CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

CHAPTER – IV

ANALYSIS OF DATA AND INTERPRETATION OF THE RESULTS

4.0.0 INTRODUCTION

The need and justification, objectives along with the hypotheses of the study are presented under different headings in the chapter- I. The reviews of the related literature are presented in the chapter – II. The methodology, sample, design, tools and techniques, procedure of data collection and the statistical techniques used for the analysis of data are presented in chapter – III. In this chapter, objective-wise analysis of the data are presented, below, under separate headings.

4.1.0 EFFECTIVENESS OF ALTERNATIVE TECHNIQUES OF ASSESSMENT

The first objective of the investigation was to study the effectiveness of the material developed for the alternative techniques of evaluation in terms of students' achievement in English and their participation in the classroom. As this objective has two components, therefore, the result and the analysis of each component of this objective is presented in the caption 4.1.1 and 4.1.2.

4.1.1 Effectiveness of the Alternative Techniques of Evaluation in terms of Students' Achievement in English

In order to study the above mentioned objective, an achievement test was developed by the investigator. The detail regarding the testing procedure is presented in chapter III under the ...... procedure of data collection 3.6.0. The treatment was given for the 10 days. As evaluation is an integral part of the learning

process, so, different techniques of alternative evaluation was incorporated in the process. As per the individual score of the learner, the data were analysed with the help of mean, SD, range, variance and the percentiles. The results are presented in the table – 4.1.

Table-4.1: Mean, SD, Range, Variance. and Percentiles of Achievement in English

N	35
Mean	64.03
SD	14.09
Range	48
Variance	198.50
Percentiles	
10	49.00
20	52.20
30	54.80
40	57.00
50	59.00
60	64.40
70	69.40
80	76.80
90	89.40

Table 4.1 indicates that the material was effective in terms of the achievement in English. The mean score is 64.03. 10% students scores 49% marks, where as 50% students scored 59% marks. The task indicates that 20% students scored 76% marks. 10% percents scored nearly, 90% marks. This kind of result is not experienced in the normal teaching. Therefore it can be said that the alternative technique are effective items of students achievement in English.
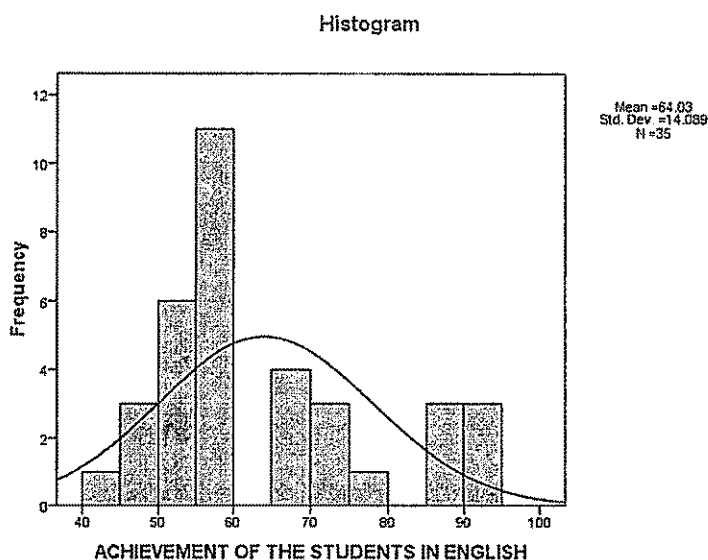
Histogram

Fig. 4.1: Students' Achievement in English

Finding: The alternative techniques of evaluation was effective in terms of the students' achievement in English

b. Students Participation in the Classroom

It was observed during the classes that almost all the students participated in the classroom activities. Therefore, it can be said that the material was effective in terms of the students' participation in the classroom.

Finding: The material was effective in terms of the students' participation in the classroom.

4.2.0 COMPARISON OF ACHIEVEMENT IN ENGLISH OF THE STUDENTS OF EXPERIMENTAL AND CONTROL GROUP

Second objective of the present investigation was to compare the achievement in English of the students taught through the ICT-based alternative assessment techniques and the students taught through the traditional method. Ten days treatment through the ICT-based alternative assessment techniques was provided to the

experimental group where as the control group was taught through the traditional method of teaching. An achievement test was developed by the investigator to measure the achievement in English. It was administered to the students of both the groups after ten days of treatment. The data related to the achievement in English were analysed with the help of One-way ANOVA. The results are presented in table 4.2.

