

CHAPTER 4

Data Analysis and Interpretation

- ▮ 4.1 Data Collection
- ▮ 4.2 Analysis and Testing of Hypothesis

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

DATA COLLECTION

“There are different ways and techniques in which the data can be treated and analyzed. But one thing which is common to all of them is they are analyzed statistically.”

-A. L. Edwards. (1971)

To test the effectiveness of spelling rules at high school level, a population of 60 students from Class 9th was selected from Govt. Higher Secondary School, Block Bhopal ; District Bhopal (M.P.). For the purpose of research study, the design of experimental matter was employed through pre-test and post-test.

The data collected was analyzed and interpreted for the hypothesis formulated in the present study. Since it was an experimental study; data was analyzed for the controlled and experimental group separately for pre-test and post-test respectively. The analysis of data involves *mean, standard deviation* and *t-test* with respect to contextual hypothesis.

ANALYSIS AND TESTING OF HYPOTHESIS

HYPOTHESIS H01:

“There will be no significant difference between the pre and post

test for spelling efficiency of experimental group of class IX.”

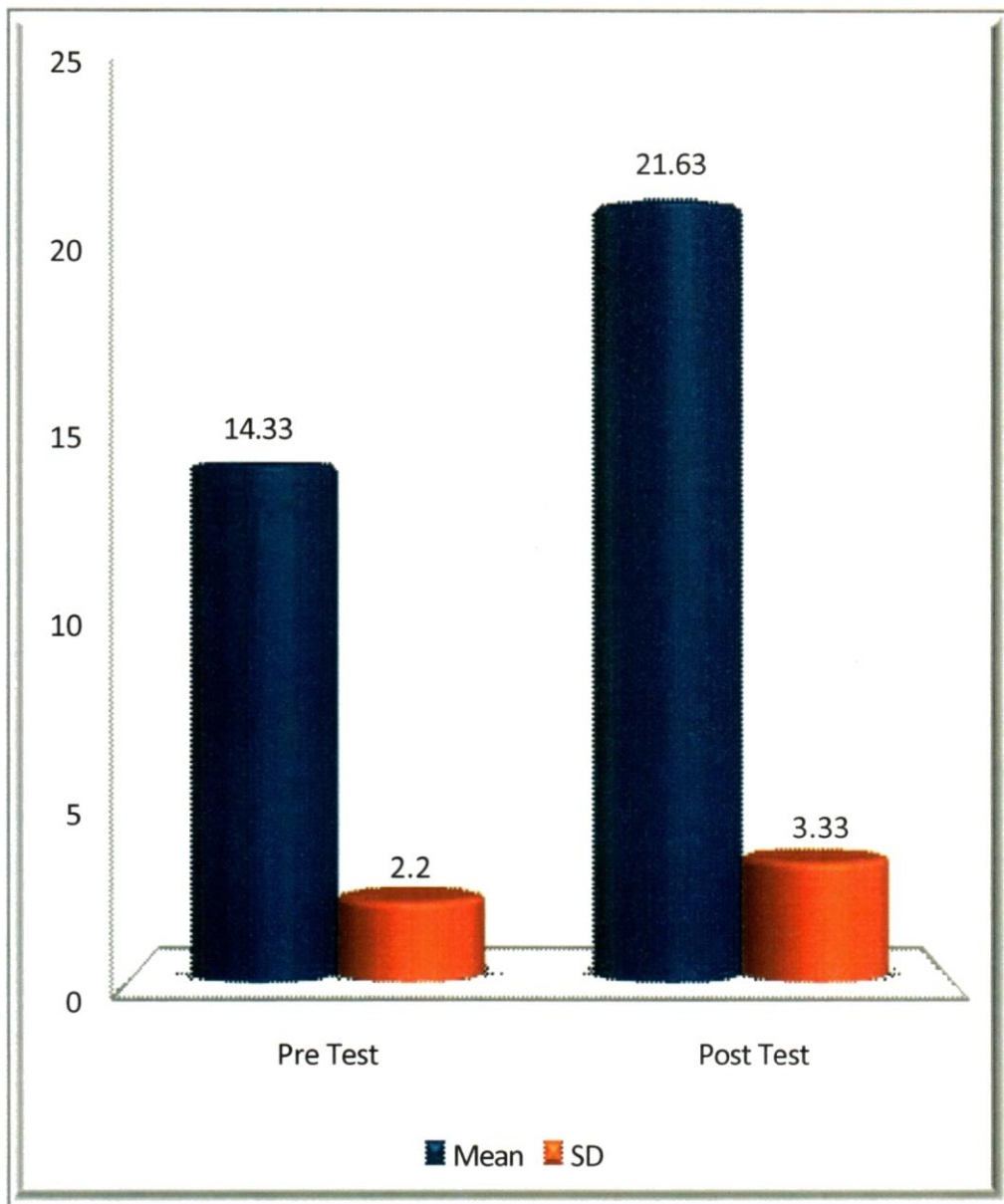
The formation of above hypothesis is the basis of students' spelling efficiency which is almost the same every time in experimental group. To analyze the same self made tools were administered through a pre-test and post-test. By doing so the mean scores of both the tests along with standard deviation and t-value could be easily analyzed.

