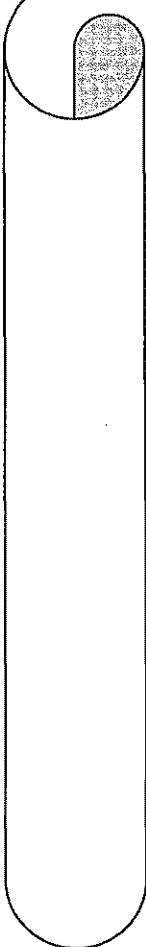# CHAPTER – 4

ANALYSIS AND INTERPRETATION OF DATA

CHAPTER 4

Analysis and interpretation of data

4.1   Introduction

After discussing the uses of multimedia and taking a brief review of researches conducted in this area to support the rationale of the present study, detailed plan of the study was presented in the third chapter.

The data thus collected was subjected to appropriate statistical procedure to test the hypothesis with which this study was initiated. The Details of the statistical technique employed for analysis of the data, results obtained through this analysis and the decisions regarding the rejection or non rejection of hypothesis are presented in this chapter.

Statistical Techniques are used for organizing, analyzing and interpreting numerical data . Statistics is a basic tool of measurement and evaluation, when Research has quantifiable data .Statistical methods goes to the fundamental purposes of description and analysis. By applying statistics we can analyze and interpret the data and can draw conclusions. If the collective data are systematically arranged and analyzed through appropriate scientific and statistical technique , the results obtained are scientific and correct .

Interpretation of data refers to that important part of the investigation, which is associated with the drawing of the inference from the collected facts after an analytical study . It is the interpretation that makes it possible for us to utilize collected data in various fields. According to the hypothesis of the study the data collected was

analyzed on the basis of scores of different tests conducted on the sample .The statistical method serves the fundamental purpose of description and analysis , and their proper application involves answering the following question .

1. What facts need to be gathered to provide the information necessary to test the hypothesis .

2. How are these data to be gathered , organized and analyzed ?

3. What assumptions underlie the statistical methodology to be employed ?

4. What conclusions can be validly drawn from the analysis of the data ?

4.2 Analysis of hypothesis

"Analysis is the ordering-the breaking down of data into constituent parts in order to obtain answer to research questions"

-- F .N. Kerlinger(1964)

There are five hypothesis in the study .All these hypothesis are tested and the results are interpreted as per the problem under investigation .There are three hypothesis pertaining to influence of teaching method. The results on verification of hypothesis are presented in the following pages.

4.2.1 Results pertaining to influence of teaching method

Hypothesis 1

There will be no significant difference in the mean achievement score between the students studying through conventional approach and multimedia based teaching approach.

This hypothesis is tested using the "t" test. The mean, standard deviation and t value are calculated and the result is shown in table 4.1.

Table 4.1

Analysis of the mean Achievement score of the students

Category	N	Mean(m)	Standard deviation	t	df
Multimedia approach (experimental group)	22	22.45	4.974	- 0.507*	43
Traditional approach (control group)	23	23.22	5.116		

* t-value at 0.05 level is not significant.

The obtained t – value is – 0.507 for df 43 .Therefore it is not significant at 0.1 level of significance ,thus the null hypothesis is accepted that there is no significant difference in the mean achievement score between the students studying through conventional approach and multimedia based teaching approach. So, either teaching through multimedia based teaching approach or traditional approach does not make any difference in the achievement Hence it can be concluded that there is no impact of either of the methods on the achievement of the students and achievement does not depend on method of instruction.

This conclusion is similar to the findings of the study done by William N. Chernish, A.Gnes L. Defranco, James R. Linder and Kim E.Dooley (2002.There also the delivery method did not contribute to any difference in the learners' achievement level.

Hypothesis 2

There will be no significant difference in the mean attitude score between the students studying through conventional approach and multimedia based teaching approach.

This hypothesis is tested using the "t" test. The mean, standard deviation and t value are calculated and the result is shown in table 4.2

Table 4.2

Analysis of the mean Attitude score of the students

Category	N	Mean(m)	Standard deviation	t	df
Multimedia approach (experimental group)	22	47.32	6.506	- 0.259*	43
Traditional approach (control group)	23	47.83	6.631		

- t value is not significant at 0.05 level.

t value -0.259, df 43 is not significant at 0.05 level of significance., thus the null hypothesis is accepted that there is no significant difference in the mean attitude score between the students studying through conventional approach and multimedia based teaching approach. .so, either teaching through multimedia based teaching approach or traditional approach does not bring any difference in the Attitude. Hence it can be concluded that there is no impact of either of the methods on the Attitude of the students and Attitude does not depend on the method of instruction.

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4.2.2 Study of the relative Retention level

Hypothesis 3

The third hypothesis of the study states that there will be no significant difference in the relative retention of learning through the conventional and multimedia based approach. This hypothesis is tested using the "t" test. The mean , standard deviation and t value are calculated and the result is shown in table 4.3

Table 4.3
Analysis of the mean Achievement score of the Retention Test

Category	N	Mean (m)	Standard deviation	t	df
Multimedia approach (experimental group)	22	22.18	4.905	- 0.129*	43
Traditional approach (control group)	23	22.35	3.688		

*t value is not significant at 0.05 level.

The t value -0.129, df 43 is not significant at 0.05 level of significance ,thus the null hypothesis is accepted that there is no significant difference in mean achievement scores of the Retention test between the students of External and Internal Locus of control, studying through conventional approach and multimedia based approach. Hence it can be concluded that either of the method has no impact on the academic retention of the students and Retention does not depend on the method of instruction.

4.2.3 Results pertaining to Locus of control

Hypothesis - 4

There is no significant difference in mean achievement score between the students of External and Internal Locus of control.

This hypothesis is tested using the "t" test. The mean ,standard deviation and t value are calculated and the result is shown in table 4.4

Table 4.4

Analysis of mean Achievement score between students of External and Internal Locus of control

Category Locus of control	N	Mean(m)	Standard deviation	t	df
Internal locus of control	22	21.95	5.610	- 1.172*	43
External locus of control	23	23.70	4.300		

* t value is not significant at 0.05 level.

The t – value -1.172,df 43 is not significant at 0.05 level of significance ,thus the null hypothesis is accepted that there is no significant difference in mean achievement score between the students of External and Internal Locus of control. Hence it can be concluded that Locus of control is not a factor affecting the Achievement of the students.

Hypothesis 5

There is no significant difference in mean attitude score between the students of internal and external locus of control.

This hypothesis is tested using the "t" test. The mean, standard deviation and t value are calculated and the result is shown in table 4.5.

Table 4.5

Analysis of mean Attitude score between students of External and Internal Locus of control

Category Locus of control	N	Mean(m)	Standard deviation	t	df
Internal locus of control	22	47.36	7.681	- 0.214*	43
External locus of control	23	47.78	5.300		

* t value is not significant at 0.05 level

The t – value -0.214 ,df 43 is not significant at 0.05 level of significance ,thus the null hypothesis is accepted that there is no significant difference in mean attitude score between the students of External and internal Locus of control. Hence it can be concluded that Locus of control is not a factor affecting the Attitude of the students