

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

4.1 INTRODUCTION

The present chapter is devoted to the analysis and interpretation of the data collected. They have been placed before the objectives with which the research had been taken. Thus, the objectives and the outcomes of the research have been verified and the hypothesis has been tested.

The present chapter deals with the scores of Pre-test and Post-test, tabulation of the data, data analysis and interpretation.

In this study the calculations are based on the scores of Pre-test and Post-test. These scores are analyzed and frequency distribution is prepared on the same. In addition to that for every frequency distribution Mean and Standard Deviation are calculated.

4.2 DATA ANALYSIS AND INTERPRETATION

4.2.1 To test the hypothesis

There will be no significant difference in Mean achievement scores of Pre-test and Post-test. The collected data were analyzed quantitatively using 't' test.

Table 4.2.1 Mean, SD, SE_m, df and 't' value.

	No. of Students	Mean	SD	SE_m	r	df	t-value
Pre-test	32	6.56	6.29	1.11	0.89	31	10.74
Post-test	32	12.25	6.33	1.12			

The computed t value 10.74 is greater than that of the table t value 2.72 at 0.01 level & 2.03 at 0.05 levels for 31 degree of freedom.

Therefore, the null hypothesis that there will be no significant difference between the mean achievement scores of Pre-test & Post-test is rejected. It means there is significant difference between the mean achievement scores of Pre-test & Post-test, which shows effectiveness of number games to teach arithmetic at primary level.

So, the treatment is found to be effective as evident through analyzed data.

4.3 ANALYSIS OF REACTION SCALE

The Researcher has constructed 5 point Reaction Scale keeping in mind different dimension of number games.

Statement 1: The class was interesting.

Table 4.3.1: Analysis of responses of students on statement

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	χ^2 and level of significance
fo	32 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	128 0.01, 0.05
fe	6.4	6.4	6.4	6.4	6.4	

Interpretation:

100% of the students said that the class was interesting.

The computed χ^2 value 128 is greater than that of the table χ^2 value 15.27 at 0.01 level and 9.48 at 0.05 levels for 4 degree of freedom.

Therefore, the Null Hypothesis is rejected. That means there is significant difference between the observed frequencies and expected frequencies.

Statement 2: Students enjoyed number games.

Table 4.3.2: Analysis of responses of students on statement

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	χ^2 and level of significance
fo	31 (96.88)	0 (0%)	1 (3.12%)	0 (0%)	0 (0%)	118.31 0.01, 0.05
fe	6.4	6.4	6.4	6.4	6.4	

Interpretation:

96.88% of the students enjoyed number games.

The computed χ^2 value 118.31 is greater than that of the table χ^2 value 15.27 at 0.01 level and 9.48 at 0.05 levels for 4 degree of freedom.

Therefore, the Null Hypothesis is rejected. That means there is significant difference between the observed frequencies and expected frequencies.

Statement 3: Students were able to concentrate during the program.

Table 4.3.3: Analysis of responses of students on statement

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	χ^2 and level of significance
fo	29 (90.63%)	2 (6.25%)	1 (3.12%)	0 (0%)	0 (0%)	100.19 0.01, 0.05
fe	6.4	6.4	6.4	6.4	6.4	

Interpretation:

90.63% of the students concentrate during the program. Thus the researcher found that number games were effective in the learning process.

The computed χ^2 value 100.19 is greater than that of the table χ^2 value 15.27 at 0.01 level and 9.48 at 0.05 levels for 4 degree of freedom.

Therefore, the Null Hypothesis is rejected. That means there is significant difference between the observed frequencies and expected frequencies.

Statement 4: This program helped students in increasing confidence in mathematics.

Table 4.3.4: Analysis of responses of students on statement

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	χ^2 and level of significance
fo	31 (96.88%)	1 (3.12%)	0 (0%)	0 (0%)	0 (0%)	118.31 0.01, 0.05
fe	6.4	6.4	6.4	6.4	6.4	

Interpretation:

96.88% of the students said that this program helped students in increasing confidence in mathematics.

The computed χ^2 value 118.31 is greater than that of the table χ^2 value 15.27 at 0.01 level and 9.48 at 0.05 levels for 4 degree of freedom.

Therefore, the Null Hypothesis is rejected. That means there is significant difference between the observed frequencies and expected frequencies.

Statement 5: Learning through number games was joyful experience.

Table 4.3.5: Analysis of responses of students on statement

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	χ^2 and level of significance
fo	31 (96.88%)	0 (0%)	0 (0%)	1 (3.12%)	0 (0%)	118.31 0.01, 0.05
fe	6.4	6.4	6.4	6.4	6.4	

Interpretation:

96.88% of the students said that Learning through number games was joyful experience.

The computed χ^2 value 118.31 is greater than that of the table χ^2 value 15.27 at 0.01 level and 9.48 at 0.05 levels for 4 degree of freedom.

Therefore, the Null Hypothesis is rejected. That means there is significant difference between the observed frequencies and expected frequencies.

Statement 6: The task given by the teacher was appropriate.

Table 4.3.6: Analysis of responses of students on statement

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	χ^2 and level of significance
fo	26 (81.25%)	4 (12.5%)	2 (6.25%)	0 (0%)	0 (0%)	76.75 0.01, 0.05
fe	6.4	6.4	6.4	6.4	6.4	

Interpretation:

81.25% of the students said that the task given by the teacher was appropriate.

The computed χ^2 value 76.75 is greater than that of the table χ^2 value 15.27 at 0.01 level and 9.48 at 0.05 levels for 4 degree of freedom.

Therefore, the Null Hypothesis is rejected. That means there is significant difference between the observed frequencies and expected frequencies.

Statement 7: The method adopted by the teacher improved my calculation skill in arithmetic.

Table 4.3.7: Analysis of responses of students on statement

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	χ^2 and level of significance
fo	29 (90.63%)	2 (6.25%)	0 (0%)	0 (0%)	1 (3.12%)	100.19 0.01, 0.05
fe	6.4	6.4	6.4	6.4	6.4	

Interpretation:

90.63% of the students said that the method adopted by the teacher is improve my calculation skill in arithmetic.

The computed χ^2 value 100.19 is greater than that of the table χ^2 value 15.27 at 0.01 level and 9.48 at 0.05 levels for 4 degree of freedom.

Therefore, the Null Hypothesis is rejected. That means there is significant difference between the observed frequencies and expected frequencies.

Statement 8: I enjoyed number games to learn arithmetic.

Table 4.3.8: Analysis of responses of students on statement

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly is agree	χ^2 and level of significance
fo	28 (87.50%)	2 (6.25%)	2 (6.25%)	0 (0%)	0 (0%)	91.75 0.01, 0.05
fe	6.4	6.4	6.4	6.4	6.4	

Interpretation:

87.50% of the students said that we enjoyed number games to learn arithmetic.

The computed χ^2 value 91.75 is greater than that of the table χ^2 value 15.27 at 0.01 level and 9.48 at 0.05 levels for 4 degree of freedom.

Therefore, the Null Hypothesis is rejected. That means there is significant difference between the observed frequencies and expected frequencies.

4.4 CONCLUSION

In this chapter, the researcher included data analysis and interpretation of the results. It can be concluded that to teach arithmetic at primary level number games are more effective rather than traditional way of learning. There is positive impact on the students. Their achievement scores improved significantly.

The next chapter is about findings, suggestions, and interpretation of the results.