CHAPTER III

ANALYSIS AND INTERPRETATION

CHAPTER THREE

ANALYSIS AND INTERPRETATION

3.0.0 INTRODUCTION

The present chapter presents the analysis and interpretation of the collected data There are two sets of data One set consists of the class achievement test scores in English language while the other set consists of the treatment data, indicated in the earlier chapter The class achievement score in the English language test was collected from the class teachers of the various sections of the second standard of Baroda School at Bagikhana The other set of data consists of scores obtained by the second standard students who were in different groups for the treatment on different modes of a particular rhyme. The second set of data were collected through a test which was given to the students after they were exposed to CALM in different modes of rhyme. The analysis of data was carried out through analysis of covariance (ANCOVA) by considering English language class achievement test score as a covariate. Then the interpretation was done. This chapter contains analysis & interpretation of the data on the seven rhymes as follows

1. Twinkle, Twinkle Little Star.
2. Riddle Me, Riddle Me.
3. Number Rhyme.
4. Funny, Bunny.
5. Johny, Johny.
6. Butterfly, Butterfly.
7. Baa, Baa, Black sheep

3.1.0. ANALYSIS AND INTERPRETATION OF "TWINKLE, TWINKLE,LITTLE STAR"

The folowing is an analysis of the effectivenes of CALM in different modes prepared on **"Twinkle, Twinkle, little star"**

Table-3.1.1 : Summary of ANCOVA for Achievement on the Word meaning test by Groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	241.176	60.294	
WITHIN	94	454.832	4.832	12.478 *
TOTAL	98	696.008	65.126	

***Significant at 0.01 level**

Table 3.1.1. reveals that the adjusted F-value for different modes of learning through computer is 12.478, which is significant at 0.01 level with df equal to 4/94. It shows that different modes have effect on Word meaning learning differently, when class achievement test score in English language is considered as a covariate. In the light of this, the null hypothesis that the adjusted mean achievement score on word meaning (lexicon) of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as covariate is rejected. It is evident that the mean achievement scores of students on word meaning (Lexicon) through different modes differ significantly when class achievement score in English is considered as a covariate. In order to find out which pair of adjusted mean differ significantly, the data were further analysed through t-test (Table 3.1.2)

Table-3.1.2 Groupwise adjusted mean and t-value on Word meaning (Lexicon).

GROUP	ADJUSTED MEAN	T	GT	TM	GTM	GTMR
T	6.509		**6.509 ***	**2.818 ***	1.773	**4.705 ***
GT	2.390			**3.563 ***	**4.596 ***	1.861
TM	4.900				1.020	1.768
GTM	5.627					**2.814 ***
GTMR	3.669					

*** Significant at 0.01 level**

Table-3.1.2 shows that the t-value between T (Text) and GT Graphics Text) mode is 6.509 which is significant at 0.01 level with df 39. It is evident that the adjusted mean achievement score on Word meaning (lexicon) by the students learning on computer through Text and Graphics Text modes differ significantly. The adjusted mean achievement through the Text mode (6.509) is significantly higher than the adjusted mean achievement through the Graphics Text mode (2.390) on Word meaning (lexicon).

The t-value between T (Text) and TM (Text Music) mode is 2.818, which is significant at 0.01 level with df 38. It is evident that the adjusted mean achievement score on Word meaning (lexicon) by the students learning on computer through T (Text) and TM (Text Music) modes differ significantly. The adjusted mean achievement through the Text mode (6.509)is significantly higher than adjustedmean achievement through the the TM (Text Music) mode (4.900) on Word meaning (lexicon).

The t-value between T (Text) and GTMR (Graphics Text Music Recitation) mode is 4.705, which is significant at 0.01 level with df 40. It is evident that the adjusted mean achievement score on word meaning (lexicon) by the students learning on computer through Text and Graphics Text Music Recitation modes differ significantly The adjusted mean achievement through the Text mode (6.509) is significantly higher than the adjusted mean achievement Graphics Text Music Recitation mode (3.669) on Word meaning (lexicon).

The t-value between GT (Graphics Text) TM (Text Music) mode is 3 563, which is significant at 0 01 level with df 37. It is evident that the adjusted mean achievement score on Word meaning (lexicon) by the students learning on computer through Graphics Text and Text Music modes differ significantly. The adjusted mean achievement through the Text Music mode (4.900) is significantly higher than the adjusted mean achievement through the Graphics Text mode (2.390) on Word meaning (lexicon).

The t-value between GT (Graphics Text) and GTM (Graphics Text Music) mode is 4 596, which is significant at 0.01 level with df 37. It is evident that the adjusted mean achievement score on Word meaning (lexicon) by the students learning on computer through Graphics Text and Graphics Text Music modes differ significantly. The adjusted mean achievement through the Graphics Text Music mode (5.627) is significantly higher than the adjusted mean achievement through the Graphics Text mode (2.390) on Word meaning (lexicon).

The t-value between GTM (Graphics Text Music) and GTMR (Graphics Text Music Recitation) mode is 2.814, which is significant at 0.01 level with df 38. It is evident that the adjusted mean achievement score on word meaning (lexicon) by the students learning on computer through Graphics Text Music and Graphics Text Music Recitation modes differ significantly. The adjusted mean achievement through the Graphics Text Music mode (5.627) is significantly higher than the adjusted mean achievement through Graphics Text Music Recitation mode (3.669) on Word meaning (lexicon).

Table 3.1.3 Summary of ANCOVA for Achievement on the Analytical understanding test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	301 902	75 475	
WITHIN	94	606.613	6.453	**11.695 ***
TOTAL	98	908.515	81 928	

***Significant at 0.01 level**

Table 3.1.3 reveals that the adjusted F-value for different modes of learning through computer is 11.695, which is significant at 0.01 level with df equal to 4/94. It shows that different modes have effect on Analytical Understanding differently, when class achievement test score in English language is considered as a covariate. In light of this, the null hypothesis that the adjusted mean achievement score on analytical understanding of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in english language is considered as covariate is rejected In order to find out which pair of adjusted mean differ significantly,the data were further analysed through t-test (Table 3.1.4).

Table-3.1.4 Groupwise adjusted mean and t-value on Analytical Understanding.

GROUP	ADJUSTED MEAN	T	GT	TM	GTM	GTMR
T	7.414		**5.701 ***	**5.232 ***	**4.825 ***	**5.722 ***
GT	2.889			0.389	0.791	0.049
TM	3.205				0.396	0.345
GTM	3.532					0 751
GTMR	2.928					

*** Significant at 0.01 level**

Table-3.1.4 shows that the t-value between T (Text) and GT (Graphics Text) mode is 5.701, which is significant at 0.01 level with df 39. It is evident that the adjusted mean achievement score on Analytical Understanding by the students learning on computer through T (Text) and GT(Graphics Text) modes differ significantly. The adjusted mean achievement through the T (Text) mode (7.414) is significantly higher than the adjusted mean achievement through GT (Graphics Text) mode (2.889) on Analytical Understanding

The t-value between T (Text) and TM (Text Music) mode is 5.232, which is significant at 0.01 level with df 38. It is evident that the adjusted mean achievement score on Analytical Understanding by the students learning on computer through T (Text) and TM (Text Music) modes differ significantly. The adjusted mean achievement through the T (Text) mode (7.414) is significantly higher than the adjusted mean achievement through TM (Text Music) mode (3.205) on Analytical Understanding.

The t-value between T (Text) and GTM (Graphics Text Music) mode is 4.825, which is significant at 0.01 level with df 38. It is evident that the adjusted mean achievement score on Analytical Understanding by the students learning on computer through T (Text) and GTM (Graphics Text Music) modes differ significantly. The adjusted mean achievement through the T (Text) mode (7.414) is significantly higher than the adjusted mean achievement through GTM (Graphics Text Music) mode (3.532) on Analytical Understanding

The t-value between T (Text) and GTMR (Graphics Text Music Recitation) mode is 5 722, which is significant at 0.01 level with df 40. It is evident that the adjusted mean

achievement score on Analytical Understanding of the students learning on computer through T (Text) and GTMR (Graphics Text Music Recitation) modes differ significantly The adjusted mean achievement through the T (Text) mode (7 414) is significantly higher than the adjusted mean achievement through GTMR (Graphics Text Music Recitation) mode (2.928) on Analytical Understanding.

Table 3.1.5 Summary of ANCOVA for Achievement on the Comprehensive Understanding test by groups in the T, GT, TM, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	149 855	37.463	
WITHIN	94	315.425	3.355	**11.164 ***
TOTAL	98	465.280	40.818	

*** Significant at 0.01 level**

Table 3.1.5 reveals that the adjusted F-value for different modes of learning through computer is 11.164, which is significant at 0.01 level with df equal to 4/94. It shows that different modes have effect on Comprehensive Understanding differently, when class achievement test in English language is considered as covariate. In light of this, the null hypothesis that the adjusted mean achievement score on comprehensive understanding of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as covariate is rejected In order to find out which pair of adjusted mean differ significantly, the data were further analysed through t-test (Table 3.1.6).

Table-3.1.6 Groupwise adjusted mean and t-value on Comprehensive Understanding.

GROUP	ADJUSTED MEAN	T	GT	TM	GTM	GTMR
T	3.510		**4.920 ***	**5.108 ***	**5.994 ***	**4.659 ***
GT	0.693			0.250	1 125	0 318
TM	0.546				0.864	0 567
GTM	0.033					1 453
GTMR	0.785					

*** Significant at 0.01 level**

Table 3.1.6 The t-value between T (Text) and GT (Graphics Text) mode is 4.920, which is significant at 0.01 level with df 39.It is evident that the adjusted mean achievement score on Comprehensive Understanding by the students learning on computer through T (Text) and GT (Graphics Text) modes differ significantly. The adjusted mean achievement through the T (Text) mode (3.510) is significantly higher than the adjusted mean achievement through GT (Graphics Text) mode (0.693) on Comprehensive Understanding.

The t-value between T (Text) and TM (Text Music) mode is 5.108, which is significant at 0.01 level with df 38. It is evident that the adjusted mean achievement score on Comprehensive Understanding by the students learning on computer through T (Text) and TM (Text Music) modes differ significantly. The adjusted mean achievement through the T (Text) mode (3.510) is significantly higher than the adjusted mean achievement through TM (Text Music) mode (0.546) on Comprehensive Understanding.

