CHAPTER 4

DATA ANALYSIS

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4.1. INTRODUCTION

The present chapter deals with the analysis of data. According to the objectives and design of the study, the analysis of variance (ANOVA) 2 x 2 x 2 factorial design and the 't' test were used for analysis of data.

Analysis of variance is an extension of 't' test. By using 't' test the difference between two groups only can be studied at a time that means the effect of only one independent variable can be studied at a time. In analysis of variance more than two independent or dependent variable can be studied. It is useful in the sense that apart from main effects interaction effects also can be studied. The analysis of variance gives its results in the form of 'F' ratio.

For the present study, data analysis was carried out using computer. S.P.S.S. package was used in computation work. The analysis of the data was carried out keeping in view the objectives and hypotheses. Null hypotheses were tested by using suitable statistical techniques. The data were analyzed and hypotheses were tested and conclusions were arrived at.

Present study aims at evolving a video instructional package to teach balanced diet to the students of Standard VII and studying its effectiveness in terms of the students' achievement.

4.2. Comparison of the Achievement of Students of Experimental Group with High S.E.S. Score and Low S.E.S. Score in Urban Area on Immediate Retention Test

To compare the achievement of students of experimental group with high S.E.S. score and low S.E.S. score in urban area on immediate retention test, following null hypothesis was formulated.

Hol There will not be significant difference between mean achievement of high S.E.S. and low S.E.S. group of students studied through video instructional package in urban area on immediate retention test scores.

To test this hypothesis mean and S.D. were computed for high S.E.S. and low S.E.S. groups of urban area on immediate retention test. 't' test was applied to test the significance of difference between means, Same has been presented in table No. 4.1.

Table 4.1

Mean, S.D. and 't' for High S.E.S. and Low S.E.S. Groups from Urban Area on Immediate Retention Test

Group	N	M	S.D.	't'
High S.E.S.	33	14.1	2.88	2.71
Low S.E.S.	32	12.08	3.12	

for df. 63) t 01 = 2.66
) t 05 = 2.00

Table No. 4.1. indicates that the observed value of 't' is 2.71 which is greater than expected value of 't.' This shows that the difference between two means is significant So. Hol is rejected. This further shows that the students of experimental group with high and low S.E.S. scores from urban area differ significantly on immediate retention test. This also shows that the students from urban area in experimental group with high S.E.S. performed significantly better than the students of low S.E.S. on immediate retention test.

4.3. Comparison of the Achievement of Students of Experimental Group with High S.E.S. Score and Low S.E.S. Score in Urban Area on Delayed Retention Test

To compare the achievement of students of experimental group with high S.E.S, score and low S.E.S. score in urban area on delayed retention test, following null hypothesis was formulated:

Ho2 There will not be significant difference between mean achievement of high S.E.S. and low S.E.S. group of students studied through video instructional package in urban area on delayed retention test scores.

To test this hypothesis mean and S.D. were computed for high S.E.S. and low S.E.S. groups of urban area on delayed retention test. 't' test was applied to test the significance of difference between means. Same has been presented in Table 4.2.

Table 4.2

Mean, S.D. and 't' for High S.E.S. and low S.E.S. Groups from Urban Area on Delayed Retention Test

Group	N	M	S.D.	't'
High S.E.S.	33	13.1	3.2	1.96
Low S.E.S.	32	11.6	2.96	

Table No. 4.2 indicates that the observed value of 't' is 1.96 which is less than expected value of 't', even at 0.05 level. This shows that the difference between two means is not significant. So Ho2 is accepted. This further shows that one students of experimental group with high and low S.E.S. scores from urban area do not differ significantly on delayed retention test.

4.4. Comparison of the Achievement of Students of Experimental Group with High S.E.S. Score and Low S.E.S. Score in Rural Area on Immediate Retention Test

To compare the achievement of students of experimental group with high S.E.S. score and low S.E.S. score in rural area on immediate retention test, following null hypothesis was formulated:

Ho3 There will not be significant difference between mean achievement of high S.E.S. and low S.E.S. group of students studied through video instructional package in rural area of immediate retention test scores.

To test this hypothesis mean, and S.D. were computed for high S.E.S. and low S.E.S. groups of rural area on immediate retention test. 't' test was applied to test the significance of difference between means. Same has been presented in Table No. 4.3.

Table 4.3

Mean, S.D. and 't' for High S.E.S. and Low S.E.S. Groups from Rural Area on Immediate Retention Test

Group	N	M	S.D.	't'
High S.E.S.	33	14.05	1.99	6.52
Low S.E.S.	32	10.39	2.5	

Table No. 4.3 indicates that the observed value of 't' is 6.52 which is greater than expected value of 't'. This shows that the difference between two means is significant. So Ho3 is rejected. This further shows that the students of experimental group with high and low S.E.S. scores from rural area differ significantly on immediate retention test. Students from rural area in experimental group with high S.E.S. performed significantly higher than students of low S.E.S. on immediate retention test.

4.5. Comparison of the Achievement of Students of Experimental Group With High S.E.S. Score and Low S.E.S. Score in Rural Area on Delayed Retention Test

To compare the achievement of students of experimental group with high S.E.S. score and low S.E.S. score in rural area on delayed retention test, following null hypothesis was formulated:

Ho4 There will not be significant difference between mean achievement of high S.E.S. and low S.E.S. group of students studied through video instructional package in rural area on delayed retention test scores.

To test this hypothesis mean and S.D. were computed for high S.E.S. and low S.E.S. groups of rural area on delayed retention test. 't' test was applied to the significance of difference between means. Same has been presented in Table No. 4.4.

Table 4.4

Mean, S.D. and 't' for High S.E.S. and Low S.E.S. Groups From Rural Area on Delayed Retention Test

Group	N	M	S.D.	't'
High S.E.S.	33	14.79	2.79	2.49
Low S.E.S.	32	12.99	3.02	

Table 4.4 indicates that the observed value of 't' is 2.49 which is greater than expected value of 't' at 0.05 level. This shows that the difference between two means is significant. So Ho4 is rejected. This

further shows that the students of experimental group with high and low S.E.S. scores from rural area differ significantly on delayed retention test. mean difference is in the favour of high S.E.S. group, which shows that the students of high S.E.S. group from rural area performed greater than their counter part on delayed retention test.

4.6. Comparison of the Achievement of Students of Experimental Group with High J.I.M. Score and Low J.I.M. Score in Urban Area on Immediate Retention Test

To compare the achievement of students of experimental group with high J.I.M. score and low J.I.M. score in urban area on immediate retention test, following null hypothesis was formulated:

Ho5 There will not be significant difference between mean achievement of high J.I.M. and low J.I.M. group of students studied through video instructional package in urban area on immediate retention test scores.