TABLE 4.1

S. No.	Test	No. of students (N)	Mean (M)	Standard Deviation (SD)	Degree of freedom (df)	T-value Statistical	Significance Level at 0.01	Result
1	Pre-test	30	14.33	2.2	29	15.53	2.46	Hypothesis Rejected
2	Post-test	30	21.63	3.33				

It is clear from the table that the table value of 't' for degree of freedom of students of experimental group is 2.46 at confidence level of 0.01. Statistical t-value of the data is 15.53 which is much more than the table value at significance level of 0.01. It means there will be significant difference between the pre and post test for spelling efficiency of experimental group of class IX. Thus it is concluded that there is improvement in spelling efficiency of students of experimental group.

Graph 4.1 Mean and Standard Deviation of pre and post test for spelling efficiency of experimental group.



HYPOTHESIS H02:

“There will be no significant difference between the pre and post test for spelling efficiency of controlled group of class IX.”

The formation of above hypothesis is the basis of students’ spelling efficiency which is almost the same every time in controlled group. To analyze the same self made tools were administered through a pre-test and post-test. By doing so the mean scores of both the tests along with standard deviation and t-value could be easily analyzed.

Table 4.2

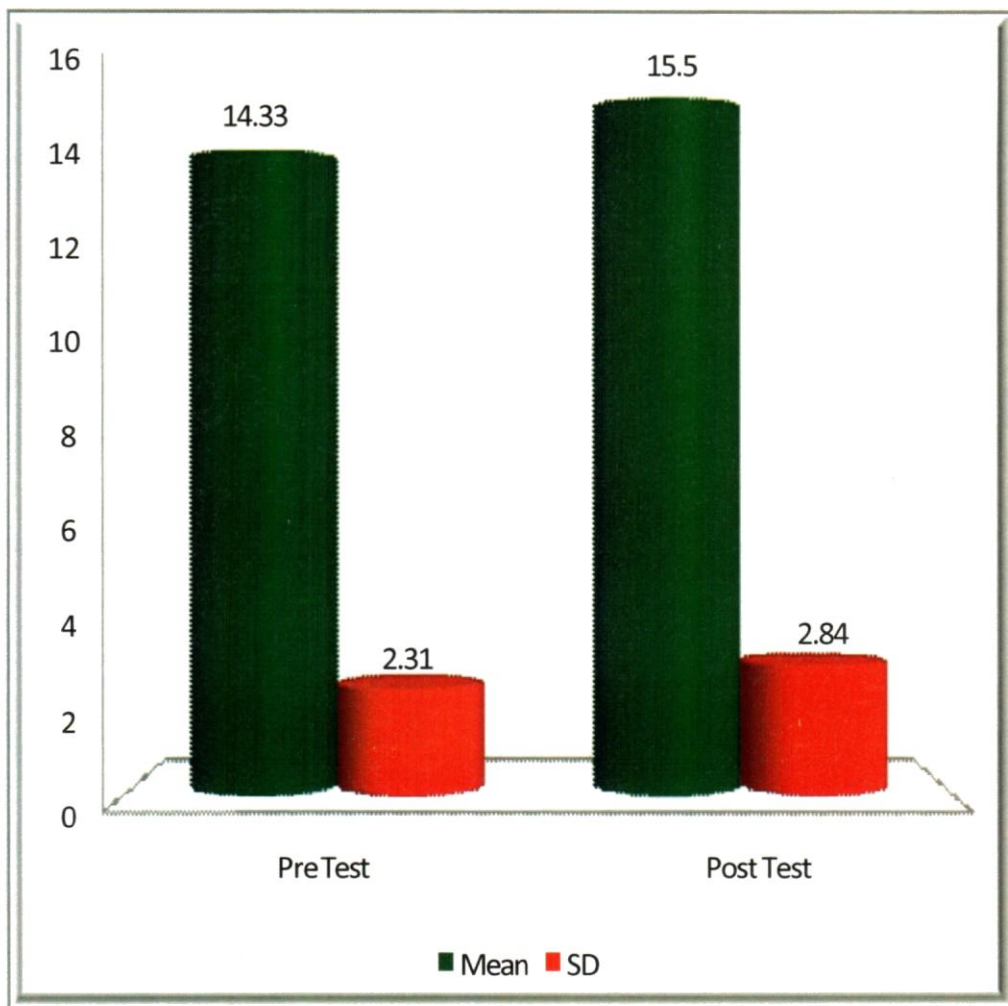
S. No.	Test	No. of students (N)	Mean (M)	Standard Deviation (SD)	Degree of freedom (df)	T-value Statistical	Significance Level at 0.01	Result
1	Pre-test	30	14.43	2.31	29	4.46	2.46	Hypothesis Rejected
2	Post-test	30	15.50	2.84				