The t-value between T (Text) and GTM (Graphics Text Music) mode is 5.994, which is significant at 0.01 level with df 38. It is evident that the adjusted mean achievement score on Comprehensive Understanding by the students learning on computer through T (Text) and GTM (Graphics Text Music) modes differ significantly. The adjusted mean achievement through the T (Text) mode (3.510) is significantly higher than the adjusted mean achievement through GTM (Graphics Text Music) mode (0.033) on Comprehensive Understanding

The t-value between T (Text) and GTMR (Graphics Text Music Recitation) mode is 4.659, which is significant at 0 01 level with df 40. It is evident that the adjusted mean achievement score on Comprehensive Understanding of the students learning on computer through T (Text) and GTMR (Graphics Text Music Recitation) modes differ significantly. The adjusted mean achievement through the T (Text) mode (3.510) is significantly higher than the adjusted mean achievement through GTMR (Graphics Text Music Recitation) mode (0.785) on Comprehensive Understanding.

Table-3.1.7 Summary of ANCOVA for Achievement on the Writing test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	193.695	48.423	
WITHIN	94	343.515	3.654	**13.250 ***
TOTAL	98	537.210	52.077	

*** Significant at 0.01 level**

Table 3.1.7 reveals that the adjusted F-value for different modes of learning through computer is 13.250, which is significant at 0.01 level with df equal to 4/94. It shows that different modes have effect on Writing differently, when class achievement test in English language is considered as covariate. In light of this, the null hypothesis that the adjusted mean achievement score on Writing of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as covariate is rejected. In order to find out which pair of adjusted mean differ significantly, the data were further analysed through t-test (Table 3.1.8).

Table-3.1.8 Groupwise adjusted mean and t-value on Writing.

GROUP	ADJUSTED MEAN	T	GT	TM	GTM	GTMR
T	5.132		**4.184 ***	**4.199 ***	0 320	0 780
GT	2.236			0.576	**4.411 ***	**5.618 ***
TM	2.590				**3.786 ***	**4.960 ***
GTM	4.938					1.081
GTMR	5.592					

*** Significant at 0.01 level**

Table 3.1.8 shows that the t-value between T (Text) and GT (Graphics Text) mode is 4.184, which is significant at 0.01 level with df 39 It is evident that the adjusted mean achievement score on Writing by the students learning on computer through T (Text) and GT (Graphics Text) modes differ significantly. The adjusted mean achievement through the T (Text) mode (5.132) is significantly higher than the adjusted mean achievement through GT (Graphics Text) mode (2.236) on Writing.

The t-value between T (Text) and TM (Text Music) mode is 4.199, which is significant at 0.01 level with df 38.It is evident that the adjusted mean achievement score on Writing by the students learning on computer through T (Text) and TM (Text Music) modes differ significantly. The adjusted mean achievement through the T (Text) mode (5.132) is significantly higher than the adjusted mean achievement through TM (Text Music) mode (2.590) on Writing.

The t-value between GT (Graphics Text) and GTM (Graphics Text Music) mode is 4.411, which is significant at 0.01 level with df 37. It is evident that the adjusted mean achievement score on Writing by the students learning on computer through GT (Graphics Text) and GTM (Graphics Text Music) modes differ significantly. The adjusted mean achievement through the GTM (Graphics Text Music) mode (4 938) is significantly higher than the adjusted mean achievement through GT (Graphics Text) mode (2 236) on Writing.

The t-value between GT (Graphics Text) and GTMR (Graphics Text Music Recitation) mode is 5.618, which is significant at 0 01 level with df 39 It is evident that the adjusted mean achievement score on Writing of the students learning on computer through GT (Graphics Text) and GTMR (Graphics Text Music Recitation) modes differ significantly The adjusted mean achievement through the GTMR (Graphics Text Music Recitation) mode (5.592) is significantly higher than the adjusted mean achievement through GT (Graphics Text) mode (2.236) on Writing.

The t-value between TM (Text Music) and GTM (Graphics Text Music) mode is 3.786, which is significant at 0.01 level with df 36. It is evident that the adjusted mean achievement score on Writing by the students learning on computer through TM (Text Music) and GTM (Graphics Text Music) modes differ significantly. The adjusted mean achievement through the GTM (Graphics Text Music) mode (4.938) is significantly higher than the adjusted mean achievement through TM (Text Music) mode (2 590) on Writing.

The t-value between TM (Text Music) and GTMR (Graphics Text Music Recitation) mode is 4.960, which is significant at 0.01 level with df 38. It is evident that the adjusted mean achievement score on Writing of the students learning on computer through TM (Text Music) and GTMR (Graphics Text Music Recitation) modes differ significantly. The adjusted mean achievement through the GTMR (Graphics Text Music Recitation) mode (5.592) is significantly higher than the adjusted mean achievement through TM (Text Music) mode (2.590) on Writing.

Table-3.1.9 Summary of ANCOVA for Achievement on the Recitation test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	51.268	12.817	
WITHIN	94	267.521	2.846	**4.503 ***
TOTAL	98	318.789	15.663	

*** Significant at 0.01 level**

Table 3.1.9 reveals that the adjusted F-value for different modes of learning through computer is 4.503, which is significant at 0.01 level with df equal to 4/94. It shows that different modes have effect on Recitation differently, when class achievement test in English language is considered as covariate. In light of this, the null hypothesis that the adjusted mean achievement score on Recitation of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as covariate is rejected. It is evident that the mean achievement scores of students on Recitation through different modes differ significantly when class achievement score in English language is considered as a covariate. In order to find out which pair of adjusted mean differ significantly, the data were further analysed through t-test (Table3.1 10).

Table-3.1.10 Groupwise adjusted mean and t-value on Recitation.

GROUP	ADJUSTED MEAN	T	GT	TM	GTM	GTMR
T	4.708		**3.730 ***	0.564	0.214	0 926
GT	2.742			**3.080 ***	**3.426 ***	**2.815 ***
TM	4.407				0.341	0.338
GTM	4.594					0.688
GTMR	4.226					

*** Significant at 0.01 level**

Table 3.1.10 shows that the t-value between T (Text) and GT (Graphics Text) mode is 3.730, which is significant at 0.01 level with df 39. It is evident that the adjusted mean achievement score on Recitation by the students learning on computer through T (Text) and GT (Graphics Text) modes differ significantly. The adjusted mean achievement through the T (Text) mode (4.708) is significantly higher than the adjusted mean achievement through GT (Graphics Text) mode (2.742) on Recitation.

The t-value between GT (Graphics Text) and TM (Text Music) mode is 3.080, which is significant at 0.01 level with df 37. It is evident that the adjusted mean achievement score on Recitation by the students learning on computer through GT (Graphics Text) and TM (Text Music) modes differ significantly. The adjusted mean achievement through the TM (Text Music) mode (4.407) is significantly higher than the adjusted mean achievement through GT (Graphics Text) mode (2.742) on Recitation.

The t-value between GT (Graphics Music) and GTM (Graphics Text Music) mode is 3.426, which is significant at 0.01 level with df 37. It is evident that the adjusted mean achievement score on Recitation by the students learning on computer through GT (Graphics Text) and GTM (Graphics Text Music) modes differ significantly. The adjusted mean achievement through the GTM (Graphics Text Music) mode (4 594) is significantly higher than the adjusted mean achievement through GT (Graphics Text) mode (2.742) on Recitation

Table-3.1.11 Summary of ANCOVA for Achievement on the Language Learning test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	2954.402	738.600	
WITHIN	94	4451.273	47.354	**15.597 ***
TOTAL	98	7405.675	885.954	

*** Significant at0.01 level**

Table 3.1.11 reveals that the adjusted F-value for different modes of learning through computer is 15.597, which is significant at 0.01 level with df equal to 4/94. It shows that different modes have effect on Language Learning differently, when class achievement test in English language is considered as a covariate. In light of this, the null hypothesis that the adjusted mean achievement score on Language Learning of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as covariate is rejected. In order to find out which pair of adjusted mean differ significantly, the data were further analysed through t-test (Table 3.1.12).

Table-3.1.12 Groupwise adjusted mean and t-value on Language Learning.

GROUP	ADJUSTED MEAN	T	GT	TM	GTM	GTMR
T	27.635		**7.620 ***	**5.504 ***	**4.060 ***	**4.862 ***
GT	11 251			1.991	**3.418 ***	**2.817 ***
TM	15.642				1 408	0 765
GTM	18.787					0.678
GTMR	17.309					

*** Significant at 0.01 level**

Table 3.1.12 shows that the t-value between T (Text) and GT (Graphics Text) mode is 7.620, which is significant at 0.01 level with df 39. It is evident that the adjusted mean achievement score on Language learning by the students learning on computer through T (Text) and GT (Graphics Text) modes differ significantly.The adjusted mean achievement through the T (Text) mode (27.635) is significantly higher than the adjusted mean achievement through GT (Graphics Text) mode (11.251) on Language learning.

The t-value between T (Text) and TM (Text Music) mode is 5.504, which is significant at 0.01 level with df 38. It is evident that the adjusted mean achievement score on Language learning by the students learning on computer through T (Text) and TM (Text Music) modes differ significantly. The adjusted mean achievement through the T (Text) mode (27.635) is significantly higher than the adjusted mean achievement through TM (Text Music) mode (15.642) on Language learning.

The t-value between T (Text) and GTM (Graphics Text Music) mode is 4.060, which is significant at 0.01 level with df 38. It is evident that the adjusted mean achievement score on Language by the students learning on computer through T (Text) and GTM (Graphics Text Music) modes differ significantly. The adjusted mean achievement through the T (Text) mode (27 635) is significantly higher than the adjusted mean achievement through GTM (Graphics Text Music) mode (18.787) on Language learning.

The t-value between T (Text) and GTMR (Graphics Text Music Recitation) mode is 4 862, which is significant at 0.01 level with df 40 It is evident that the adjusted mean

achievement score on Language learning by the students learning on computer through T (Text) and GTMR (Graphics Text Music Recitation) modes differ significantly The adjusted mean achievement through the T (Text) mode (27.635) is significantly higher than the adjusted mean achievement through GTMR (Graphics Text Music Recitation) mode (17.309) on Language learning.

The t-value between GT (Graphics Text) and GTM (Graphic Text Music) mode is 3 418, which is significant at .01 level with df 37. It is evident that the adjusted mean achievement score on Language learning by the students learning on computer through GT (Graphics Text) and GTM (Graphics Text Music) modes differ significantly. The adjusted mean achievement through the GTM (Graphics Text Music) mode (18 787) is significantly higher than the adjusted mean achievement through GT (Graphics Text) mode (11.251) on Language learning.

The t-value between GT (Graphics Text) and GTMR (Graphics Text Music Recitation) mode is 2.817, which is significant at 0.01 level with df 39. It is evident that the adjusted mean achievement score on Language learning by the students learning on computer through GT (Graphics Text) and GTMR (Graphics Text Music Recitation) modes differ significantly. The adjusted mean achievement through the GTMR (Graphics Text Music Recitation) mode (17.309) is significantly higher than the adjusted mean achievement through GT (Graphics Text) mode (11.251) on Language learning .

