CHAPTER IV

ANALYSIS AND INTERPRETATION OF DATA

ANALYSIS AND INTERPRETATION

Data analysis and interpretation is the process of assigning meaning to the collected information and determining the conclusions, significance, and implications of the findings. The steps involved in data analysis are a function of the type of information collected, however, returning to the purpose of the assessment and the assessment questions will provide a structure for the organization of the data and a focus for the analysis.

The total number of the students in the class was 11. There were two tests taken. The test taken after teaching students without e-content, shall be henceforth addressed as '***pre-test***'. The test conducted after the learners or students are taught using e-content, shall be addressed as '***post-test***'. Let us now draw an objective and a null hypothesis.

Objective: To study the effectiveness of e-content for teaching English to class-7 in terms of achievement in English.

H0: There is no difference between the pre-test and the Post-test achievement scores of the students.

Table. 1: Mean and standard deviation of raw scores

Category	**No. Of students**	**Means**	**Standard Deviation**
Pre-test	11	11.36	5.12
Post-test	11	17.81	3.4

Table. 2. Frequency Distribution of pre-test scores

Class Intervals	**F**
3-5	2
6-8	1
9-11	3
12-14	1
15-17	2
18-20	2
	T=11

From the above tables we infer that all students were ***average*** in terms of their proficiency in English.

Table. 3. Frequency Distribution of Post-test scores

Class Interval	**F**
9-11	1
12-14	1
15-17	0
18-20	9
	T=11

By comparing tables 2 and 3 we can say that after treatment, students' academic achievement was high. Let us prove it further, using T-test.

The paired t test provides an hypothesis test of the difference between population means for a pair of random samples whose differences are approximately normally distributed. Please note that a pair of samples, each of which are not from normal a distribution, often yields differences that are normally distributed.

$$t_{calc} = \frac{\bar{d}}{s_d / \sqrt{n}}$$

The test statistic is calculated as:

- Where d bar is the mean difference,
- s^2 is the sample variance,
- n is the sample size and
- t is a Student t quantile with n-1 degrees of freedom.

$$t = \frac{(\Sigma D)/N}{\sqrt{\frac{\Sigma D^2 - \left(\frac{(\Sigma D)^2}{N}\right)}{(N-1)(N)}}}$$

ΣD: Sum of the differences between pre-test and the Post-test

ΣD2: Sum of the squared differences

(ΣD)2: Sum of the differences squared.

The above equation gives us the value of t as 3.126. The value of t is 3.12. The value of p is 0.01. Therefore the result is significant as $p<0.05$

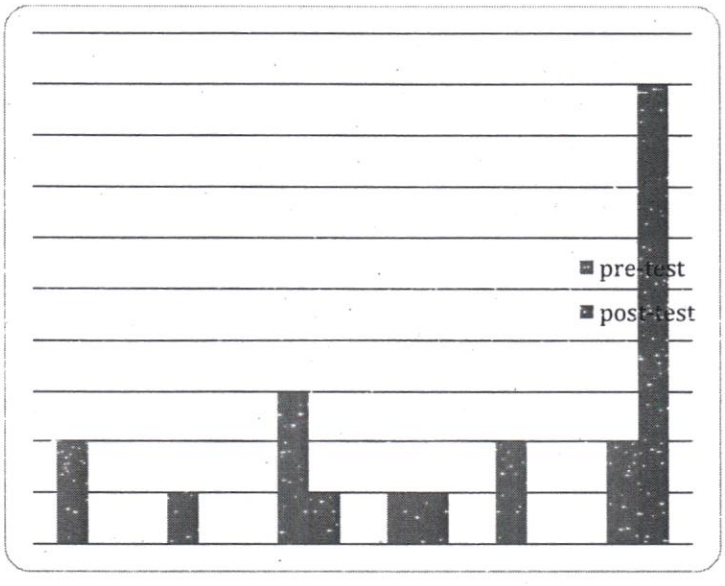
Here, 0.05 is the alpha level.

Since the result is significant, we can reject our null hypothesis that there is no significant difference between pre-test and the Post-test achievement scores of the students.

Comparison of pre-test and post-test scores

Class Interval	***Pre-test F***	***Post-test F***
3-5	2	0
6-8	1	0
9-11	3	1
12-14	1	1
15-17	2	0
18-20	2	9
	T=11	**T=11**

Following is the Graph showing the comparison between pre-test and post-test scores:



From the above graph, we see the significant improvement in scores in the post-test. From this we can say that e-content for teaching English to class 7 was not only effective, but also efficient. It was also observed that there was a significant drop in the number of fails from the pre-test to post-test scores achieved by the students and also a significant rise in the toppers in the test.

Limitations in the study:

Due to Covid 19 pandemic and its risks, Covid protocols were followed due to which number of students were significantly low and duration of the study lasted only a short duration.

Internet connection was another limitation. It was not available at a constant range. Due to fluctuations, frictions in learning was observed.