. 80.77% of students strongly agreed, 15.38% agreed and 3.85% students were undecided towards statement no.1 i.e. “The drama activities to teach English were new.” The intensity index of 4.77 shows that their reaction was favourable.
2. 80.77% of students strongly agreed, and 19.23 % agreed to statement no.2 i.e. “I was keen to understand the new way of learning English.” The intensity index of 4.81 shows that their reaction was favourable.
3. 69.23% of students strongly agreed, 26.92% agreed and 3.85% were undecided towards statement no. 3 i.e. “The drama activities used for learning lessons made language

learning very interesting and joyful." The intensity index of 4.65 shows that their reaction was favourable.

4. 80.77% of students strongly agreed, 15.38% agreed and 3.85 were undecided with statement no. 4 i.e. "The various drama activities used were different from each other." The intensity index of 4.77 shows that their reaction was favourable.
5. 84.62% of students strongly agreed and 15.38 % agreed with statement no. 5 i.e. "I was interested in participating in the drama activities." The intensity index of 4.88 shows that their reaction was favourable.
6. 88.46% of students strongly agreed and 11.54% agreed with the statement no. 6 i.e. "The drama activities were interesting and joyful." The intensity index of 4.88 shows that their reaction was favourable.
7. 76.92 % of students strongly agreed and 23.08% agree with statement no. 7 i.e. "The drama activities helped me to understand the subject effectively." The intensity index of 4.77 shows that their reaction was favourable.
8. 3.85 % of students were undecided and 11.54 disagreed 84.62% strongly disagreed with statement no. 8 i.e. "The drama activities for listening were not interesting." The intensity index of 4.80 shows that their reaction was favourable.
9. 3.85 % of students were undecided and 7.69 % disagreed and 88.46 strongly disagreed with statement no. 9 i.e. "The drama activities for speaking were not interesting." The intensity index of 4.84 shows that their reaction was favourable.
10. 38.46% of students strongly agreed, 19.23% agreed and 42.31% disagreed with statement no. 10 i.e. "I always felt that it was a usual regular class only with some drama activities." The intensity index of 3.54 shows that their reaction was favourable.
11. 84.62% of students strongly agreed, and 15.38% agreed with statement no. 11 i.e. "The syllabus of English was completed on time even while teaching with the drama activities." The intensity index of 4.85 shows that their reaction was favourable.
12. 69.23 % of students strongly agreed, 19.23 % agreed and 11.24 were undecided towards statement no.12 i.e. "The classroom management was effective even with the participation of the students in drama activities." The intensity index of 4.58 shows that their reaction was favourable.
13. 19.23 % of students were undecided, 26.92 % disagreed and 53.85 strongly disagreed with the statement no. 13 i.e. " I was interested in participating in only few drama activities done in the class." The intensity index of 4.34 shows that their reaction was favourable.

14. 57.69% of students strongly agreed, 23.08 agreed and 19.23 disagreed with statement no.14 “The drama activities were effectively linked with the chapters.” The intensity index of 4.19 shows that their reaction was favourable.
15. 80.77% of students strongly agreed, 19.23 % were undecided towards the statement no. 15 i.e. “The drama activities helped to enhance my listening and speaking skills in English.” The intensity index of 4.62 shows that their reaction was favourable.
16. 84.62% of students strongly agreed, 15.38 agreed with the statement no. 16 “I would want the drama activities to be integrated into my English language class regularly.” The intensity index of 4.85 shows that their reaction was favourable.

The average intensity index score was **4.63.** Therefore, it can be that the students agreed with the above statements.