Table- 4.2: Summary of 2 X 2 ANOVA for Achievement in English of Experimental and Control Group

Sources of Variance	Degree of Freedom	Sum of Squares	Mean Sum of Square	F-Values
Among	1	10224.51	10224.51	93.76**
Within	68	7415.25	109.048	
Total	69	17639.76	:	

** Significant at 0.01 level

Table - 4.3: Mean and S.D. for Achievement in English of Experimental and Control Group

Groups	N	Mean	SD
Experimental	35	64.03	14.09
Control	35	39.86	4.43
Total	70	51.94	15.99

Table 4.2 indicates that the F-value for achievement in English is 93.76, with df equal to 1/69, is significant at 0.01 level. Therefore, the null hypothesis, namely, "there is no significant difference in mean achievement score of the students taught through the ICT-based alternative assessment techniques and the students taught through the traditional method", is rejected.

Further, table-4.3, indicates that the mean of the experimental and the control group is 64.03 and 39.86, respectively. The table

4.3, also, shows that the SD of the experimental and the control group is 14.09 and 4.43, respectively. The SD shows that there was a large variation in the Experimental group.

Finding: There is a significant difference in mean achievement score of the students taught through the ICT-based alternative techniques and the students taught through the traditional method.

4.3.0 RELATIONSHIP BETWEEN THE INTELLIGENCE AND ACHIEVEMENT IN ENGLISH

The third objective of the study was to find the relationship between the achievement in English and Intelligence. For this purpose, only the scores of achievement in English and Intelligence of experimental group were taken into consideration. The control group scores were not taken for the analysis. Only, the relationship between the achievement in English and Intelligence of experimental group was studied. As the effectiveness of the ICT-based alternative techniques of evaluation of assessment was studied, so only the experimental group scores were taken into consideration for the analysis. The results are given in the table 4.4.

Table-4.4: Mean, SD and 'r'-value of achievement in English and Intelligence (N=35)

Measures	Achievement in English	Intelligence
Mean	64.03	54.77
SD	14.09	22.71
Correlation	0.88**	

** Significant at 0.01 level

Table 4.4 reveals that the 'r' value for achievement in English and intelligence is 0.88, which is significant at 0.01 level. There is a significant relationship between the intelligence and

achievement in English. Therefore, the null hypothesis, namely, "there is no significant relationship between the achievement in English and intelligence", is rejected. Therefore, it can be inferred that there was a significant positive relationship between the achievement in English and intelligence.

Finding: There was significant relationship between the achievement in English and intelligence.

4.4.0 RELATIONSHIP BETWEEN THE PERSONALITY AND ACHIEVEMENT IN ENGLISH

The fourth objective of the study was to find the relationship between the achievement in English and personality. For this purpose, only the scores of achievement in English and personality of experimental group were taken into consideration. The control group score were not taken for the analysis. Only, the relationship between the achievement in English and personality of experimental group was studied. As the effectiveness of the ICT-based alternative techniques of evaluation of assessment was studied, so, only, the experimental group scores were taken into consideration for the analysis. The results are presented in table 4.5

Table-4.5: Mean, SD and 'r'-Value of achievement in English and Personality (N=35)

Measures	Achievement in English	Intelligence
Mean	64.03	43.44
SD	14.09	17.44
Correlation	0.84**	

** Significant at 0.01 level

The table 4.5 indicates that the 'r' value for achievement in English and personality is 0.84, which is significant at 0.01 levels. Thus it can be said that there is a significant relationship

between the personality and achievement in English. Therefore, the null hypothesis, namely, "there is no significant relationship between achievement in English and personality", is rejected. Therefore, it can be inferred that there was significant positive relationship between the achievement in English and personality.

Finding: There was significant positive relationship between the achievement in English and personality.

4.5.0 EFFECT OF GENDER, INTELLIGENCE AND THEIR INTERACTION ON THE STUDENTS' ACHIEVEMENT IN ENGLISH

The fifth objective of the investigation was to study the effect of gender, intelligence and their interaction on the students' achievement in English. For this purpose, only the scores of achievement in English and intelligence of experimental group were taken into consideration. The control group score were not taken for the analysis. Only, the effect of gender, intelligence and their interaction on the achievement in English of the experimental group was studied. Gender has two levels, i.e., boys and girls. Intelligence has two levels, such as, high intelligence and average intelligence. Achievement in English was collected with the help of an achievement test developed by the investigator. The data related to intelligence were collected by administering the intelligence developed by (1999). Data were analysed with the help of the 2 X 2 Factorial Design ANOVA of unequal Cell Size. The results and its interpretations are given in table 4.6. The interpretations related to the gender, intelligence and their interactions are presented in caption 4.5.1, 4.5.2 and 4.5.3, separately.