To test this hypothesis mean and S.D. were computed for high J.I.M. and low J.I.M. groups of urban area on immediate retention test. 't' test was applied to test the significance of difference between means. Same has been presented in Table 4.5.

Table 4.5

Mean, S.D. and 't' for High J.I.M. and Low J.I.M. Groups From Urban Area on Immediate Retention Test

Group	N	M	S.D.	't'
High J.I.M.	34	14.12	1.86	3.70
Low J.I.M.	31	12.01	2.63	

Table 4.5 indicates that the observed value of 't' is 3.70 which is greater than expected value of 't'. This shows that the difference between two means is significant. So Ho5 is rejected. This further shows that the students of experimental group with high and low J.I.M. scores from urban area differ significantly on immediate retention test. Mean difference of 2.11 is in favour of high J.I.M. group, which shows that students of high J.I.M. in urban area performed better than ow J.I.M. group on immediate retention test.

4.7. Comparison of the Achievement of Students of Experimental Group With High J.I.M. Score and Low J.I.M. Score in Urban Area on Delayed Retention Test

To compare the achievement of students of experimental group with high J.I.M. score and low J.I.M. score in urban area on delayed retention test, following null hypothesis was formulated.

Ho6 There will not be significant difference between mean achievement of high J.I.M. and low J.I.M. group of students studied through video instructional package in urban area on delayed retention test scores.

To test this hypothesis mean and S.D. were computed for high J.I.M. and low J.I.M. groups of urban area on delayed retention test. 't' test was applied to test the significance of difference between means. Same has been presented in Table No. 4.6.

Table 4.6

Mean, S.D. and 't' for High J.I.M. and Low J.I.M. Groups From Urban Area on Delayed Retention Test

Group	N	M	S.D.	't'
High J.I.M.	34	13.07	1.84	3.62
Low J.I.M.	31	11.60	2.70	

Table 4.6 indicates that the observed value of 't' is 3.62 which is greater than expected value of 't'. This shows that the difference between two means is significant. So Ho6 is rejected. Mean of high J.I.M. group is greater than their counter part. This shows that the students of high J.I.M. from urban area performed significantly better than their counter part on delayed retention test.

4.8. Comparison of the Achievement of Students of Experimental Group With High J.I.M. Score and Low J.I.M. Score in Rural Area on Immediate Retention Test

To compare the achievement of students of experimental group with high J.I.M. score and low J.I.M. score in rural area on immediate retention test, following null hypothesis was formulated.

Ho7 There will not be significant difference between mean achievement of high J.I.M. and low J.I.M. group of students studied through video instructional package in rural area on immediate retention test scores.

To test this hypothesis mean and S.D. were computed for high J.I.M. and low J.I.M. groups of rural area on immediate retention test. 't' test was applied to test the significance of difference between means. Same has been presented in Table 4.7.

Table 4.7

Mean, S.D. and 't' for High J.I.M. and Low J.I.M. Groups From Rural Area on Immediate Retention Test

Group	N	M	S.D.	't'
High J.I.M.	34	14.07	1.92	3.99
Low J.I.M.	31	11.54	3.01	

Table 4.7 indicates that the observed value of 't' is 3.99, which is greater than expected value of 't' at 0.01 level. So difference between two

means is significant. So Ho7 is rejected. Mean of high J.I.M. group is greater than low J.I.M. group. This shows that the students of high J.I.M. group from rural area performed significantly better on immediate retention test.

4.9. Comparison of the Achievement of Students of Experimental Group With High J.I.M. Score and Low J.I.M. Score in Rural Area on Delayed Retention Test

To compare the achievement of students of experimental group with high J.I.M. score and low J.I.M. score in rural area on delayed retention test, following null hypothesis was formulated:

Ho8 There will not be significant difference between mean achievement of high J.I.M. and low J.I.M. group of students studied through video instructional package in rural area on delayed retention test scores.

To test this hypothesis mean and S.D. were computed for high J.I.M. and low J.I.M. groups of rural area on delayed retention test. 't' test was applied to test the significance of difference between means. Same has been presented in Table 4.8.

Table 4.8

Mean, S.D. and 't' for High J.I.M. and Low J.I.M. Groups From Rural Area on Delayed Retention Test

Group	N	M	S.D.	't'
High J.I.M.	34	14.01	1.94	0.29
Low J.I.M.	31	14.19	2.19	

Table 4.8 indicates that the observed value of 't' is 0.29 which is less than expected value of 't' even at 0.05 level. This shows that the difference between two means is not significant. So Ho8 is accepted. This further shows that the performance of the students from high J.I.M. and low J.I.M. groups from rural area on delayed retention test is equal.

4.10. Comparison of the Achievement of Students of Experimental Group With High Anxiety Score and Low Anxiety Score in Urban Area on Immediate Retention Test

To compare the achievement of students of experimental group with high anxiety score and low anxiety score in urban area on immediate retention test, following null hypothesis was formulated:

Ho9 There will not be significant difference between mean achievement of high anxiety and low anxiety group of students studied through video instructional package in urban area on immediate retention test scores.

To test this hypothesis mean and S.D. were computed for high anxiety and low anxiety groups of urban area on immediate retention test. 't' test was applied to test the significance of difference between means. Same has been presented in Table No. 4.9.

Table 4.9

Mean, S.D. and 't' for High Anxiety and Low Anxiety Groups from Urban Area on Immediate Retention Test

Group	N	M	S.D.	't'
Low Anxiety	30	14.5	1.85	
High Anxiety	35	11.91	1.99	5.43

Table 4.9 indicates that the observed value of 't' is 5.43 which is greater than expected value of 't'. So difference between two means is significant. So Ho9 is rejected. This further shows that the students from low anxiety and high anxiety group from urban area differ significantly on immediate retention test. Mean of low anxiety group is greater than that of high anxiety group. This indicates that the low anxiety group performed significantly better on immediate retention test.

4.11. Comparison of the Achievement of Students of Experimental Group With High Anxiety Score and Low Anxiety Score in Urban Area on Delayed Retention Test

To compare the achievement of students of experimental group with high anxiety score and low anxiety score in urban area on delayed retention test, following null hypothesis was formulated:

Ho10 There will not be significant difference between mean achievement of high anxiety and low anxiety groups of students studied through video instructional package in urban area on delayed retention test scores.

To test this hypothesis mean and S.D. were computed for high anxiety and low anxiety groups of urban area on delayed retention test. 't' test was applied to test the significance of difference between means. Same has been presented in Table No. 4.10.

Table 4.10

Mean, S.D. and 't' for High Anxiety and Low Anxiety Groups From Urban Area on Delayed Retention Test

Group	N	M	S.D.	't'
High Anxiety	35	11.32	2.05	4.73
Low Anxiety	30	13.6	1.83	

Table 4.10 indicates that the observed value of 't' is 4.73 which is greater than expected value of 't'. So difference between two means is significant. So Ho10 is rejected, indicating that high anxiety and low anxiety groups differ significantly on delayed retention test. Low anxiety group from urban area performed significantly better than their counter part on delayed retention test.