3.1.1 FINDINGS

(1) The adjusted mean achievement score of the students on Word meaning through different modes differ significantly when class achievement score in English is considered as a covariate.

(2) The adjusted mean achievement score of the students on Analytical Understanding through different modes differ significantly when class achievement score in English is considered as a covariate.

(3) The adjusted mean achievement score of the students on Comprehensive Understanding through different modes differ significantly when class achievement score in English is considered as a covariate

(4) The adjusted mean achievement score of the students on Writing through different modes differ significantly when class achievement score in English is considered as a covariate.

(5) The adjusted mean achievement score of the students on Recitation through different modes differ significantly when class achievement score in English is considered as a covariate.

(6) The adjusted mean achievement score of the students on Language learning through different modes differ significantly when class achievement score in English is considered as a covariate.

(7) The adjusted mean achievement score of the students on Text mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text mode when class achievement score in English is considered as a covariate on Word meaning.

(8) The adjusted mean achievement score of the students on Text mode is significantly higher than the adjusted mean achievement score of the students on Text Music mode when class achievement score in English is considered as a covariate on Word meaning.

(9) The adjusted mean achievement score of the students on Text mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text Music Recitation mode when class achievement score in English is considered as a covariate on Word meaning.

(10) The adjusted mean achievement score of the students on Text Music mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text mode when class achievement score in English is considered as a covariate on Word meaning.

(11) The adjusted mean achievement score of the students on Graphics Text Music mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text mode when class achievement score in English is considered as a covariate on Word meaning.

(12) The adjusted mean achievement score of the students on Graphics Text Music mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text Music Recitation mode when class achievement score in English is considered as a covariate on Word meaning.

(13) The adjusted mean achievement score of the students on Text mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text mode when class achievement score in English is considered as a covariate on Analytical Understanding.

(14) The adjusted mean achievement score of the students on Text mode is significantly higher than the adjusted mean achievement score of the students on Text Music mode when class achievement score in English is considered as a covariate on Analytical Understanding.

(15) The adjusted mean achievement score of the students on Text mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text Music mode when class achievement score in English is considered as a covariate on Analytical Understanding.

(16) The adjusted mean achievement score of the students on Text mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text Music Recitation mode when class achievement score in English is considered as a covariate on Analytical Understanding.

(17) The adjusted mean achievement score of the students on Text mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text mode when class achievement score in English is considered as a covariate on Comprehensive Understanding.

(18) The adjusted mean achievement score of the students on Text mode is significantly higher than the adjusted mean achievement score of the students on Text Music mode when class achievement score in English is considered as a covariate on Comprehensive Understanding.

(19) The adjusted mean achievement score of the students on Text mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text Music mode when class achievement score in English is considered as a covariate on Comprehensive Understanding.

(20) The adjusted mean achievement score of the students on Text mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text Music Recitation mode when class achievement score in English is considered as a covariate on Comprehensive Understanding.

(21) The adjusted mean achievement score of the students on Text mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text mode when class achievement score in English isconsidered as a covariate on Writing.

(22) The adjusted mean achievement score of the students on Text mode is significantly higher than the adjusted mean achievement score of the students on Text Music mode when class achievement score in English is considered as a covariate on Writing.

(23) The adjusted mean achievement score of the students on Graphics Text Music mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text mode when class achievement score in English is considered as a covariate on Writing.

(24) The adjusted mean achievement score of the students on Graphics Text Music Recitation mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text mode when class achievement score in English is considered as a covariate on Writing.

(25) The adjusted mean achievement score of the students on Graphics Text Music mode is significantly higher than the adjusted mean achievement score of the students on Text Music mode when class achievement score in English is considered as a covariate on Writing.

(26) The adjusted mean achievement score of the students on Graphics Text Music Recitation mode is significantly higher than the adjusted mean achievement score of the students on Text Music mode when class achievement score in English is considered as a covariate on Writing.

(27) The adjusted mean achievement score of the students on Text mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text mode when class achievement score in English is considered as a covariate on Recitation.

(28) The adjusted mean achievement score of the students on Text Music mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text mode when class achievement score in English is considered as a covariate on Recitation

(29) The adjusted mean achievement score of the students on Graphics Text Music mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text mode when class achievement score in English is considered as a covariate on Recitation.

(30) The adjusted mean achievement score of the students on Graphics Text Music Recitation mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text mode when class achievement score in English is considered as a covariate on Recitation.

(31) The adjusted mean achievement score of the students on Text mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text mode when class achievement score in English is considered as a covariate on Language learning.

(32) The adjusted mean achievement score of the students on Text mode is significantly higher than the adjusted mean achievement score of the students on Text Music mode when class achievement score in English is considered as a covariate on Language learning.

(33) The adjusted mean achievement score of the students on Text mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text Music mode when class achievement score in English is considered as a covariate on Language learning.

(34) The adjusted mean achievement score of the students on Text mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text Music Recitation mode when class achievement score in English is considered as a covariate on Language learning.

(35) The adjusted mean achievement score of the students on Graphics Text Music mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text mode when class achievement score in English is considered as a covariate on Language learning

(36) The adjusted mean achievement score of the students on Graphics Text Music Recitation mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text mode when class achievement score in English is considered as a covariate on Language learning

3.2.0 ANALYSIS AND INTERPRETATION OF "RIDDLE ME, RIDDLE ME"

The following is an analysis of the effectiveness of CALM in different modes prepared on the **" Riddle Me, Riddle Me"** , rhyme

Table-3.2.1 : Summary of ANCOVA for Achievement on the Word meaning test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	3.790	0.947	
WITHIN	91	47.617	0.523	1.811
TOTAL	95	51.407	1.470	

Table 3.2.1 reveals that the adjusted F-value for different modes of learning through computer is 1.811, which is not significant at 0.05 level with df equal to 4/91. It shows that different modes do not affect Word meaning differently, when class achievement test score in English language is considered as a covariate. In light of this, the null hypothesis that the adjusted mean achievement score on Word meaning of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as covariate is not rejected. It is evident that the mean achievement scores of students on Word meaning through different modes do not differ significantly when class achievement score in English language is considered as a covariate.

Table-3.2.2 : Summary of ANCOVA for Achievement on the Analytical understanding test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	6.088	1.522	
WITHIN	91	61.825	0.679	2.240
TOTAL	95	67.914	2.201	

Table3.2.2 reveals that the adjusted F-value for different modes of learning through computer is 2.240, which is not significant at 0.05 level with df equal to 4/91. It shows that different modes do not affect Analytical Understanding differently, when class achievement test score in English language is considered as a covariate. In light of this the null, hypothesis that the adjusted mean achievement score on Analytical Understanding of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as a covariate is not rejected. It is evident that the mean achievement scores of students on Analytical Understanding through different modes do not differ significantly when class achievement score in English language is considered as covariate.

Table-3.2.3 : Summary of ANCOVA for Achievement on the Comprehensive Understanding test by the groups in T, GT, TM, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	17.922	4.480	
WITHIN	91	378.036	4.154	1.078
TOTAL	95	395.958	8.634	

Table 3.2.3 reveals that the adjusted F-value for different modes of learning through computer is 1.078, which is not significant at 0.05 level with df equal to 4/91 It shows that different modes do not affect Comprehensive Understanding differently, When class achievement test score in English language is considered as a covariate. In light of this, the null hypothesis that the adjusted mean achievement score on Comprehensive Understanding of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as a covariate is not rejected. It is evident that the mean achievement scores of students on Comprehensive Understanding through different modes do not differ significantly when class achievement score in English language is considered as covariate.

Table-3.2.4 : Summary of ANCOVA for Achievement on the Writing test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	21.533	5.280	
WITHIN	91	207.491	2.280	2.361
TOTAL	95	229.024	7.560	

Table 3.2.4 reveals that the adjusted F-value for different modes of learning through computer is 2.361, which is not significant at 0.05 level with df equal to 4/91. It shows that different modes do not affect Writing differently, when class achievement test score in English language is considered as a covariate. In light of this, the null hypothesis that the adjusted mean achievement score on Writing of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as a covariate is not rejected. It is evident that the mean achievement scores of students on Writing through different modes do not differ significantly when class achievement score in English language is considered as a covariate.

Table-3.2.5 : Summary of ANCOVA for Achievement on the Recitation test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	20.998	5.249	
WITHIN	91	326.262	3.585	1.464
TOTAL	95	347.261	8.834	

Table 3.2.5 reveals that the adjusted F-value for different modes of learning through computer is 1.464, which is not significant at 0.05 level with df equal to 4/91. It shows that different modes do not affect Recitation differently, when class achievement test score in English language is considered as a covariate. In light of this, the null hypothesis that the adjusted mean achievement score on Recitation of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as a covariate is not rejected. It is evident that the mean achievement scores of students on Recitation through different modes do not differ significantly when class achievement score in English language is considered as a covariate

Table-3.2.6 : Summary of ANCOVA for Achievement on the Language Learning test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	188.178	29.544	
WITHIN	91	2379.616	26.149	1.129
TOTAL	95	2497.794	55.693	

Table 3.2.6 reveals that the adjusted F-value for different modes of learning through computer is 1.129, which is not significant at 0.05 level with df equal to 4/91. It shows that different modes do not affect on Language learning differently, when class achievement test score in English language is considered as a covariate. In light of this, the null hypothesis that the of the adjusted mean achievement score on Language learning of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as a covariate is not rejected. It is evident that the mean achievement scores of students on Language learning through different modes do not differ significantly when class achievement score in English language is considered as a covariate.

3.2.1 FINDINGS

(1) The adjusted mean achievement score of the students on Word meaning through different modes do not differ significantly, when class achievement score in English is considered as covariate.

(2) The adjusted mean achievement score of the students on Analytical understanding through different modes do not differ significantly, when class achievement score in English is considered as covariate.

(3) The adjusted mean achievement score of the students on Comprehensive understanding through different modes do not differ significantly, when class achievement score in English is considered as covariate

(4) The adjusted mean achievement score of the students on Writing through different modes do not differ significantly, when class achievement score in English is considered as covariate.

(5) The adjusted mean achievement score of the students on Recitation through different modes do not differ significantly, when class achievement score in English is considered as covariate.

(6) The adjusted mean achievement score of the students on Language learning through different modes do not differ significantly, when class achievement score in English considered as covariate.