It is clear from the table that the table value of ‘t’ for degree of freedom of students of controlled group is 2.46 at confidence level of 0.01. Statistical t-value of the data is 4.46 which is more than the table value at significance level of 0.01. It means there will be significant difference between the pre and post test for spelling efficiency of controlled group of class IX. Thus it is concluded that there is improvement in spelling efficiency of students after employing traditional teaching.

Hence the null hypothesis, ***“There will be no significant difference between the pre and post test for spelling efficiency of controlled group of class IX”*** is rejected.

Graph 4.2

Mean and Standard Deviation of pre and post test for spelling efficiency of controlled group



HYPOTHESIS H03:

“There will be no significant difference in the pre-test between spelling efficiency of experimental and controlled group.”

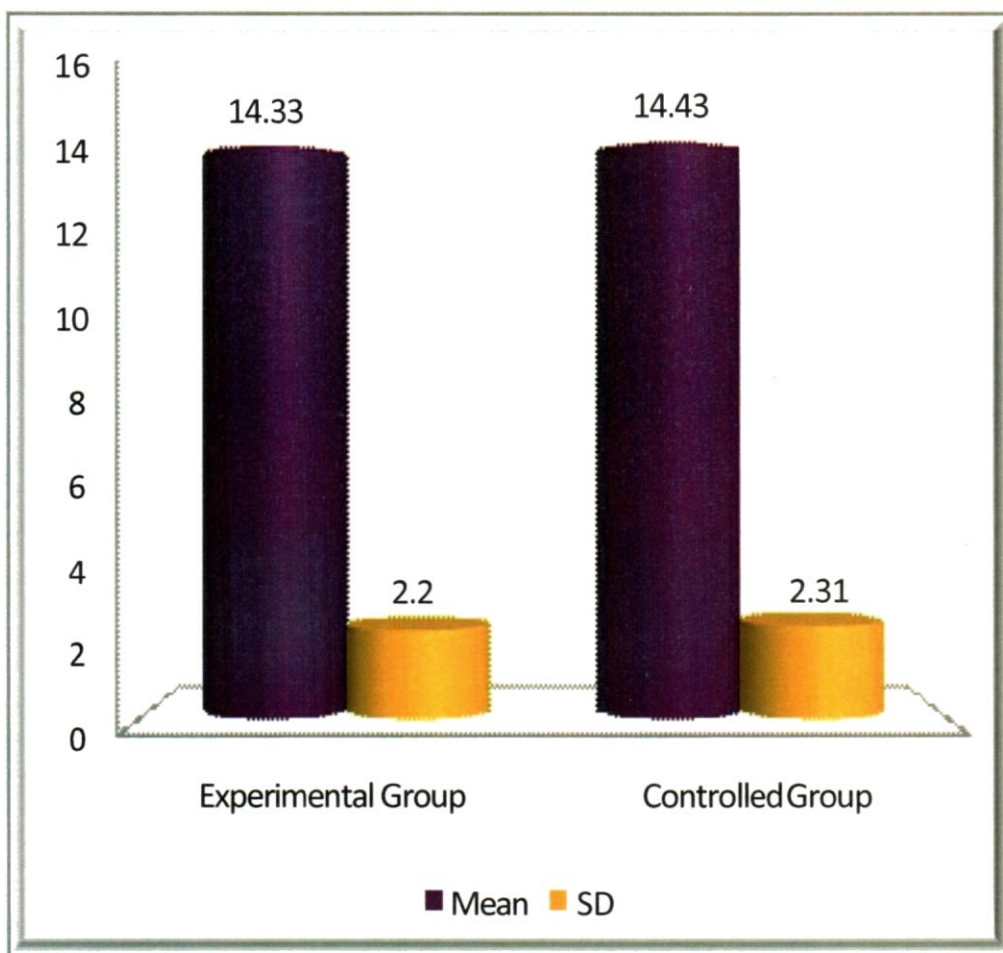
The formation of above hypothesis is the basis of students spelling efficiency which is almost the same every time in all students .To analyze the same self made tool was administered through a pre-test in both the experimental and controlled group. By doing so the mean scores of both the groups along with standard deviation and t-value could be easily analyzed.