4.12 Comparison of the Achievement of Students of Experimental Groups With High Anxiety Score and Low Anxiety Score in Rural Area on Immediate Retention Test

To compare the achievement of students of experimental group with high anxiety score and low anxiety score in rural area on immediate retention test, following null hypothesis was formulated:

Ho11 There will not be significant difference between mean achievement of high anxiety and low anxiety group of students studied through video instructional package in rural area on immediate retention test scores.

To test this hypothesis mean, and S.D. were computed for high anxiety and low anxiety groups of rural area on immediate retention test. 't' test was applied to test the significance of difference between means. Same has been presented in Table No. 4.11.

Table 4.11

Mean, S.D. and 't' for High Anxiety and Low Anxiety Groups From Rural Area on Immediate Retention Test

Group	N	M	S.D.	't'
High Anxiety	35	11.53	1.89	3.45
Low J.I.M.	30	13.08	1.73	

Table 4.11 indicates that the observed value of 't' is 3.45 which is greater than expected value of 't'. So difference between two means is significant. So Ho11 is rejected, indicating that the students from rural area in high and low anxiety groups differ significantly on immediate retention test. This further shows that the students of low anxiety group performed better than their counter part on immediate retention test.

4.13. Comparison of the Achievement of the Students of High Anxiety Score and Low Anxiety Score in Rural Area on Delayed Retention Test

To compare the achievement of students of experimental group with high anxiety score and low anxiety score in rural area on delayed retention test, following null hypothesis was formulated:

Ho12 There will not be significant difference between mean achievement of high anxiety and low anxiety group of students studied through video instructional package in rural area on delayed retention test scores.

To test this hypothesis mean, and S.D. were computed for high anxiety and low anxiety groups of rural area on delayed retention test. 't' test was applied to test the significance of difference between means. Same has been presented in Table No. 4.12.

Table 4.12

Mean, S.D. and 't' for High Anxiety and Low Anxiety Groups From Rural Area on Delayed Retention Test

Group	N	M	S.D.	't'
High Anxiety	35	13.26	2.9	2.18
Low Anxiety	30	14.6	2.02	

Table 4.12 indicates that the observed value of 't' is 2.18 which is greater than expected value of 't' at 0.05 level. So difference between two means is significant at 0.05 level. So Ho12 is rejected. The mean of low anxiety group from rural area is greater than their counter part. So low anxiety group performed better than their counter part on delayed retention test.

4.14. Comparison of the Achievement of Male and Female Students of Experimental Group in Urban Area on Immediate Retention Test

To compare the achievement of male and female students of experimental group in urban area on immediate retention test, following null hypothesis was formulated:

Ho13 There will not be significant difference between mean achievement of male and female students studied through video instructional package in urban area on immediate retention test scores.

To test this hypothesis mean and s.D. were computed for male students and female students of urban area on immediate retention test. 't' test was applied to test the significance of difference between means. Same has been presented in Table 4.13.

Table 4.13

Mean, S.D. and 't' for Male and Female Students From Urban Area on Immediate Retention Test

Group	N	M	S.D.	't'
Male Students	48	12.12	3.01	4.93
Female Students	17	15.9	2.6	

Table 4.13 indicates that the observed value of 't' is 4.93 which is greater than expected value of 't' indicating that difference between two means is significant. So Ho13 is rejected. Mean achievement of female students is higher than male students. This shows that the female students from urban area performed significantly better on immediate retention test than male students.

4.15 Comparison of the Achievement of Male and Female Students of Experimental Group in Urban Area on Delayed Retention Test

To compare the achievement of male and female students of experimental group in urban area on delayed retention test, following null hypothesis was formulated:

Ho14 There will not be significant difference between mean achievement of male and female students studied through video instructional package in urban area on delayed retention test scores.

to test this hypothesis mean and s.D. were computed for male students and female students of urban area on delayed retention test. 't' test was applied to test the significance of difference between means. Same has been presented in Table 4.14.

Table 4.14

Mean, S.D. and 't' for Male and Female Students From Urban Area on Delayed Retention Test

Group	N	M	S.D.	't'
Male Students	48	11.09	2.32	8.32
Female Students	17	15.98	1.99	

Table 4.14 indicates that the observed value of 't' is 8.32 which is greater than expected value of 't' at 0.01 level. So the difference between two means is significant. So Ho14 is rejected. Mean achievement of female

students is greater than male students indicating that female students from urban area performed better than male students on delayed retention test.

4.16. Comparison of the Achievement of Male and Female Students of Experimental Group in Rural Area on Immediate Retention Test

To compare the achievement of male and female students of experimental group in rural area on immediate retention test, following null hypothesis was formulated:

Ho15 There will not be significant difference between mean achievement of male and female students studied through video instructional package in rural area on immediate retention test scores.

To test this hypothesis mean and S.D. were computed for male and female students of rural area on immediate retention test. 't' test was applied to test the significance of difference between means. Same has been presented in Table No. 4.15.

Table 4.15

Mean, S.D. and 't' for Male and Female Students From Rural Area on Immediate Retention Test

Group	N	M	S.D.	't'
Male Students	48	11.64	3.01	2.16
Female Students	17	12.99	1.84	

Table 4.15 indicates that the observed value of 't' is 2.16 which is greater than expected value of 't' at 0.05 level. So difference between two means is significant at 0.05 level. So Ho15 is rejected. Mean achievement of female students from rural area is greater than male students, which indicates that the female students performed significantly better on immediate retention test.

4.17. Comparison of the Achievement of Study of Experimental Group in Rural Area on Delayed Retention Test

To compare the achievement of male and female students of experimental group in rural area on delayed retention test, following null hypothesis was formulated:

Ho16 There will not be significant difference between mean achievement of male and female students studied through video instructional package in rural area on delayed retention test scores.

To test this hypothesis mean, and S.D. were computed for male and female students of rural area on delayed retention test. 't' test was applied to test the significance of difference between means. Same has been presented in Table 4.16.

Table 4.16

Mean, S.D. and 't' for Male and Female Students From Rural Area on Delayed Retention Test

Group	N	M	S.D.	't'
Male Students	48	13.08	2.85	4.59
Female Students	17	16.13	2.15	

Table 4.16 indicates that the observed value of 't' is 4.59 which is greater than expected value of 't' at 0.01 level. So the difference between two means is significant. So H016 is rejected. Mean achievement of the female students from rural area is greater than male students, which indicates that female students performed significantly better on delayed retention test.