3.3.0 ANALYSIS AND INTERPRETATION OF "NUMBER RHYME"

The following is an analysis of the effectiveness of CALM in different mode prepared on **"Number Rhyme".**

Table-3.3.1 : Summary of ANCOVA for Achievement on the Word meaning test by groups in the T, GT, TM, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	13.904	3.476	
WITHIN	92	145.753	1.584	2.194
TOTAL	96	159.657	5.050	

Table 3.3.1 reveals that the adjusted F-value for different modes of learning through computer is 2.194, which is not significant at 0.05 level with df equal to 4/92. It shows that different modes do not affect Word meaning differently, when class achievement test score in English language is considered as a covariate. In light of this, the null hypothesis that the adjusted mean achievement score on Word meaning of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as a covariate is not rejected. It is evident that the mean achievement scores of students on Word meaning through different modes do not differ significantly when class achievement score in English language is considered as a covariate.

Table-3.3.2 : Summary of ANCOVA for Achievement on the Analytical understanding test by groups in the T, GT, TM, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	37.878	9.469	
WITHIN	92	575.607	6.256	1.513
TOTAL	96	613.486	15.725	

Table 3.3.2 reveals that the adjusted F-value for different modes of learning through computer is 1.513, which is not significant at 0.05 level with df equal to 4/92. It shows that different modes do not affect Analytical Understanding differently when class achievement test score in English language is considered as a covariate In light of this, the null hypothesis that the adjusted mean achievement score on Analytical Understanding of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as a covariate is not rejected. It is evident that the mean achievement scores of students on Analytical Understanding through different modes do not differ significantly when class achievement score in English language is considered as a covariate.

Table-3.3.3 : Summary of ANCOVA for Achievement on the Comprehensive Understanding test by groups in the T, GT, TM, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	39.448	9 862	
WITHIN	92	396.644	4.311	2.287
TOTAL	96	436.096	14.173	

Table 3.3.3 reveals that the adjusted F-value for different modes of learning through computer is 2.287, which is not significant at 0.05 level with df equal to 4/92. It shows that different modes do not affect Comprehensive Understanding differently when class achievement test score in English language is considered as a covariate. In light of this, the null hypothesis that the adjusted mean achievement score on Comprehensive Understanding of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as a covariate is not rejected. It is evident that the mean achievement scores of students on Comprehensive Understanding through different modes do not differ significantly when class achievement score in English language is considered as a covariate.

Table-3.3.4 : Summary of ANCOVA for Achievement on the Writing test by groups in the T, GT, TM, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	1 528	0.382	
WITHIN	92	675.386	7.341	0 052
TOTAL	96	676.915	7.723	

Table 3.3.4 reveals that the adjusted F-value for different modes of learning through computer is 0.052, which is not significant at 0.05 level with df equal to 4/92. It shows that different modes do not affect Writing differently when class achievement test score in English language is considered as a covariate. In light of this, the null hypothesis that the adjusted mean achievement score on Writing of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as a covariate is not rejected. It is evident that the mean achievement scores of students on Writing through different modes do not differ significantly when class achievement score in English language is considered as a covariate.

Table-3.3.5 : Summary of ANCOVA for Achievement on the Recitation test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	19.583	4.895	
WITHIN	92	391.287	4.253	1.151
TOTAL	96	410.870	9.148	

Table3.3.5 reveals that the adjusted F-value for different modes of learning through computer is 1.151, which is not significant at 0.05 level with df equal to 4/92. It shows that different modes do not affect Recitation differently when class achievement test score in English language is considered as a covariate. In light of this, the null hypothesis that the adjusted mean achievement score of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as a covariate is not rejected. It is evident that the mean achievement scores of students on Recitation through different modes do not differ significantly when class achievement score in English language is considered as a covariate.

Table-3.3.6 : Summary of ANCOVA for Achievement on the Language Learning test by groups in the T, GT, TM, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	65.681	16 420	
WITHIN	92	4473.752	48.627	0.337
TOTAL	96	4539.433	65.047	

Table 3.3.6 reveals that the adjusted F-value for different modes of learning through computer is 0.337, which is not significant at 0 05 level with df equal to 4/92. It shows that different modes do not affect Language learning differently when class achievement test score in English language is considered as a covariate. In light of this, the null hypothesis that the adjusted mean achievement score of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as a covariate is not rejected. It is evident that the mean achievement scores of students on Language learning through different modes do not differ significantly when class achievement score in English language is considered as a covariate.

3.3.1 FINDINGS

(1) The adjusted mean achievement score of the students on Word meaning through different modes do not differ significantly, when class achievement score in English is considered as covariate.

(2) The adjusted mean achievement score of the students on Analytical understanding through different modes do not differ significantly, when class achievement score in English is considered as covariate.

(3) The adjusted mean achievement score of the students on Comprehensive understanding through different modes do not differ significantly, when class achievement score in English is considered as covariate.

(4) The adjusted mean achievement score of the students on Writing through different modes do not differ significantly, when class achievement score in English is considered as covariate.

(5) The adjusted mean achievement score of the students on Recitation through different modes do not differ significantly, when class achievement score in English is considered as covariate.

(6) The adjusted mean achievement score of the students on Language learning through different modes do not differ significantly, when class achievement score in English is considered as covariate.

3.4.0 ANALYSIS AND INTERPRETATION OF "FUNNY, BUNNY"

The following is an analysis of the effectiveness of CALM in different modes prepared on **"Funny, Bunny".**

Table-2.4.1 : Summary of ANCOVA for Achievement on the Word meaning test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	37.619	9.404	
WITHIN	93	147.018	1.580	**5.949 ***
TOTAL	97	184.637	10.984	

*** significant at 0.01 level**

Table 2.4.1 reveals that the adjusted F-value for different modes of learning through computer is 5.949, which is significant at 0.01 level with df equal to 4/93. It shows that different modes have effect on Word meaning differently, when class achievement test score in English language is considered as a covariate. In light of this, the null hypothesis that the adjusted mean achievement score on Word meaning (lexicon) of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as covariate is rejected. It is evident that the mean achievement scores of students on Word meaning (Lexicon) through different modes differ significantly when class achievement score in English is considered as a covariate. In order to find out which pair of adjusted mean differ significantly, the data were further analysed through t-test (Table 2.4.2).

Table-3.4.2 : Groupwise adjusted mean and t-value on Word meaning.

GROUP	ADJUSTED MEAN	T	GT	TM	GTM	GTMR
T	3.099		**2.643 ****	1.131	**2.368 ****	1.523
GT	2.034			1.526	0.305	**4.147 ***
TM	2.649				1.238	**2.655 ****
GTM	2.157					**3.892 ***
GTMR	3.705					

*** Significant at 0.01 level**

**** Significant at 0.05 level**

Table-3.4.2 shows that the t-value between T (Text) and GT (Graphics Text) mode is 2.643, which is significant at 0.05 level with df 37. It is evident that the adjusted mean achievement score on Word meaning by the students learning on computer through Text and Graphics Text modes differ significantly. The adjusted mean achievement through the Text mode (3.099) is significantly higher than the adjusted mean achievement Graphics Text mode (2.034) on Word meaning.

The t-value between T (Text) and GTM (Graphics Text Music) mode is 2.368, which is significant at 0.05 level with df 38. It is evident that the adjusted mean achievement score on Word meaning by the students learning on computer through Text and Graphics Text Music modes differ significantly. The adjusted mean achievement through the Text mode (3.099) is significantly higher than the adjusted mean achievement Graphics Text Music mode (2.157) on Word meaning.

The t-value between GT (Graphics Text) and GTMR (Graphics Text Music Recitation) mode is 4.147, which is significant at 0.01 level with df 37. It is evident that the adjusted mean achievement score on Word meaning by the students learning on computer through Graphics Text and Graphics Text Music Recitation modes differ significantly The adjusted mean achievement through the Graphics Text Music Recitation

mode (3.705) is significantly higher than the adjusted mean achievement Graphics Text mode (2.034) on Word meaning.

The t-value between TM (Text Music) and GTMR (Graphics Text Music Recitation) mode is 2.655, which is significant at 0.05 level with df 38 It is evident that the adjusted mean achievement score on Word meaning by the students learning on computer through Text Music and Graphics Text Music Recitation modes differ significantly. The adjusted mean achievement through the Graphics Text Music Recitation mode (3.705) is significantly higher than the adjusted mean achievement Text Music mode (2.649) on Word meaning

The t-value between GTM (Graphics Text Music) and GTMR (Graphics Text Music Recitation) mode is 3.892, which is significant at 0 01 level with df 38. It is evident that the adjusted mean achievement score on Word meaning by the students learning on computer through Graphics Text Music and Graphics Text Music Recitation modes differ significantly. The adjusted mean achievement through the Graphics Text Music Recitation mode (3.705) is significantly higher than the adjusted mean achievement Graphics Text Music mode (2 157) on Word meaning.

Table 3.4.3 : Summary of ANCOVA for Achievement on the Analytical Understanding test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	496.736	124.184	
WITHIN	95	1804.540	18.995	**6.537** *
TOTAL	99	2301.276	143.179	

*** significant at 0.01 level**

Table 3.4 3 reveals that the adjusted F-value for different modes of learning through computer is 6 537, which is significant at 0 01 level with df equal to 4/95 It shows that different modes have effect on Analytical Understanding of the students differently when class achievement test score in English language is considered as a covariate. In light of

this, the null hypothesis that the adjusted mean achievement score on Analytical Understanding of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as covariate is rejected. In the light of this, the null hypothesis that the mean achievement scores of students on Analytical Understanding, through different modes differ significantly when class achievement score in English is considered as a covariate In order to find out which pair of adjusted mean differ significantly, the data were further analysed through t-test (Table 3.4.4).

Table-3.4.4 : Groupwise adjusted mean and t-value on Analytical Understanding.

GROUP	ADJUSTED MEAN	T	GT	TM	GTM	GTMR
T	7.042		**2.869 ***	**4.726 ***	**3.865 ***	2.201
GT	10.902			1.929	1.031	0.632
TM	13.564				0.900	0.203
GTM	12.307					1.644
GTMR	10.040					

*** Significant at 0.01 level**

Table-3.4.4 shows that the t-value between T (Text) and GT (Graphics Text) mode is 2.869, which is significant at 0.01 level with df 40. It is evident that the adjusted mean achievement score on Analytical Understanding by the students learning on computer through Text and Graphics Text modes differ significantly. The adjusted mean achievement through the Graphics Text mode (10 902) is significantly higher than the adjusted mean achievement Text mode (7.042) on Analytical Understanding

The t-value between T (Text) and TM (Text Music) mode is 4 726, which is significant at 0.01 level with df 38 It is evident that the adjusted mean achievement score on Analytical Understanding by the students learning on computer through Text Music and Text modes differ significantly The adjusted mean achievement through the Text Music mode

(13 564) is significantly higher than the adjusted mean achievement Text mode (7 042) on Analytical Understanding.