Table- 4.6: Summary of 2 X 2 Factorial Design ANOVA for Achievement in English

Sources of Variance	Degree of Freedom	Sum of Squares	Mean Sum of Square	F-Value
Intelligence	1	2699.21	2699.21	24.51**
Gender	1	133.58	133.58	1.21
Intelligence X Gender	1	0.34	0.34	0.01
Error	31	3414.19	110.14	
Total	34	12805.63		

** *Significant at 0.01 level*

Table-.4.7: Mean and S.D. for Achievement in English High and Average Intelligent Boys and Girls

Gender	High Intelligent			Average Intelligent			Total		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Boys	10	76.50	16.88	09	57.89	6.59	19	67.68	15.89
Girls	05	72.20	3.42	11	54.00	6.77	16	59.69	0.47
Total	15	75.07	13.81	20	55.75	6.81	35	64.03	14.09

4.5.1 Effect of Gender on the Students' Achievement in English

Table 4.6 indicates that the F-value for gender (1.21) with df equal to 1/34 is not significant at 0.05 level. It signifies that there is no significant effect of gender on the students' achievement in English. Therefore, the null hypothesis, namely, "there is no significant effect of gender on the students' achievement in English", is not rejected. Thus, it can be inferred that achievement in English is independent of gender.

Further, table 4.7 shows that the mean scores of achievement in English of boys and girls are 67.68 and 59.69, respectively. The SD of the achievement in English of boys and girls are 15.89 and 0.47, respectively. It signifies that boys scored more than the

girls. But, the variations are more among the boys than the girls. It can be inferred that the girls scored consistently more than the boys. But the difference in mean between the boys and girls is not significant. So, it can be concluded that there is no significant effect of the gender on the students' achievement in English.

Finding: There is no significant effect of gender on achievement in English.

4.5.2 Effect of Intelligence on the Students' Achievement in English

Table 4.6 indicates that the F-value of achievement in English for intelligence is 24.51 with df equal to 1/34, which is significant at 0.01 level. It signifies that there is significant effect of intelligence on the students' achievement in English. Therefore, the null hypothesis, namely, "there is no significant effect of intelligence on the students' achievement in English", is rejected. Thus, it can be inferred that achievement in English is dependent on intelligence.

Further, table 4.7 also shows that the mean scores of achievement in English of high intelligent and average intelligent are 75.07 and 55.75, respectively. The SD of the achievement in English of high intelligent and average intelligent is 13.81 and 6.81, respectively. It shows that the variations are large among the high intelligent than the average intelligent. The difference in the mean achievement scores of high intelligent and average intelligent is significant. Thus, it can be said that there is a significant effect of intelligence on the achievement in English.

Finding: There is a significant effect of intelligence on the students' achievement in English.

4.5.3 Interactional Effect of Gender and Intelligence on the Students' Achievement in English

Table 4.6 indicates that the F-value of achievement in English for interaction of gender and intelligence is 0.01 with df equal to 1/34 is not significant at 0.05 level. It signifies that there is no significant interactional effect of gender and intelligence on the students' achievement in English. Therefore, the null hypothesis, namely, "there is no significant interactional effect of gender and intelligence on the students' achievement in English", is not rejected. Thus, it can be inferred that achievement in English is independent of the interactional effect of gender and intelligence.

Further, table 4.7 indicates that the mean scores of achievement in English of high intelligent boys and girls are 76.50 and 72.20, respectively. The SD of the achievement in English of high intelligent boys and girls are 16.88 and 3.42, respectively. The mean scores of achievement in English of average intelligent boys and girls are 57.89 and 54.00, respectively. The SD of the achievement in English of average intelligent boys and girls are 6.59 and 6.77, respectively. It shows that the variations are large among the high intelligent boys than the average intelligent boys. In case of girls, the variations are large among the average intelligent than the high intelligent. So far as levels of intelligent are concerned, the variations are large among the high intelligent boys than the high intelligent girls. But, there are little variations among the average intelligent boys and girls. Thus, it can be

inferred that there is no interactional effect of gender and intelligence on the students' achievement in English.
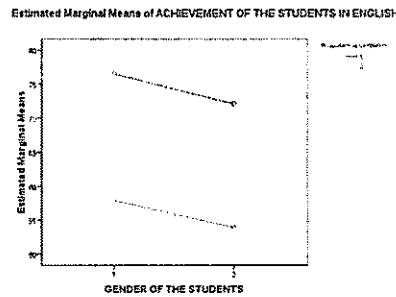

Estimated Marginal Means of ACHIEVEMENT OF THE STUDENTS IN ENGLISH

Fig. 4.2 : Interaction between Gender and Intelligence on achievement in English.
Gender: 1= Boys 2= Girls **Intelligence:** 1= High Intelligent
2= Average Intelligent

Finding: There is no significant interactional effect of gender and intelligence on the students' achievement in English.