4.18. Main Effects and Interaction Effects on Immediate Retention Test for Area, Methods of Teaching And S.E.S.

To study the main effects, two way interactions and three way interactions on immediate retention test with respect to area, methods of teaching and S.E.S. following null hypothesis were formulated:

Ho17 There will not be significant difference in mean achievement on immediate retention test between urban and rural students.

Ho18 There will not be significant difference in mean achievement on immediate retention test of students belonging to experimental group and control group.

Ho19 There will not be significant difference between mean achievement on immediate retention test of high S.E.S. group and low S.E.S. group.

Ho20 There will not be interaction between area and methods of teaching on immediate retention test scores.

Ho21 There will not be interaction between area and S.E.S. on immediate retention test scores.

Ho22 There will not be interaction between methods of teaching and S.E.S. on immediate retention test scores.

Ho23 There will not be interaction between area, methods of teaching and S.E.S. on immediate retention test scores.

In order to test above hypotheses, following primary data in the form of cell means were computed. Same has been presented in the Table 4.17.

Table 4.17

Cell Means for Retention Test Score With Respect to Area, Methods of Teaching and S.E.S. Scores

Urban	Rural
12.38 (130)	11.78 (130)

	Control	Experimental
	11.48 (130)	12.68 (130)
S.E.S.		
	11.54 (130)	12.62 (130)
Urban 1	11.65 (65)	13.11 (65)
Rural 2	11.31 (65)	12.25 (65)

S.E.S. Test Score

	Low S.E.S.	High S.E.S.
Urban 1	11.76 (55)	12.83 (75)
Rural 2	11.37 (75)	12.33 (55)
Control	11.39 (84)	11.63 (46)
Experimental	11.80 (46)	13.15 (84)

	Control	Experimental
Urban 1	11.84 (43)	11.50 (12)
Rural 2	10.93 (41)	11.91 (34)

High S.E.S.

	Control	Experimental
Urban 1	11.27 (22)	13.47 (53)
Rural 2	11.96 (24)	12.61 (31)

On the basis of these data, analysis of variance technique was applied and 'F' ratios were computed. Same has been presented in Table 4.18.

Table 4.18

Summary of ANOVA for Immediate Retention Test Score With Respect to Area, Methods of Teaching and S.E.S. Test Score

Source of Variation	Sum of Squares	DF	Mean Square	'F'	Significant of 'F'
Main Effects	146.313	3	48.771	4.694	
UR - Urban Rural	15.236	1	15.236	1.466	N.S.
EC - Experimental Control	58.370	1	58.370	5.618	S.
S.E.S.	29.313	1	29.313	2.821	N.S.
2-Way Interactions	14.373	3	4.791	0.461	
UR - EC	0.637	1	0.637	0.061	N.S.
UR - SES	1.237	1	1.237	0.119	N.S.
EC - SES	10.974	1	10.974	1.056	N.S.
3-Way Interactions	27.515	1	27.515	2.648	N.S.
UR - EC SEC	27.515	1	27.515	2.648	
Residual	2618.261	252	10.390		
Total	2806.462	259	10.836		

'F' (1,259) 3.87 at 0.05
6.92 at 0.01

N.S. - Not Significant
S. - Significant

It can be seen from the Table 4.18 that in case of main effects, 'F' ratio of 1.466 for urban and rural area is not significant even at .05 level. So Ho17 is accepted. It means that students belonging to urban and rural area do not differ on their achievement, in the immediate retention test scores.

It can be seen from the Table 4.18 that in case of main effects 'F' ratio of 5.618 for experimental and control group is significant at 0.05 level. So the Ho18 is rejected. it means that the students of experimental group who were exposed to video instructional package should better performance than that of control group studied through traditional method of teaching.

It can be seen from the Table 4.18 that in case of main effects 'F'ratio of 2.821 for S.E.S. is not significant at both the levels. So Ho19 is accepted. it means that there is no significant difference between mean achievement on immediate retention test score of high S.E.S. group and low S.E.S. group.

It can be seen from the Table 4.18 that in case of two way interaction 'F' ration of 0.061 is not significant. So Ho20 is accepted. This indicates that there is no interaction between area and methods of teaching on immediate retention test scores.

It can be seen from the Table No. 4.18 that in case of two way interaction 'F' ratio of 0.119 is not significant. So Ho21 is accepted. It means that area and S.E.S. jointly do not affect the immediate retention test scores.

It can be seen from the Table No. 4.18 that in case of two way interaction 'F' ratio of 1.056 is not significant at both the levels. So Ho22 is accepted. It means that methods of teaching and S.E.S. jointly do not affect the immediate retention test scores.

It can be seen from the Table No. 4.18 that in case of three way interaction 'F' ratio of 2.648 is not significant at both the levels. So Ho23 is accepted. It indicates that the area, methods of teaching, and S.E.S. jointly do not affect the immediate retention test scores.

4.19. Main Effects and Interaction Effects on Delayed Retention Test For Area, Methods of Teaching and S.E.S.

To study the main effects, two way interaction and three way interaction on delayed retention test with respect to area, methods of teaching and S.E.S. following null hypotheses were formulated:

Ho24 There will not be significant difference in mean achievement on delayed retention test between urban and rural students.

Ho25 There will not be significant difference in mean achievement on delayed retention test of students belonging to experimental group and control group.

Ho26 There will not be significant difference between mean achievement on delayed retention test between high S.E.S. group and low S.E.S. group.

Ho27 There will not be interaction between area and methods of teaching on delayed retention test scores.

Ho28 There will not be interaction between area and S.E.S. on delayed retention test scores.

Ho29 There will not be interaction between methods of teaching and S.E.S. on the performance of delayed retention test scores.

Ho30 There will not be interaction between area, methods of teaching and S.E.S. on delayed retention test scores.

In order to test above hypotheses, following primary data in the form of cell means were computed. Same has been presented in the Table 4.3.

Table 4.19

Cell Means for Delayed Retention Test Score With Respect to Area, Methods of Teaching and S.E.S. Test Score

	Urban	Rural
	12.08 (130)	12.41 (130)
	Control	Experiment
	11.37 (130)	13.12 (130)
	Low S.E.S.	High S.E.S.
	11.77 (130)	12 72 (130)
	Control	Experimental
Urban 1	11.80 (65)	12.37 (65)
Rural 2	10.94 (65)	13.88 (65)

S.E.S.	Lowses	Highses
Urban 1	11.82 (55)	12.28 (75)
Rural 2	11.73 (75)	13.33 (55)
Control 1	11.13 (84)	11.80 (46)
Experimental 2	12.93 (46)	13.23 (84)

S.E.S.	Lowses	Lowses
Control 1	11.91 (43)	11.50 (12)
Experimental 2	10.32 (41)	13.44 (34)

S.E.S.	Highses	Highses
Control 1	11.59 (22)	12.57 (53)
Experimental 2	12.00 (24)	14.35 (31)

On the basis of these data, analysis of variance technique was applied and 'F' ratios were computed. Same has been presented in Table 4.20.