The t-value between T (Text) and GTM (Graphics Text Music) mode is 3 865, which is significant at 0.01 level with df 39. It is evident that the adjusted mean achievement score on Analytical Understanding by the students learning on computer through Text and Graphics Text Music modes differ significantly. The adjusted mean achievement through the Graphics Text Music mode (12.307) is significantly higher than the adjusted mean achievement Text mode (7.042) on Analytical Understanding.

Table-3.4.5 : Summary of ANCOVA for Achievement on the Comprehensive Understanding test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	240.365	60.091	
WITHIN	95	591.273	6.223	**9.654 ***
TOTAL	99	831.638	66.314	

*** significant at 0.01 level**

Table 3.4.5 reveals that the adjusted F-value for different modes of learning through computer is 9.654, which is significant at 0.01 level with df equal to 4/95. It shows that different modes have effect on Comprehensive Understanding differently, when class achievement test in English language is considered as a covariate. In light of this, the null hypothesis that the adjusted mean achievement score on Comprehensive Understanding of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as covariate is rejected. It is evident that the mean achievement scores of students on Comprehensive Understanding through different modes differ significantly when class achievement score in English language is considered as a covariate In order to find out which pair of adjusted mean differ significantly, the data were further analysed through t-test (Table 3 4 6).

Table-3.4.6 : Groupwise adjusted mean and t-value on Comprehensive Understanding

GROUP	ADJUSTED MEAN	T	GT	TM	GTM	GTMR
T	1.403		2 694	**3.112 ***	**4.462 ***	**5.945 ***
GT	3.477			0.486	1.801	**3.284 ***
TM	3.861				1 276	**2.722 ***
GTM	4.882					1 464
GTMR	6.037					

*** Significant at 0.01 level**

Table 3.4.6 The t-value between T (Text) and TM (Text Music) mode is 3 112, which is significant at 0.01 level with df 38. It is evident that the adjusted mean achievement score on Comprehensive Understanding by the students learning on computer through Text and Text Music modesdiffer significantly. The adjusted mean achievement through the Text Music mode (3.861) is significantly higher than the adjusted mean achievement Text mode (1.403) on Comprehensive Understanding.

The t-value between T (Text) and GTM (Graphics Text Music) mode is 4.462, which is significant at 0.01 level with df 39. It is evident that the adjusted mean achievement score on Comprehensive Understanding by the students learning on computer through Text and Graphics Text Music modes differ significantly. The adjusted mean achievement through the Graphics Text Music mode (4.882) is significantly higher than the adjusted mean achievement Text mode (1.403) on Comprehensive Understanding.

The t-value between T (Text) and GTMR (Graphics Text Music Recitation) mode is 5.945, which is significant at 0.01 level with df 39. It is evident that the adjusted mean achievement score on Comprehensive Understanding of the students learning on computer through Text and Graphics Text Music Recitation modes differ significantly. The adjusted mean achievement through the Graphics Text Music Recitation mode (6 037) is significantly higher than the adjusted mean achievement Text mode (1 403) on Comprehensive Understanding.

The t-value between GT (Graphics Text) and GTMR (Graphics Text Music Recitation) mode is 3.284, which is significant at 0.01 level with df 39. It is evident that the adjusted mean achievement score on Comprehensive Understanding of the students learning on computer through Graphics Text and Graphics Text Music Recitation modes differ significantly. The adjusted mean achievement through the Graphics Text Music Recitation mode(6.037) is significantly higher than the adjusted mean achievement GT (Graphics Text) mode (3 477) on Comprehensive Understanding.

The t-value between TM (Text Music) and GTMR (Graphics Text Music Recitation) mode is 2.722, which is significant at 0.01 level with df 37. It is evident that the adjusted mean achievement score on Comprehensive Understanding of the students learning on computer through Text Music and Graphics Text Music Recitation modes differ significantly The adjusted mean achievement through the Graphics Text Music Recitation mode (6 037) is significantly higher than the adjusted mean achievement Text Music mode (3.861) on Comprehensive Understanding.

Table-3.4.7 : Summary of ANCOVA for Achievement on the Writing test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	51.110	12.777	
WITHIN	95	392.108	4.216	**3.030 ***
TOTAL	99	443.218	16.993	

*** significant at 0.01 level**

Table 3.4 7 reveals that the adjusted F-value for different modes of learning through computer on Writing is 3.030, which is significant at 0.05 level with df equal to 4/95. It shows that different modes have effect on Writing differently when class achievement test score in English language is a considered as covariate. In light of this, the null hypothesis that the adjusted mean achievement score on Writing of the students

belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as covariate is rejected It is evident that, the mean achievement scores of students on Writing through different modes differ significantly when class achievement score in English is considered as a covariate. In order to find out which pair of adjusted mean differ significantly, the data were further analysed through t-test (Table 3.4.8).

Table-3.4.8 : Groupwise adjusted mean and t-value on Writing.

GROUP	ADJUSTED MEAN	T	GT	TM	GTM	GTMR
T	6.919		**2.625 ****	0.115	**2.188 ****	**2.076 ****
GT	8.646			**2.511 ****	0.465	0 575
TM	6.994				**2.072 ****	1.961
GTM	8.340					0.111
GTMR	8.268					

*** * Significant at 0.05 level**

Table-3.4.8 shows that the t-value between T (Text) and GT (Graphics Text) mode is 2.625, which is significant at 0.05 level with df 37. It is evident that the adjusted mean achievement score on Writing by the students learning on computer through Text and Graphics Text Music modes differ significantly. The adjusted mean achievement through the Graphics Text mode (8.646) is significantly higher than the adjusted mean achievement Text mode (6.919) on Writing.

The t-value between T (Text) and GTM (Graphics Text Music) mode is 2.188, which is significant at 0.05 level with df 38. It is evident that the adjusted mean achievement score on Writing by the students learning on computer through Text and Graphics Text Music modes differ significantly. The adjusted mean achievement through the Graphics Text Music mode (8.340) is significantly higher than the adjusted mean achievement Text mode (6 919) on Writing.

The t-value between T (Text) and GTMR (Graphics Text Music Recitation) mode is 2 076, which is significant at 0 05 level with df 38 It is evident that the adjusted mean

achievement score on Writing by the students learning on computer through Text and Graphics Text Music Recitation modes differ significantly The adjusted mean achievement through the Graphics Text Music Recitation mode (8.268) is significantly higher than the adjusted mean achievement Text mode (6.919) on Writing

The t-value between GT (Graphics Text) and TM (Text Music) mode is 2.511, which is significant at 0.05 level with df 37 It is evident that the adjusted mean achievement score on Writing by the students learning on computer through Graphics Text and Text Music modes differ significantly The adjusted mean achievement through the Graphics Text mode (8.646) is significantly higher than the adjusted mean achievement Text Music mode (6.994) on Writing.

The t-value between TM (Text Music) and GTM (Graphics Text Music) mode is 2 072, which is significant at 0.05 level with df 38. It is evident that the adjusted mean achievement score on Writing by the students learning on computer through Text Music and Graphics Text Music modes differ significantly. The adjusted mean achievement through the Graphics Text Music mode (8.340) is significantly higher than the adjusted mean achievement through Text Music mode (6.994) on Writing.

Table-3.4.9 : Summary of ANCOVA for Achievement on the Recitation test by groups In the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	48.659	12.164	
WITHIN	95	269.762	2.839	**4.284 ***
TOTAL	99	318.421	15.003	

*** significant at 0.01 level**

Table 3 4 9 reveals that the adjusted F-value for different modes of learning through computer is 4 284, which is significant at 0 01 level with df equal to 4/95 It shows that different modes have effect on Recitation differently, when class achievement test in English

language is considered as covariate In light of this, the null hypothesis that the adjusted mean achievement score on Recitation of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as covariate is rejected It is evident that the mean achievement scores of students on Recitation through different modes differ significantly when class achievement score in English language is considered as a covariate In order to find out which pair of adjusted mean differ significantly, the data were further analysed through t-test (Table 3.4.10).

Table-3.4.10 : Groupwise adjusted mean and t-value on Recitation.

GROUP	ADJUSTED MEAN	T	GT	TM	GTM	GTMR
T	3.848		2.163	**3.490 ***	2 592	**3.634 ***
GT	4.974			1.382	0 454	1.497
TM	5.711				0.922	0.094
GTM	5.213					1.030
GTMR	5.762					

*** Significant at 0.01 level**

Table 3.4.10 shows that the t-value between T (Text) and TM (Text Music) mode is 3.490, which is significant at 0.01 level with df 38. It is evident that the adjusted mean achievement score on Recitation by the students learning on computer through Text and Text Music modes differ significantly. The adjusted mean achievement through the Text Music mode (5.711) is significantly higher than the adjusted mean achievement through Text (3.848) mode on Recitation.

The t-value between and T (Text) and GTMR (Graphics Text Music Recitation) mode is 3 634, which is significant at 0.01 level with df 39 It is evident that the adjusted mean achievement score on Recitation by the students learning on computer through Text and Graphics Text Music Recitation modes differ significantly The adjusted mean

achievement through the Graphics Text Music Recitation mode (5 762) is significantly higher than the adjusted mean achievement through Text mode (3 848) on Recitation

Table-3.4.11 : Summary of ANCOVA for Achievement on the Language Learning test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	1887.876	471.969	
WITHIN	95	6456.545	67.963	**6.944** *
TOTAL	99	8344.421	539 932	

*** significant at 0.01 level**

Table 3.4.11 reveals that the adjusted F-value for different modes of learning through computer on language is 6.944, which is significant at 0.01 level with df equal to 4/95. It shows that different modes have effect on Language learning differently, when class achievement test in English language is considered as covariate. In light of this the null hypothesis that the adjusted mean achievement score on Language learning of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as covariate is rejected. It is evident that the mean achievement scores of students on Recitation through different modes differ significantly when class achievement score in English language is considered as a covariate. In order to find out which pair of adjusted mean differ significantly the data were further analysed through t-test (Table 3.4.12).

Table-3.4.12 : Groupwise adjusted mean and t-value on Language Learning.

GROUP	ADJUSTED MEAN	T	GT	TM	GTM	GTMR
T	21 274		2.563	**3.887 ***	**4.610 ***	**4.075 ***
GT	27.795			1.389	2.078	1 543
TM	31.422				0.653	0.132
GTM	33 149					0 528
GTMR	31.772					

*** Significant at 0.01 level**

Table 3.4.12 shows that the t-value between T (Text) and TM (Text Music) mode is 3.887, which is significant at 0.01 level with df 38. It is evident that the adjusted mean achievement score on Language learning by the students learning on computer through Text and Text Music modes differ significantly. The adjusted mean achievement through the Text Music mode (31.422) is significantly higher than the adjusted mean achievement through Text mode (21.274) on Language learning.