4.6.0 EFFECT OF GENDER, PERSONALITY AND THEIR INTERACTION ON THE STUDENTS' ACHIEVEMENT IN ENGLISH

The sixth objective of the investigation was to study the effect of gender, personality and their interaction on the students' achievement in English. For this purpose, only the scores of achievement in English and intelligence of experimental group were taken into consideration. The control group score were not taken for the analysis. Only, the effect of gender, personality and their interaction on the achievement in English of the experimental group was studied. Gender has two levels, i.e., boys and girls. Personality has two levels, such as, extrovert and introvert intelligence. Achievement in English was collected with the help of an achievement test developed by the investigator. The data related to personality were collected with

the help of a standardized tool developed by (1999). Data were analysed with the help of the 2 X 2 Factorial Design ANOVA of unequal Cell Size. The results and its interpretations are given in table 4.6. The interpretations related to the gender, intelligence and their interactions are presented in caption 4.5.1, 4.5.2 and 4.5.3, separately.

Table- 4.8: Summary of 2 X 2 Factorial Design ANOVA for Achievement in English

Sources of Variance	Degree of Freedom	Sum of Squares	Mean Sum of Square	F-Value
Personality	1	2974.77	2974.77	29.99**
Gender	1	209.05	209.05	2.10
Intelligence X Gender	1	10.03	10.03	0.10
Error	31	3075.02	99.19	
Total	34	6268.87		

*** Significant at 0.01 level*

Table-.4.9: Mean and S.D. for Achievement in English of Extrovert and Introvert Boys and Girls

Gender	Extrovert			Introvert			Total		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Boys	9	78.44	16.67	10	58.00	6.21	19	67.68	15.89
Girls	5	72.20	3.42	11	54.00	6.77	16	59.69	10.47
Total	14	76.21	13.57	11	55.90	6.67	35	64.03	14.09

4.6.1 Effect of Gender on the Students' Achievement in English

The interpretation is given in caption 4.5.1.

4.6.2 Effect of Personality on the Students' Achievement in English

Table 4.8 indicates that the F-value of achievement in English for personality is 29.99 with df equal to 1/34, which is significant at 0.01 level. It signifies that there is a significant

effect of personality on the students' achievement in English. Therefore, the null hypothesis, namely, "there is no significant effect of personality on the students' achievement in English", is rejected. Thus, it can be inferred that achievement in English is dependent on personality.

Further, table 4.9, also, shows that the mean scores of achievement in English extrovert and introvert are 76.21 and 55.90, respectively. The SD of the achievement in English extrovert and average introvert is 13.57 and 6.67, respectively. It shows that the variations are large among the extrovert than the introvert. The difference in the mean achievement scores of extrovert and introvert is significant. Thus, it can be said that there is a significant effect of personality on the students' achievement in English.

Finding: There is a significant effect of personality on the students' achievement in English.

4.6.3 Interactional Effect of Gender and Personality on the Students' Achievement in English

Table 4.6 indicates that the F-value of achievement in English for interaction of gender and personality is 0.10 with df equal to 1/34 is not significant at 0.05 level. It signifies that there is no significant interactional effect of gender and personality on the students' achievement in English. Therefore, the null hypothesis, namely, "there is no significant interactional effect of gender and personality on the students' achievement in English", is not rejected. Thus, it can be inferred that achievement in English is independent of the interactional effect of gender and personality.

Further, table 4.9 indicates that the mean scores of achievement in English of extrovert boys and girls are 78.44 and 72.20, respectively. The SD of the achievement in English of Extrovert

boys and girls are 16.67 and 3.42, respectively. The mean scores of achievement in English of introvert boys and girls are 67.68 and 59.69, respectively. The SD of the achievement in English of introvert boys and girls are 6.21 and 6.77, respectively. It shows that the variations are large among the extrovert boys than the introvert boys. In case of girls, the variations are large among the introvert than the extrovert. So far as levels of personality are concerned, the variations are large among the extrovert boys than the extrovert girls. But, there are little variations among the introvert boys and girls. Thus, it can be concluded that there is no significant interactional effect of gender and personality on the students' achievement in English.

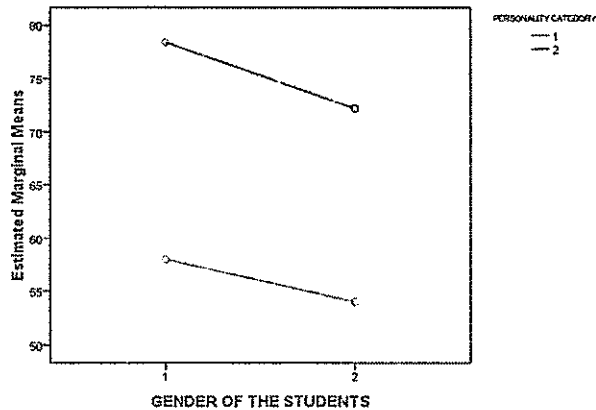Fig. 4.3: Interaction between Gender and Personality on Achievement in English

Gender: 1= Boys2= Girls   Personality: 1=   Extrovert
                                                           2= Introvert

Finding: There is no significant interactional effect of gender and personality on the students' achievement in English.