Table 4.20

Summary of ANOVA for Delayed Retention Test Score With Respect to Area, Methods of Teaching and S.E.S. Test Score

Source of Variation	Sum of Squares	DF	Mean Square	'F'	Significant of 'F'
Main Effects	224.305	3	74.768	10.233	
UR - Urban Rural	10.532	1	10.532	1.441	N.S.
EC - Experimental Control	150.471	1	150.471	20.593	S.
S.E.S.	17.581	1	17.581	2.406	N.S.
2-Way Interactions	127.121	3	42.374	5.799	
UR - EC	76.009	1	76.009	10.403	S.
UR - SES	14.294	1	14.294	1.956	N.S.
EC - SES	0.311	1	0.311	0.043	N.S.
3-Way Interactions	15.498	1	15.498	2.121	N.S.
UR - EC SEC	15.498	1	15.498	2.121	
Residual	1841.322	252	7.307		
Total	2208.246	259	8.526		

'F' (1,259)) 3.87 at 0.05) 6.92 at 0.01

N.S. = Not Significant

S. = Significant.

It can be seen from the Table No. 4.20 that in case of main effects 'F' ratio of 1.441 of urban and rural area is not significant at 0.05 level. So Ho24 is accepted. It means that students of urban and rural area do not differ in their achievement on delayed retention test.

It can be seen from the Table No. 4.20 that in case of main effects 'F' ratio of 20.593 for experimental and control is highly significant beyond 0.01 level. So Ho25 is rejected. it indicate that the students of experimental and control group differ in their achievement on delayed retention. It means there is better effect of video instructional package on the performance of students of experimental group than those of control group. It is observed that the method of teaching through video instructional package was better than that of traditional method of teaching.

It can be seen from the Table No. 4.20 that in case of main effects 'F' ratio of 2.406 for high and low S.E.S. is not significant at both the levels. So Ho26 is accepted. It indicates that there is no significant of difference between mean achievement on delayed retention test between high S.E.S. group and low S.E.S. group.

It can be seen from the Table No. 4.20 that in case of two way interactions 'F' ratio of 10.403 is highly significant at both the levels. so Ho27 is rejected. It indicates that the scores of urban, rural areas and methods of teaching jointly taken into consideration influence the delayed retention test scores.

It can be seen from the Table No. 4.20 that in case of two way interaction 'F' ratio of 1.956 is not significant at both the levels. So Ho28 is accepted. It means that the scores of urban rural areas and high-low S.E.S. jointly taken into consideration do not differ significantly in their delayed retention test scores.

It can be seen from the Table No. 4.20 that in case of two way interaction 'F' ratio of 0.043 is not significant. So Ho29 is accepted. It indicates that there was no interaction between methods of teaching and S.E.S. on the performance of delayed retention test scores.

It can be seen from the Table 4.20 that in case of three way interactions 'F' ratio of 2.121 for urban and rural areas, experimental control groups and S.E.S. is not significant at both the levels. So Ho30 is accepted. It means that the area, methods of teaching and S.E.S. jointly do not affect the delayed retention test scores.

4.20. Main Effects and Interaction Effects on Immediate Retention Test For Area, Methods of Teaching and J.I.M.

To study the main effects, two way interaction and three way interaction on immediate retention test with respect to area, method of teaching and J.I.M. following null hypotheses were formulated:

Ho31 There will not be significant difference in mean achievement on immediate retention test between high J.I.M. group and low J.I.M. group.

Ho32 There will not be interaction between area and J.I.M. on immediate retention test scores.

Ho33 There will not be interaction between methods of teaching and J.I.M. on immediate retention test scores.

Ho34 There will not be interaction between area, methods of teaching and J.I.M. on immediate retention test scores.

In order to test above hypotheses, following primary data in the form of cell means were computed. Same has been presented in the Table 4.21.

Table 4.21

Cell Means for Immediate Retention Test Score With Respect to Area, Methods of Teaching and J.I.M. Test Score

UR	Urban 1	Rural 2
	12.38 (130)	11.78 (130)
CE	Control 1	Experimental 2
	11.48 (130)	12.68 (130)
JIM	12.22 (130)	11.94 (130)
CE	Control 1	Experimental 2
Urban 1	11.65 (65)	13.11 (65)
Rural 2	11.31 (65)	12.25 (65)
JIM	Low JIM 1	High JIM 2
Urban 1	12.55 (76)	12.13 (54)
Rural 2	11.74 (54)	11.80 (76)
Control 1	11.72 (69)	11.20 (61)
Experimental 2	12.77 (61)	12.59 (69)

= Low JIM

Table 4.22

Summary of ANOVA for Immediate Retention Test Score With Respect to Area, Methods of Teaching and JIM Test Score

Source of Variation	Sum of Squares	DF	Mean Square	'F'	Significant of 'F'
Main Effects	121.173	3	40.391	3.810	
UR - Urban Rural	19.545	1	19.545	1.844	
EC - Experimental Control	95.715	1	95.715	9.028	
JIM	4.173	1	4.173	0.394	N.S.
2-Way Interactions	12.096	3	4.032	0.380	
UR - EC	6.325	1	6.325	0.597	
UR - JIM	4.416	1	4.416	0.417	N.S.
EC - JIM	3.397	1	3.397	0.320	N.S.
3-Way Interactions	1.638	1	1.638	0.155	
UR - EC JIM	1.638	1	1.638	0.155	N.S.
Residual	2671.554	252	10.601		
Total	2806.462	259	10.836		

'F' (259)) 3.87 at 0.05
) 6.92 at 0.01

N.S. = Not Significant
S. = Significant

It can be seen from the Table No. 4.22 that in case of main effects 'F; ratio of 0.394 of high JIM and low JIM is not significant at 0.05 level. So Ho31 is accepted. It indicates that students belonging to highly motivated group (High J.I.M) group) do not differ in their immediate retention test score from the students' belonging to low J.I.M. group.

It can be seen from the Table No. 4.22 that in case of two way interactions 'F' ratio of 0.417 is not significant at both the levels. So Ho32 is accepted. It indicates that area and J.I.M. jointly do not affect the immediate retention score of the students.

It can be seen from the Table 4.22 that in case of two way interaction 'F' ratio of 0.320 is not significant. So Ho33 is accepted. It indicates that the methods of teaching and J.I.M. jointly do not affect the immediate retention test scores.

It can be seen from the Table 4.22 that in case of three way interaction 'F' ratio of 0.155 for urban area methods of teaching and J.I.M. is not significant at both the levels. So Ho34 is accepted. It means that the area, methods of teaching and J.I.M. jointly do not affect the immediate retention test scores.