The t-value between T (Text) and GTM (Graphics Text Music) mode is 4.610, which is significant at 0.01 level with df 39. It is evident that the adjusted mean achievement score on Language learning by the students learning on computer through Text and Graphics Text Music modes differ significantly. The adjusted mean achievement through the Graphics Text Music mode (33.149) is significantly higher than the adjusted mean achievement Text mode (21.274) on Language learning.

The t-value between T (Text) and GTMR (Graphics Text Music Recitation) mode is 4.075, which is significant at 0.01 level with df 39 It is evident that the adjusted mean achievement score on Language learning by the students learning on computer through Text and Graphics Text Music Recitation modes differ significantly The adjusted mean

achievement through the Graphics Text Music Recitation mode (31 772) is significantly higher than the adjusted mean achievement Text mode (21.274) on Language learning

3.4.1 FINDINGS

(1) The adjusted mean achievement score of the students on Word meaning through different mode differ significantly when class achievement score in English is considered as a covariate.

(2) The adjusted mean achievement score of the students on Analytical Understanding through different mode differ significantly when class achievement score in English is considered as a covariate.

(3) The adjusted mean achievement score of the students on Comprehension Understanding through different mode differ significantly when class achievement score in English is considered as a covariate.

(4) The adjusted mean achievement score of the students on Writing through different mode differ significantly when class achievement score in English is considered as a covariate.

(5) The adjusted mean achievement score of the students on Recitation through different mode differ significantly when class achievement score in English is considered as a covariate.

(6) The adjusted mean achievement score of the students on Language learning through different mode differ significantly when class achievement score in English is considered as a covariate.

(7) The adjusted mean achievement score of the students on Text mode is significantly higher than the adjusted mean achievement score of those students on Graphics Text mode when class achievement score is considered as a covariate on Word meaning.

(8) The adjusted mean achievement score of the students on Text mode is significantly higher than the adjusted mean achievement score of those students on Graphics Text Music mode when class achievement score is considered as a covariate on Word meaning.

(9) The adjusted mean achievement score of the students on Graphics Text Music Recitation mode is significantly higher than the adjusted mean achievement score of those students on Graphics Text mode when class achievement score is considered as a covariate on Word meaning

(10) The adjusted mean achievement score of the students on Graphics Text Music Recitation mode is significantly higher than the adjusted mean achievement score of those students on Text Music mode when class achievement score is considered as a covariate on Word meaning.

(11) The adjusted mean achievement score of the students on Graphics Text Music Recitation mode is significantly higher than the adjusted mean achievement score of those students on Graphics Text Music mode when class achievement score is considered as a covariate on Word meaning

(12) The adjusted mean achievement score of the students on Graphics Text mode is significantly higher than the adjusted mean achievement score of those students on Text mode when class achievement score is considered as a covariate on Word meaning.

(13) The adjusted mean achievement score of the students on Text Music mode is significantly higher than the adjusted mean achievement score of those students on Text Music mode when class achievement score is considered as a covariate on Word meaning.

(14) The adjusted mean achievement score of the students on Graphics Text Music mode is significantly higher than the adjusted mean achievement score of those students on Text mode when class achievement score is considered as a covariate on Analytical Understanding.

(15) The adjusted mean achievement score of the students on Text Music mode is significantly higher than the adjusted mean achievement score of those students on Text mode when class achievement score is considered as a covariate on Comprehensive Understanding

(16) The adjusted mean achievement score of the students on Graphics Text Music mode is significantly higher than the adjusted mean achievement score of those students on Text mode when class achievement score is considered as a covariate on Comprehensive Understanding

(17) The adjusted mean achievement score of the students on Graphics Text Music Recitation mode is significantly higher than the adjusted mean achievement score of those students on Text mode when class achievement score is considered as a covariate on Comprehensive Understanding.

(18) The adjusted mean achievement score of the students on Graphics Text Music Recitation mode is significantly higher than the adjusted mean achievement score of those students on Graphics Text mode when class achievement score is considered as a covariate on Comprehensive Understanding.

(19) The adjusted mean achievement score of the students on Graphics Text Music Recitation mode is significantly higher than the adjusted mean achievement score of those students on Text Music mode when class achievement score is considered as a covariate on Comprehensive Understanding.

(20) The adjusted mean achievement score of the students on Graphics Text Music mode is significantly higher than the adjusted mean achievement score of those students on Text mode when class achievement score is considered as a covariate on Writing.

(21) The adjusted mean achievement score of the students on Graphics Text Music mode is significantly higher than the adjusted mean achievement score of those students on Graphics Text mode when class achievement score is considered as a covariate on Writing.

(22) The adjusted mean achievement score of the students on Graphics Text Music mode is significantly higher than the adjusted mean achievement score of those students on Text Music mode when class achievement score is considered as a covariate on Writing.

(23) The adjusted mean achievement score of the students on Graphics Text Music Recitation mode is significantly higher than the adjusted mean achievement score of those students on Text Music mode when class achievement score is considered as a covariate on writing.

(24) The adjusted mean achievement score of the students on Text Music mode is significantly higher than the adjusted mean achievement score of those students on Text mode when class achievement score is considered as a covariate on Recitation

(25) The adjusted mean achievement score of the students on Graphics Text Music Recitation mode is significantly higher than the adjusted mean achievement score of those students on Text mode when class achievement score is considered as a covariate on Recitation.

(26) The adjusted mean achievement score of the students on Text Music mode is significantly higher than the adjusted mean achievement score of those students on Text mode when class achievement score is considered as a covariate on Language learning.

(27) The adjusted mean achievement score of the students on Graphics Text Music mode is significantly higher than the adjusted mean achievement score of those students on Text mode when class achievement score is considered as a covariate on Language learning.

(28) The adjusted mean achievement score of the students on Graphics Text Music Recitation mode is significantly higher than the adjusted mean achievement score of those students on Text mode when class achievement score is considered as a covariate on Language learning.

3.5.0 ANALYSIS AND INTERPRETATION OF "JOHNY, JOHNY"

The following is an analysis of the effectiveness of CALM in different modes prepared on **"Johny, Johny"**..

Table-3.5.1 : Summary of ANCOVA for Achievement on the Word meaning test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSS.Y	FY.X
AMONG	4	9.920	2.480	
WITHIN	90	115.025	1.278	1 940
TOTAL	94	124.945	3 758	

Table 3.5.1 reveals that the adjusted F-value for different modes of learning through computer is 1.940, which is not significant at 0.05 level with df equal to 4/90. It shows that different modes do not affect Word meaning differently, when class achievement test score in English language is considered as a covariate. In light of this, the null hypothesis that the adjusted mean achievement score on Word meaning of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as a covariate is not rejected. It is evident that the mean achievement scores of students on Word meaning through different modes do not differ significantly when class achievement score in English language is considered as a covariate.

Table-3.5.2 : Summary of ANCOVA for Achievement on the Analytical understanding test by groups in the T, GT, MT, GTM, and GTMR modes

SOURCE OF VARIANCE	df	SSY.X	MSS.Y	FY.X
AMONG	4	27.560	6.890	
WITHIN	90	659.719	7 330	0 940
TOTAL	94	687 279	14.330	

Table 3.5 2 reveals that the adjusted F-value for different modes of learning through computer is 0.940, which is not significant at 0.05 level with df equal to 4/90. It shows that different modes do not affect Analytical Understanding differently, when class achievement test score in English language is considered as a covariate In light of this, the null hypothesis that the adjusted mean achievement score on Analytical Understanding of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as a covariate is not rejected. It is evident that the mean achievement scores of students on Analytical Understanding through different modes do not differ significantly when class achievement score in English language is considered as a covariate.

Table-3.5.3 : Summary of ANCOVA for Achievement on the Comprehensive Understanding test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSS.Y	FY.X
AMONG	4	62 684	15 671	
WITHIN	90	784.904	8.721	1 796
TOTAL	94	847.588	24.392	

Table 3.5.3 reveals that the adjusted F-value for different modes of learning through computer is 1.796, which is not significant at 0.05 level with df equal to 4/90. It shows that different modes do not effect Comprehensive Understanding differently when class achievement test score in English language is considered as a covariate. In light of this, the null hypothesis that the adjusted mean achievement score on Comprehensive Understanding of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as a covariate is not rejected. It is evident that the mean achievement scores of students on Comprehensive Understanding through different modes do not differ significantly when class achievement score in English language is considered as a covariate.

Table-3.5.4 : Summary of ANCOVA for Achievement on the Writing test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSS.Y	FY.X
AMONG	4	32 516	8 129	
WITHIN	90	402.891	4.476	1.815
TOTAL	94	435.407	12.605	

Table 3.5.4 reveals that the adjusted F-value for different modes of learning through computer is 1.815, which is not significant at 0.05 level with df equal to 4/90. It shows that different modes do not affect Writing differently, when class achievement test score in English language is considered as a covariate. In light of this, the null hypothesis that the adjusted mean achievement score on Writing of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as a covariate is not rejected. It is evident that the mean achievement scores of students on Writing through different modes do not differ significantly when class achievement score in English language is considered as a covariate.

Table-3.5.5 : Summary of ANCOVA for Achievement on the Recitation test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSS.Y	FY.X
AMONG	4	4 103	1.025	
WITHIN	90	337.262	3.747	0.273
TOTAL	94	341.365	4.772	

Table 3.5.5 reveals that the adjusted F-value for different modes of learning through computer is 0.273, which is not significant at 0 05 level with df equal to 4/90. It shows that different modes do not affect Recitation differently, when class achievement test score in English language is considered as a covariate. In light of this, the null hypothesis that the adjusted mean achievement score of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as a covariate is not rejected. It is evident that the mean achievement scores of students on Recitation through different modes do not differ significantly when class achievement score in English language is considered as a covariate

Table-3.5.6 : Summary of ANCOVA for Achievement on the Language Learning test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSS.Y	FY.X
AMONG	4	36.685	9 171	
WITHIN	90	4600.707	51.119	0 179
TOTAL	94	4637.393	60 290	

Table 3.5.6 reveals that the adjusted F-value for different modes of learning through computer is 0.179, which is not significant at 0.05 level with df equal to 4/90. It shows that different modes do not affect on Language learning of the students differently, when class achievement test score in English language is considered as a covariate. In light of this the null hypothesis that the adjusted mean achievement score of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as a covariate is not rejected It is evident that, the mean achievement scores of students on Language learning through different modes do not differ significantly when class achievement score in English language is considered as a covariate.