Table 4.3

S. No.	Group	No. of students (N)	Mean (M)	Standard Deviation (SD)	Degree of freedom (df)	T-value Statistical	Significance Level at 0.01	Result
1	Experimental	30	14.33	2.2	58	0.17	2.39	Hypothesis Accepted
2	Controlled	30	14.43	2.31				

It is clear from the table that the table value of ‘t’ for degree of freedom of pre-test to check the spelling efficiency of both experimental and controlled group is 2.39 at confidence level of 0.01. Statistical t-value of the data is 0.17 which is less than the table value at significance level of 0.01. It means there will be no significant difference between the pre-test for spelling efficiency of both experimental and controlled group of class IX. Thus it is concluded that there is the same learning outcome of spelling rules through traditional teaching.

Hence the null hypothesis, ***“There will be no significant difference in the pre-test between spelling efficiency of experimental and controlled group.”*** is accepted.



Graph 4.3

Mean and Standard Deviation of the pre-test for spelling efficiency of experimental and controlled group.

HYPOTHESIS H04:

“There will be no significant difference in the post-test between the spelling efficiency of experimental and controlled group.”

The formation of above hypothesis is the basis of students' spelling efficiency which is almost the same every time in all students even after giving treatment. To analyze the same self made tool was administered through a post-test in both the experimental and controlled group. By doing so the mean scores of both the groups along with standard deviation and t-value could be easily analyzed.

Table 4.4

S. No.	Group	No. of students (N)	Mean (M)	Standard Deviation (SD)	Degree of freedom (df)	T-value Statistical	Significance Level at 0.01	Result
1	Experimental	30	21.63	3.33	58	7.68	2.39	Hypothesis Rejected
2	Controlled	30	15.5	2.84				

It is clear from the table that the table value of 't' for degree of freedom of post-test to check the spelling efficiency of both experimental and controlled group is 2.39 at confidence level of 0.01. Statistical t-value of the data is 7.68 which is much more than the table value at significance level of 0.01. It means there will be a significant difference between the post-test for spelling efficiency between both experimental and controlled group of class IX. Thus it is concluded that there is the same learning outcome of spelling rules through traditional teaching in controlled group where as learning outcome is much better after teaching the spelling rules to the experimental group.

Hence the null hypothesis, “*There will be no significant difference in the post-test between spelling efficiency of experimental and controlled group.*” is rejected.

Graph 4.4

Mean and Standard Deviation of the post-test for spelling efficiency of experimental and controlled group.