4.21. Main Effects and Interaction Effects on Delayed Retention Test for Area, Methods of Teaching and JIM

To study the main effects two way interaction and three way interaction on delayed retention test with respect to area, methods of teaching and J.I.M. following null hypotheses were formulated:

Ho35 There will not be significant difference between mean achievement on delayed retention test of high J.I.M. group and low J.I.M. group.

Ho36 There will not be interaction between area and J.I.M. on delayed retention test scores.

Ho37 There will not be interaction between methods of teaching and J.I.M. on delayed retention test scores.

Ho38 There will not be interaction between area, methods of teaching and J.I.M. on delayed retention test scores.

In order to test above hypotheses, following primary data in the form of cell means were computed. Same has been presented in the Table 4.23.

Table 4.23

Cell Means for Delayed Retention Test Score With Respect to Area, Methods of Teaching and JIM Test Scores

Urban	Rural
1	2
12.08	12.41
(130)	(130)
Control	Experimental
1	2
11.37	13.12
(130)	(130)
Low	High
1	2
11.93	12.56
(130)	(130)

	Control 1	Experimental 2
Urban 1	11.80 (65)	12.37 (65)
Rural 2	10.94 (65)	13.88 (65)

	Low JIM 1	High JIM 2
Urban 1	11.92 (76)	12.31 (54)
Rural 2	11.94 (54)	12.74 (76)

	Low JIM 1	High JIM 2
Control 1	11.41 (69)	11.33 (61)
Experiment 2	12.52 (61)	13.65 (69)

= Low JIM

	Control 1	Experimental 2
Urban 1	11.78 (40)	12.08 (36)
Rural 2	10.90 (29)	13.16 (25)

= High JIM

	Control 1	Experimental 2
Urban 1	11.84 (25)	12.72 (29)
Rural 2	10.97 (36)	14.33 (40)

On the basis of these data, analysis of variance technique was applied and 'F' ratios were computed. Same has been presented in Table 4.24.

Table 4.24

Summary of ANOVA for Delayed Retention Test Score With Respect to Area, Methods of Teaching and JIM Test Score

Source of Variation	Sum of Squares	DF	Mean Square	'F'	Significant of 'F'
Main Effects	221.447	3	73.816	9.880	
UR - Urban Rural	3.673	1	3.673	0.492	
EC - Experimental Control	192.454	1	192.454	25.760	
J.I.M.	14.724	1	14.724	1.971	N.S.
2-Way Interactions	103.088	3	34.363	4.600	
UR - EC	76.888	1	76.888	10.292	
UR - JIM	1.124	1	1.124	0.150	N.S.
EC - JIM	10.894	1	10.894	1.458	N.S.
3-Way Interactions	1.036	1	1.036	0.139	N.S.
UR - EC JIM	1.036	1	1.036	0.139	
Residual	1882.675	252	7.471		
Total	2208.246	259	8.526		

N.S. = Not Significant
S. = Significant

It can be seen from the Table 4.24 that in case of main effects 'F' ratio of 1.971 of high and low J.I.M. group is not significant at both the levels. So Ho35 is accepted. It indicates that there is no significant difference between mean achievement on delayed retention test of high J.I.M. group and low J.I.M. group.

It can be seen from the Table No. 4.24, that in case of two way interaction 'F' ratio of 0.150 for area and J.I.M. on delayed retention test score is not significant at both the levels. So Ho36 is accepted. It indicates that area and J.I.M. jointly do not affect the delayed retention test scores.

It can be seen from the Table No. 4.24 that in case of two way interaction 'F' ratio of 1.458 for methods of teaching and J.I.M. on delayed retention score is not significant at both the levels. So Ho37 is accepted. It indicates that even the methods of teaching and J.I.M. jointly do not affect the delayed retention scores.

It can be seen from the Table No. 4.24 that in case of three way interaction 'F' ratio of 0.139 for area, methods of teaching and J.I.M. on delayed retention score is not significant. So Ho38 is accepted. It means in second order interaction of the three factors together do not influence the delayed retention score.

4.22. Main Effects and Interaction Effects on Immediate Retention Test For Area, Methods of Teaching and Anxiety

Ho39 There will not be significant difference between mean achievement on immediate retention test between high anxiety group and low anxiety group.

Ho40 There will not be interaction between area and anxiety on immediate retention test scores.

Ho41 There will not be interaction between methods of teaching and anxiety on immediate retention test scores.

Ho42 There will not be interaction between area, methods of teaching and anxiety on immediate retention test scores.

In order to test above hypotheses, following primary data in the form of cell means were computed. Same has been presented in the Table 4.25.

Table 4.25

Cell Means for Immediate Retention Test Score With Respect To Area, Methods of Teaching and Anxiety Test Score

Urban 1 12.38 (130)	Rural 2 11.78 (130)
Control 1 11.48 (130)	Experimental 2 12.68 (130)

	Law ANX	
	12.31	11.79
	(143)	(117)

	Central	Experimental
	1	2
Urban 1	11.65	13.11
	(65)	(65)
Rural 2	11.31	12.25
	(65)	(65)

High ANX	1	2
Urban 1	12.78	11.75
	(79)	(51)
Rural 2	11.72	11.83
	(64)	(66)

ANX

EC	1	2
1	11.71	11.06
	(83)	(47)
2	13.13	12.29
	(60)	(70)

Low Anxiety

CE	Control	Experimental
	1	2
Urban 1	12.17	13.45
	(41)	(38)
Rural 2	11.26	12.59
	(42)	(22)

High Anxiety

	Control	Experimental
	1	2
Urban 1	10.75	12.63
	(24)	(27)
Rural 2	11.39	12.07
	(23)	(43)

On the basis of these data, analysis of variance technique was applied and 'F; ratios were computed. Same has been presented in Table 4.26.

Table 4.26

Summary of ANOVA for Immediate Retention Test Score With Respect to Area, Methods of Teaching and Anxiety Test Score

Source of Variation	Sum of Squares	DF	Mean Square	'F'	Significant of 'F'
Main Effects	146.118	3	48.706	4.650	
UR - Urban Rural	17.370	1	17.370	1.658	
EC - Experimental Control	109.923	1	109.923	10.494	
ANX	29.118	1	29.118	2.780	N.S.
2-Way Interactions	14.721	3	4.907	0.468	
UR - EC	4.023	1	4.023	0.384	
UR - ANX	12.766	1	12.766	1.219	N.S.
EC - ANX	0.001	1	0.001	0.000	N.S.
3-Way Interactions	5.921	1	5.921	05659	N.S.
UR - EC ANX	5.921	1	5.921	0.565	
Residual	2639.702	252	10.475		
Total	2806.462	259	10.836		

N.S. = Not Significant
S. = Significant

On the basis of these data, analysis of variance technique was applied and 'F' ratios were computed. Same has been presented in Table 4.26.