3.5.2 FINDINGS

(1) The adjusted mean achievement score of the students on Word meaning through different modes do not differ significantly when class achievement score in English is considered as covariate.

(2) The adjusted mean achievement score of the students on Analytical understanding through different modes do not differ significantly when class achievement score in English is considered as covariate

(3) The adjusted mean achievement score of the students on Comprehensive understanding through different modes do not differ significantly when class achievement score in English is considered as covariate

(4) The adjusted mean achievement score of the students on Writing through different modes do not differ significantly when class achievement score in English is considered as covariate.

(5) The adjusted mean achievement score of the students on Recitation through different modes do not differ significantly when class achievement score in English is considered as covariate.

(6) The adjusted mean achievement score of the students on Language learning through different modes do not differ significantly, when class achievement score in English is considered as covariate.

3.6.0 ANALYSIS AND INTERPRETATION OF "BUTTERFLY, BUTTERFLY"

The following is an analysis of the effectiveness of CALM in different modes prepared on **"Butterfly, Butterfly".**

Table-3.6.1 : Summary of ANCOVA for Achievement on the Word meaning test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY X	MSSY.X	FY X
AMONG	4	11.323	2 830	
WITHIN	88	148.390	1.686	1.678
TOTAL	92	159 713	4.516	

Table 3.6.1 reveals that the adjusted F-value for different modes of learning through computer is 1.678, which is not significant at 0 05 level with df equal to 4/88. It shows that different modes do not affect on Word meaning differently, when class achievement test in English language is considered as a covariate. In light of this, the null hypothesis that the adjusted mean achievement score on Word meaning of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as a covariate is not rejected. It is evident that the mean achievement scores of students on Word meaning through different modes do not differ significantly when class achievement score in English language is considered as a covariate.

Table-3.6.2 : Summary of ANCOVA for Achievement on the Analytical understanding test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY X
AMONG	4	32.483	8.120	
WITHIN	88	369.793	4.202	1.932
TOTAL	92	402.276	12.322	

Table 3.6.2 reveals that the adjusted F-value for different modes of learning through computer is 1.932, which is not significant at 0.05 level with df equal to 4/88 It shows that different modes do not affect on Analytical Understanding differently, when class achievement test in English language is considered as a covariate In light of this, the null hypothesis that the adjusted mean achievement score on Analytical Understanding of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as a covariate is not rejected. It is evident that the mean achievement scores of students on Analytical Understanding through different modes do not differ significantly when class achievement score in English language is considered as a covariate.

Table-3.6.3 : Summary of ANCOVA for Achievement on the Comprehensive Understanding test by groups in the T, GT, MT, GTM, and GTMR modes

SOURCE OF VARIANCE	df	SSY.X	MSSY X	FYX
AMONG	4	121 505	30 376	
WITHIN	88	800 631	9 098	**3.338 ****
TOTAL	92	922.136	39 474	

**** Significant at 0.05 level.**

Table 3.6.3 reveals that the adjusted F-value for different modes of learning through computer is 3.338, which is significant at 0.05 level with df equal to 4/88 It shows that different modes have effect on Comprehensive Understanding differently, when class achievement test in English language is considered as a covariate In light of this, the null hypothesis that the adjusted mean achievement score on Comprehensive Understanding of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as a covariate is rejected In order to find out which pair of adjusted mean differ significantly, the data were further analysed through t-test (Table 3.6.4)

Table 3.6.4: Groupwise adjusted mean and t-value on Comprehension Understanding

GROUP	ADJUSTED MEAN	T	GT	TM	GTM	GTMR
T	2.837		**3.381 ***	1.698	**2.576 ****	**2.843 ***
GT	6.192			1.749	0 858	0 451
TM	4.501				0 902	1.242
GTM	5.362					0.377
GTMR	5.737					

* Significant at 0.01 level.
** Significant at 0.05 level.

Table 3.6.4 shows that the t-value between T (Text) and GT (Graphics Text) mode is 3.381, which is significant at 0.01 level with df 35. It is evident that the adjusted mean achievement score on Comprehension understanding by the students learning on computer through Text and Graphics Text modes differ significantly. The adjusted mean achievement through the Graphics Text mode (6.192) is significantly higher than the adjusted mean achievement through Text mode (2.837) on Comprehensive understanding.

The t-value between T (Text) and GTM (Graphics Text Music) mode is 2.576, which is significant at 0.05 level with df 36 It is evident that the adjusted mean achievement score on Comprehension understanding by the students learning on computer through Text and Graphics Text Music modes differ significantly. The adjusted mean achievement through the Graphics Text Music mode (5.362) is significantly higher than the adjusted mean achievement through Text mode (2.837) on Comprehensive understanding

The t-value between T (Text) and GTMR (Graphics Text Music) mode is 2 843, which is significant at 0.01 level with df 36. It is evident that the adjusted mean achievement score on Comprehension understanding by the students learning on computer through Text and Graphics Text Music modes differ significantly The adjusted mean achievement through the Graphics Text Music Recitation mode (5.737) is significantly higher than the adjusted mean achievement through Text mode (2 837) on Comprehensive understanding

Table-3.6.5 : Summary of ANCOVA for Achievement on the Writing test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY X	FY.X
AMONG	4	15 671	3 917	
WITHIN	88	287 007	3 261	1 201
TOTAL	92	302.678	7.178	

Table 3 6.5 reveals that the adjusted F-value for different modes of learning through computer is 1.201, which is not significant at 0 05 level with df equal to 4/88 It shows that different modes do not affect on Writing differently, when class achievement test in English language is considered as a covariate: In light of this, the null hypothesis that the adjusted mean achievement score on Writing of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as a covariate is not rejected. It is evident that the mean achievement scores of students on Writing through different modes do not differ significantly when class achievement score in English language is considered as a covariate

Table-3.6.6 : Summary of ANCOVA for Achievement on the Recitation test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	22.513	5.628	
WITHIN	88	388 895	4.419	1.276
TOTAL	92	411.408	10.047	

Table 3.6.6 reveals that the adjusted F-value for different modes of learning through computer is 1.276, which is not significant at 0.05 level with df equal to 4/88. It shows that different modes do not affect on Recitation differently, when class achievement test in English language is considered as a covariate. In light of this the null hypothesis that the of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is a considered as a covariate is not rejected. It is evident that the mean achievement scores of students on Recitation through different modes do not differ significantly when class achievement score in English language is considered as a covariate.

Table-3.6.7 : Summary of ANCOVA for Achievement on the Language Learning test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	403.925	100 981	
WITHIN	88	4503.208	51.172	1.973
TOTAL	92	4907.133	152.153	

Table 3.6.7 reveals that the adjusted F-value for different modes of learning through computer is 1.973, which is not significant at 0.05 level with df equal to 4/88. It shows that different modes do not affect on Language learning differently, when class achievement test in English language is considered as a covariate. In light of this, the null hypothesis that the of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as a covariate is not rejected. It is evident that the mean achievement scores of students on Language learning through different modes do not differ significantly when class achievement score in English language is considered as a covariate

3.6.1 FINDINGS

(1) The adjusted mean achievement score of the students on Word meaning through different modes do not differ significantly when class achievement score is considered as covariate.

(2) The adjusted mean achievement score of the students on Analytical understanding through different modes do not differ significantly when class achievement score is considered as covariate.

(3) The adjusted mean achievement score of the students on Comprehension understanding through different modes differ significantly when class achievement score is considered as covariate

(4) The adjusted mean achievement score of the students on Writing through different modes do not differ significantly, when class achievement score is considered as covariate

(5) The adjusted mean achievement score of the students on Recitation through different modes do not differ significantly when class achievement score is considered as covariate

(6) The adjusted mean achievement score of the students on Language learning through different modes do not differ significantly when class achievement score is considered as covariate.

(7) The adjusted mean achievement score of the students on Graphics Text mode is significantly higher than the adjusted mean achievement through Text mode, when class achievement score in English is considered as covariate on Comprehensive understanding.

(8) The adjusted mean achievement score of the students on Graphics Text Music mode is significantly higher than the adjusted mean achievement through Text mode, when class achievement score in English is considered as covariate on Comprehensive understanding.

(9) The adjusted mean achievement score of the students on Graphics Text Music Recitation mode is significantly higher than the adjusted mean achievement through Text mode, when class achievement score in English is considered as covariate on Comprehensive understanding.

3.7.0 ANALYSIS AND INTERPRETATION OF "BAA, BAA, BLACK SHEEP"

The following is an analysis of the effectiveness of CALM in different modes prepared on **"Baa, Baa, Black Sheep"**.

Table-3.7.1 : Summary of ANCOVA for Achievement on the Word meaning test by groups in the T, GT, MT, GTM, and GTMR modes

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	39.344	9.836	
WITHIN	91	145.067	1.594	**6.170 ***
TOTAL	95	184.411	11.430	

* Significant at 0.01 level

Table 3.7.1 reveals that the adjusted F-value for different modes of learning through computer is 6.170, which is significant at 0.01 level with df equal to 4/91. It shows that different modes have effect on Word meaning differently when class achievement test score in English language is considered as a covariate. In light of this, the null hypothesis that the adjusted mean achievement score on word meaning (lexicon) of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as covariate is rejected. In order to find out which pair of adjusted mean differ significantly, the data were further analysed through t-test (Table 3.7 2).

Table-3.7.2 : Groupwise adjusted mean and t-value on Word meaning (Lexicon).

GROUP	ADJUSTED MEAN	T	GT	TM	GTM	GTMR
T	4.108		**2.561 ****	0 837	1.510	1.904
GT	3 085			**3.398 ****	**4.072 ***	**4.360 ***
TM	4.442				0.673	1 102
GTM	4.711					0.456
GTMR	4.901					

*** Significant at 0.01 level**

**** Significant at 0.05 level**

Table 3.7.2 shows that the t-value between T (Text) and GT (Graphics Text) mode is 2 561 which is significant at 0.05 level with df 38. It is evident that the adjusted mean achievement score on Word meaning (lexicon) by the students learning on computer through Text and Graphics Text modes differ significantly. The adjusted mean achievement through the Text mode (4.108) is significantly higher than the adjusted mean achievement through Graphics Text mode (3.085) in Word meaning (lexicon).