Table 4.26

Summary of ANOVA for Immediate Retention Test Score With Respect to Area, Methods of Teaching and Anxiety Test Score

Source of Variation	Sum of Squares	DF	Mean Square	'F'	Significant of 'F'
Main Effects	146.118	3	48.706	4.650	
UR - Urban Rural	17.370	1	17.370	1.658	
EC - Experimental Control	109.923	1	109.923	10.494	
ANX	29.118	1	29.118	2.780	N.S.
2-Way Interactions	14.721	3	4.907	0.468	
UR - EC	4.023	1	4.023	0.384	
UR - ANX	12.766	1	12.766	1.219	N.S.
EC - ANX	0.001	1	0.001	0.000	N.S.
3-Way Interactions	5.921	1	5.921	05659	N.S.
UR - EC ANX	5.921	1	5.921	0.565	
Residual	2639.702	252	10.475		
Total	2806.462	259	10.836		

N.S. = Not Significant
S. = Significant

It can be seen from the Table No. 4.26 that in case of main effects 'F' ratio of 2.780 of high and low anxiety groups on immediate retention score is not significant at both the levels. So Ho39 is accepted. It indicate retention test of high anxiety groups do not differ from that of low anxiety group.

It can be seen from the Table 4.26 that in case of two way interaction 'F' ratio 1.219 of area and anxiety on immediate retention score is not significant at both the levels. So Ho40 is accepted. It indicates that area and anxiety jointly do not affect the immediate retention test scores.

It can be seen from the Table 4.26 that in case of two way interactions 'F' ratio zero between methods of teaching and anxiety indicates that there is no interaction between methods of teaching and anxiety on immediate retention score. So Ho41 is accepted. It means that there is no interaction between methods of teaching and anxiety on immediate retention score.

It can be seen from the Table 4.26 that in case of three way interaction 'F' ratio 0.565 for area, methods of teaching and anxiety is not significant at both the levels. So Ho42 is accepted. It indicates that area, methods of teaching and anxiety jointly do not affect the immediate retention score.

4.23. Main Effects and Interactions Effects on Delayed Retention Test For Area, Methods of Teaching and Anxiety

Ho43 There will not be significant difference between mean achievement on delayed retention test of high anxiety and low anxiety group.

Ho44 There will not be interaction between area and anxiety on delayed retention test scores.

Ho45 There will not be interaction between methods of teaching and anxiety on delayed retention test scores.

Ho46 There will not be interaction between area, methods of teaching and anxiety on delayed retention test scores.

In order to test above hypotheses, following primary data in the form of cell means were computed. Same has been presented in the Table No. 4.27.

Table 4.27

Cell Means for Delayed Retention Test Score With Respect to Area, Methods of Teaching and Anxiety Test Score

UR	Urban	Rural
	12.08 (130)	12.41 (130)
	Control 1	Experimental 2
	11.37 (130)	13.12 (130)
	Low Anxiety 1	High Anxiety 2
	12.34 (143)	12.13 (117)

	Control 1	Experimental 2
Urban 1	11.80 (65)	12.37 (65)
Rural 2	10.94 (65)	13.88 (65)

	Low Anxiety 1	High Anxiety 2
Urban 1	12.49 (79)	11.45 (51)
Rural 2	12.16 (64)	12.65 (66)

	Low Anxiety 1	High Anxiety 2
Control 1	11.52 (83)	11.11 (47)
Experimental 2	13.43 (60)	12.81 (70)

Low Anxiety

		Control 1	Experimental 2
UR	1	12.12 (41)	12.89 (38)
	2	10.93 (42)	14.50 (22)

High Anxiety

	Control 1	Experimental 2
Urban 1	11.25 (24)	11.63 (27)
Rural 2	10.96 (23)	13.56 (43)

On the basis of these data, analysis of variance technique was applied and 'F' ratios were computed. Same has been presented in Table 4.28

Table 4.28

Summary of ANOVA for Delayed Retention Test Score With Respect to Area, Methods of Teaching and Anxiety Test Score

Source of Variation	Sum of Squares	DF	Mean Square	'F'	Significant of 'F'
Main Effects	228.276	3	76.092	10.306	
UR - Urban Rural	9.820	1	9.820	1.330	
EC - Experimental Control	217.345	1	217.345	29.437	
Anxiety	21.552	1	21.552	2.919	N.S.
2-Way Interactions	118.105	3	39.368	5.332	
UR - EC	97.891	1	97.981	13.270	
UR - Anxiety	5.611	1	5.611	0.760	N.S.
EC - Anxiety	6.857	1	6.857	0.929	N.S.
3-Way Interactions	1.253	1	1.253	0.170	N.S.
UR - EC Anxiety	1.253	1	1.253	0.170	
Residual	1860.612	252	7.383		
Total	2208.246	259	8.526		

N.S. = Not Significant
S. = Significant

It can be seen from the Table No. 4.28 that in case of main effects 'F' ratio of 2.919 for high and low anxiety group is not significant of both the levels. So Ho43 is accepted. It indicates that level of anxiety does not affect the delayed retention score of the students. It means both groups showed some mean score on delayed retention test.

It can be seen from the Table No. 4.128 that in case of two way interaction 'F' ratio of 0.760 for area and anxiety on delayed retention test score is not significant at both the levels. So Ho44 is accepted. It

indicates that area and anxiety jointly do not affect the delayed retention test scores.

It can be seen from the Table 4.28 that in case of two way interactions 'F' ratio of 0.929 for methods of teaching and anxiety on delayed retention score is not significant at both the levels. So Ho45 is accepted. it indicates that the methods of teaching and levels of anxiety jointly do not affect the delayed retention score.

It can be seen from the Table No. 4.28 that in case of three way interaction 'F' ratio of 0.170 for area, methods of teaching and anxiety on delayed retention score is not significant. So Ho46 is accepted. It indicates that in second order interaction of the three factors together do not influence the delayed retention score.

4.24. Main Effects and Interaction Effects on Immediate Retention Test For Area, Methods of Teaching and Sex

To study the main effects, two way interaction and three way interaction on immediate retention test with respect to area, methods of teaching and sex following null hypotheses were formulated:

Ho47 There will not be significant difference in mean achievement of male and female students on immediate retention test scores.

Ho48 There will not be interaction between area and sex on immediate retention test scores.

Ho49 There will not be interaction between methods of teaching and sex on immediate retention test scores.

Ho50 There will not be interaction between area, methods of teaching and sex on immediate retention test scores.

In order to test above hypotheses, following primary data in the form of cell means were computed. Same has been presented in the Table 4.29.