The t-value between GT (Graphics Text) and TM (Text Music) mode is 3.398 which is significant at 0.05 level with df 38. It is evident that the adjusted mean achievement score on Word meaning (lexicon) by the students learning on computer through Graphics Text and Text Music modes differ significantly The adjusted mean achievement through the Text Music mode (4.442) is significantly higher than the adjusted mean achievement through Graphics Text mode (3.085) in Word meaning (lexicon)

The t-value between GT (Graphics Text) and GTM (Graphics Text Music) mode is 4.072, which is significant at 0.01 level with df 38. It is evident that the adjusted mean achievement score on Word meaning (lexicon) by the students learning on computer through Graphics Text and Graphics Text Music modes differ significantly The adjusted mean achievement through the Graphics Text Music mode (4 711) is significantly higher

than the adjusted mean achievement through Graphics Text mode (3 085) on Word meaning (lexicon)

The t-value between GT (Graphics Text) and GTMR (Graphics Text Music Recitation) mode is 4 360, which is significant at 0 01 level with df 38 It is evident that the adjusted mean achievement score on Word meaning (lexicon) by the students learning on computer through Graphics Text and Graphics Text Music Recitation modes differ significantly The adjusted mean achievement through the Graphics Text Music Recitation mode (4.901) is significantly higher than the adjusted mean achievement through Graphics Text mode (3 085) on Word meaning (lexicon).

Table-3.7.3 : Summary of ANCOVA for Achievement on the Analytical understanding test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	39.843	9.960	
WITHIN	91	264.517	2.906	**3.426 ****
TOTAL	95	304.360	12.866	

* Significant at 0.05 level.

Table 3.7.3 reveals that the adjusted F-value for different modes of learning through computer is 3.426, which is significant at 0 05 level with df equal to 4/94. It shows that different modes have effect on Analytical Understanding differently, when class achievement test score in English language is considered as a covariate. In light of this, the null hypothesis that the adjusted mean achievement score on Analytical Understanding of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as covariate is rejected In order to find out which pair of adjusted mean differ significantly, the data were further analysed through t-test (Table 3.7 4)

Table-3.7.4 : Groupwise adjusted mean and t-value on Analytical Understanding.

GROUP	ADJUSTED MEAN	T	GT	TM	GTM	GTMR
T	4.804		0 792	2 385	**2.588 ****	**3.259 ****
GT	5.231			1 593	1 796	2 500
TM	6.090				0 203	0 973
GTM	6.200					0 778
GTMR	6.637					

**** Significant at 0.05 level**

Table 3.7.4 shows that the t-value between T (Text) and GTM (Graphics Text Music) mode is 2.588, which is significant at 0.05 level with df 38. It is evident that the adjusted mean achievement score on Analytical Understanding by the students learning on computer through Text and Graphics Text Music modes differ significantly. The adjusted mean achievement through the Graphics Text Music mode (6.200) is significantly higher than the adjusted mean achievement through Text mode (4.804) on Analytical Understanding.

The t-value between T (Text) and GTMR (Graphics Text Music Recitation) mode is 3.259, which is significant at 0.05 level with df 38. It is evident that the adjusted mean achievement score on Analytical Understanding by the students learning on computer through Text and Graphics Text Music Recitation modes differ significantly The adjusted mean achievement through the Graphics Text Music Recitation mode (6.637) is significantly higher than the adjusted mean achievement through Text mode (4 804) on Analytical Understanding

Table-3.7.5 : Summary of ANCOVA for Achievement on the Comprehensive Understanding test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	116 688	29 167	
WITHIN	91	830 240	9 123	**3.196 ****
TOTAL	95	976.928	38 290	

*** Significant at 0.05 level**

Table 3.7.5 reveals that the adjusted F-value for different modes of learning through computer is 3.196, which is significant at 0.05 level with df equal to 4/91. It shows that different modes have effect on Comprehensive Understanding of the students differently, when class achievement test in English language is considered as a covariate. In light of this, the null hypothesis that the adjusted mean achievement score on comprehensive understanding of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as covariate is rejected. It is evident that the mean achievement scores of students on Comprehensive Understanding through different modes differ significantly when class achievement score in English language is considered as a covariate. In order to find out which pair of adjusted mean differ significantly, the data were further analysed through t-test (Table 3 7.6).

Table-3.7.6 : Groupwise adjusted mean and t-value on Comprehensive understanding.

GROUP	ADJUSTED MEAN	T	GT	TM	GTM	GTMR
T	**2.241**		1.713	0.625	**3.273** **	0 729
GT	**3.878**			1.088	1 584	0.913
TM	**2.383**				**2.672** **	0.129
GTM	**5.391**					2.432
GTMR	**6.637**					

**** Significant at 0.05 level**

Table 3.7.6 :The t-value between T (Text) and GTM (Graphics Text Music) mode is 3.297, which is significant at 0.05 level with df 38. It is evident that the adjusted mean achievement score on Comprehensive Understanding by the students learning on computer through Text and Graphics Text Music modes differ significantly. The adjusted mean achievement through the Graphics Text Music mode (5.391) is significantly higher than the adjusted mean achievement through Text mode (2.241) on Comprehensive Understanding.

The t-value between TM (Text Music) and GTM (Graphics Text Music) mode is 2 672, which is significant at 0.05 level with df 38. It is evident that the adjusted mean achievement score on Comprehensive Understanding by the students learning on computer through Text Music and Graphics Text Music modes differ significantly. The adjusted mean achievement through the Graphics Text Music mode (5.391) is significantly higher than the adjusted mean achievement through Text Music mode (2.383) on Comprehensive Understanding.

Table-3.7.7 : Summary of ANCOVA for Achievement on the Writing test by groups in the T, GT, MT, GTM, and GTMR modes

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	21.290	5.322	
WITHIN	91	317.856	3.492	1 523
TOTAL	95	339.146	8.814	

Table 3.7.7 reveals that the adjusted F-value for different modes of learning through computer is 1.523, which is not significant at 0.05 level with df equal to 4/91. It shows that different modes do not affect Writing differently, when class achievement test in English language is considered as a covariate. In light of this, the null hypothesis that the adjusted mean achievement score on Writing of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as covariate is not rejected It is evident that the mean achievement scores of students on Writing through different modes do not differ significantly when class achievement score in English language is considered as a covariate

Table-3.7.8: Summary of ANCOVA for Achievement on the Recitation test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	22.384	5.596	
WITHIN	91	284.101	3.122	1 792
TOTAL	95	306.485	8.718	

Table 3 7.8 reveals that the adjusted F-value for different modes of learning through computer is 1.792, which is not significant at 0.05 level with df equal to 4/91. It shows that different modes do not affect Recitation differently, when class achievement test in English language is considered as a covariate In light of this, the null hypothesis that the adjusted mean achievement score on Writing of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as covariate is not rejected. It is evident that the mean achievement scores of students on Recitation through different modes do not differ significantly when class achievement score in English language is considered as a covariate.

Table-3.7.9 : Summary of ANCOVA for Achievement on the Language Learning test by groups in the T, GT, MT, GTM, and GTMR modes.

SOURCE OF VARIANCE	df	SSY.X	MSSY.X	FY.X
AMONG	4	447 096	111.774	
WITHIN	91	4123 092	45.308	**2.466 ****
TOTAL	95	4570.188	157.082	

*** * Significant at 0.05 level**

Table 3.7.9 reveals that the adjusted F-value for different modes of learning through computer is 2.466, which is significant at 0.05 level with df equal to 4/91 It shows that different modes have effect on Language learning differently, when class achievement test in English language is considered as a covariate In light of this, the null hypothesis that the adjusted mean achievement score on Language learning of the students belonging to T, GT, TM, GTM and GTMR modes will not differ significantly when class achievement test score in English language is considered as covariate is rejected In order to find out which pair of adjusted mean differ significantly, the data were further analysed through t-test (Table 3.7.10).

Table-3.7.10 : Groupwise adjusted mean and t-value on Language Learning.

GROUP	ADJUSTED MEAN	T	GT	TM	GTM	GTMR
T	26.085		0.624	0 582	2.198	1 452
GT	24.756			1 206	**2.822 ****	2.050
TM	27.325				1.615	0.893
GTM	30.764					0.654
GTMR	29.311					

**** Significant at 0.05 level**

Table 3.7.10 shows that the t-value between GT (Graphics Text) and GTM (Graphics Text Music) mode is 2.822, which is significant at 0 05 level with df 38 It is evident that the adjusted mean achievement score on Language learning by the students learning on computer through Graphics Text and Graphics Text Music modes differ significantly. The adjusted mean achievement through the Graphics Text Music mode (30.764) is significantly higher than the adjusted mean achievement through Graphics Text mode (24.756) on Language learning.

3.7.1 FINDINGS

(1) The adjusted mean achievement score of the students on Word meaning through different modes differ significantly when class achievement score in English is considered as a covariate.

(2) The adjusted mean achievement score of the students on Analytical Understanding through different modes differ significantly when class achievement score in English is considered as a covariate.

(3) The adjusted mean achievement score of the students on Comprehensive Understanding meaning through different modes differ significantly when class achievement score in English is considered as a covariate

(4) The adjusted mean achievement score of the students on Writing through different modes differ significantly when class achievement score in English is considered as a covariate

(5) The adjusted mean achievement score of the students on Recitation through different modes do not differ significantly when class achievement score in English is considered as a covariate.

(6) The adjusted mean achievement score of the students on Language learning through different modes do not differ significantly when class achievement score in English is considered as a covariate.

(7) The adjusted mean achievement score of the students on Text mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text when class achievement score in English is considered as a covariate on Word meaning

(8) The adjusted mean achievement score of the students on Text Music mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text when class achievement score in English is considered as a covariate on Word meaning.

(9) The adjusted mean achievement score of the students on Graphics Text Music mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text when class achievement score in English is considered as a covariate on Word meaning.

(10) The adjusted mean achievement score of the students on Graphics Text Music Recitation mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text when class achievement score in English is considered as a covariate on Word meaning.

(11) The adjusted mean achievement score of the students on Graphics Text Music mode is significantly higher than the adjusted mean achievement score of the students on Text when class achievement score in English is considered as a covariate on Analytical Understanding.

(12) The adjusted mean achievement score of the students on Graphics Text Music Recitation mode is significantly higher than the adjusted mean achievement score of the students on Text when class achievement score in English is considered as a covariate on Analytical Understanding

(13) The adjusted mean achievement score of the students on Graphics Text Music mode is significantly higher than the adjusted mean achievement score of the students on Text when class achievement score in English is considered as a covariate on Comprehensive Understanding

(14) The adjusted mean achievement score of the students on Graphics Text Music mode is significantly higher than the adjusted mean achievement score of the students on Text Music when class achievement score in English is considered as a covariate on Comprehensive Understanding.

(15) The adjusted mean achievement score of the students on Graphics Text Music mode is significantly higher than the adjusted mean achievement score of the students on Graphics Text when class achievement score in English is considered as a covariate on Language learning.