Table 4.29

Cell Means for Immediate Retention Test Score With Respect to Area, Methods of Teaching and Sex Score

	Urban	Rural
	1	2
	12.38	11.78
	(130)	(130)
	Control	Experimental
	1	2
	11.48	12.68
	(130)	(130)
SEX	Female	Male
	1	2
	12.21	11.87
	(160)	(100)
	Control	Experimental
Urban 1	11.65	13.11
	(65)	(65)
Rural 2	11.31	12.25
	(65)	(65)
	Female	Male
	1	2
Urban 1	12.58	12.06
	(80)	(50)
Rural 2	11.84	11.68
	(80)	(50)

	Female 1	Male 2
Control 1	11.89 (80)	10.82 (50)
Experimental 2	12.53 (80)	12.92 (50)

Female	Control 1	Experimental 2
Urban 1	11.73 (40)	13.43 (40)
Rural 2	12.05 (40)	11.63 (40)

Male	Control 1	Experimental 2
Urban 1	11.52 (25)	12.60 (25)
Rural 2	10.12 (25)	13.24 (25)

On the basis of these data analysis of variance technique was applied and 'F' ratios were computed. Same has been presented in Table 4.30.

Table 4.30

Summary of ANOVA for Immediate Retention Test Score With Respect to Area, Methods of Teaching and Sex Test Score

Source of Variation	Sum of Squares	DF	Mean Square	'F'	Significant of 'F'
Main Effects	123.958	3	41.319	4.041	
UR - Urban Rural	23.400	1	23.400	2.289	
EC - Experimental Control	93.600	1	93.600	9.155	
SEX	6.958	1	6.958	0.681	N.S.
2-Way Interactions	39.319	3	13.106	1.282	
UR - EC	4.446	1	4.446	0 435	
UR - SEX	1.966	1	1.966	0.192	N.S.
EC - SEX	32.906	1	32.906	3.219	N.S.
3-Way Interactions	66.720	1	66.720	6.526	S.
UR - EC Anxiety	66.720	1	66.720	6.526	
Residual	2576.465	252	10.224		
Total	2806.462	259	10.836		

N.S. = Not Significant
S. = Significant

It can be seen from the Table 4.30 that in case of main effects 'F' ratio of 0.681 of male and female students on immediate retention is not significant at both the levels. So Ho47 is accepted. It means that there is no difference on immediate retention test scores of male and female students. It indicates that male and female students showed the same mean score on immediate retention test. This shows that performance of male and female students on immediate retention test do not differ significantly.

It can be seen from the Table 4.30 that in case of two way interaction 'F' ratio of 0.192 of area, and sex is not significant at both the levels. So Ho48 is accepted. It indicates that area and sex jointly do not affect the immediate retention test scores.

It can be seen from the Table 4.30 that in case of two way interactions 'F' sex is not significant at 0.05 level. So Ho49 is accepted. It means that methods of teaching and sex jointly do not affect the immediate retention test scores.

It can be seen from the Table 4.30 that in case of three way interaction 'F' ratio of 6.526 is significant at 0.05 level. So Ho50 is rejected. It means that area, methods of teaching and sex jointly affect the immediate retention test scores.

4.25. Main Effects and Interaction Effects on Delayed Retention Test for Area, Methods of Teaching and Sex

To study the main effects, two way interaction and three way interaction on delayed retention test with respect to area, methods of teaching and sex following null hypotheses were formulated:

Ho51 There will not be significant difference in mean achievement on delayed retention test between male and female students.

Ho52 There will not be interaction between area and sex on delayed retention test scores.

Ho53 There will not be interaction between methods of teaching and sex on delayed retention test scores.

Ho54 There will not be interaction between area, methods of teaching and sex on delayed retention test scores.

In order to test above hypotheses following primary data in the form of cell means were computed. Same has been presented in the Table No. 4.31.

Table 4.31

Cell Means for Delayed Retention Test Score With Respect to Area, Methods of Teaching and Sex Score

	Urban 1 12.08 (130)	Rural 2 12.41 (130)
	Control 1 11.37 (130)	Experimental 2 13.12 (130)
	Male 1 12.04 (160)	Female 2 12.58 (100)
	Control 1	Experimental 2
Urban 1	11.80 (65)	12.37 (65)
Rural 2	10.94 (65)	13.88 (65)
	Male 1	Female 2
Urban 1	11.53 (80)	12.98 (50)
Rural 2	12.55 (80)	12.18 (50)

		Male	Female
		1	2
EC	1	10.96	12.02
		(80)	(50)
	2	13.11	13.14
		(80)	(50)

Male		Control	Experimental
		1	2
Urban	1	11.20	11.85
		(40)	(40)
Rural	2	10.73	14.38
		(40)	(40)

Female		Control	Experimental
		1	2
Urban	1	12.76	13.20
		(25)	(25)
Rural	2	11.28	13.08
		(25)	(25)

On the basis of these data analysis of variance technique was applied and 'F' ratios were computed. Same has been presented in Table 5.32.

Table 4.32

Summary of ANOVA for Delayed Retention Test Score With Respect to Area, Methods of Teaching and Sex Score

Source of Variation	Sum of Squares	DF	Mean Square	'F'	Significant of 'F'
Main Effects	224.834	3	74.945	10.410	
UR - Urban Rural	6.785	1	6.785	0.942	
EC - Experimental Control	199.938	1	199.938	27.771	
SEX	18.111	1	18.111	2.516	N.S.
2-Way Interactions	158.777	3	52.926	7.351	
UR - EC	91.215	1	91.215	12.670	
UR - SEX	51.240	1	51.240	7.117	S.
EC - SEX	16.322	1	16.322	2.267	N.S.
3-Way Interactions	10.345	1	10.345	1.437	N.S.
UR - EC SEX	10.345	1	10.345	1.437	
Residual	1814.290	252	7.200		
Total	2208.290	259	7.200		

N.S. = Not Significant
S. = Significant

It can be seen from the Table No. 4.32 that in case of main effects 'F' ratio of 2.516 of male and female students on delayed retention is not significant at both the levels. So Ho51 is accepted. It indicates that male and female students do not differ on their achievement on delayed retention test scores.

It can be seen from the Table No. 4.32 that in case of two way interactions 'F' ratio of 7.117 for area and sex is significant at 0.01 level. So Ho52 is rejected. It indicates that area and sex jointly influence the achievement of students on delayed retention test.

It can be seen from the Table No. 4.32 that in case of two way interactions 'F' ratio of 2.267 for methods of teaching and sex is not significant at both the levels. So Ho53 is accepted. It indicates that the methods of teaching and sex jointly do not affect the delayed retention test scores.

It can be seen from the Table No.4.32 that in case of three way interactions 'F' ratio of 1.437 for area, methods of teaching and sex is not significant. So Ho54 is accepted. It indicates that in second order interaction of the three factors together do not influence the delayed retention score.