

CHAPTER-IV

ANALYSIS OF DATA AND INTERPRETATIONS

CHAPTER- IV

ANALYSIS AND INTERPRETATIONS

4.0.0 INTRODUCTION

The objectives, hypotheses, rationale and delimitations of the present investigation were presented in chapter I. The reviews of related literatures along with the sum-up of those are given in chapter II. The methodology, sample, tools and the statistical techniques used for the analysis of the data are presented in chapter III. The results and their interpretations related to the objectives are presented in Chapter IV. These are presented below under separate headings.

4.1.0 KNOWLEDGE OF ICT AMONG PROSPECTIVE TEACHERS

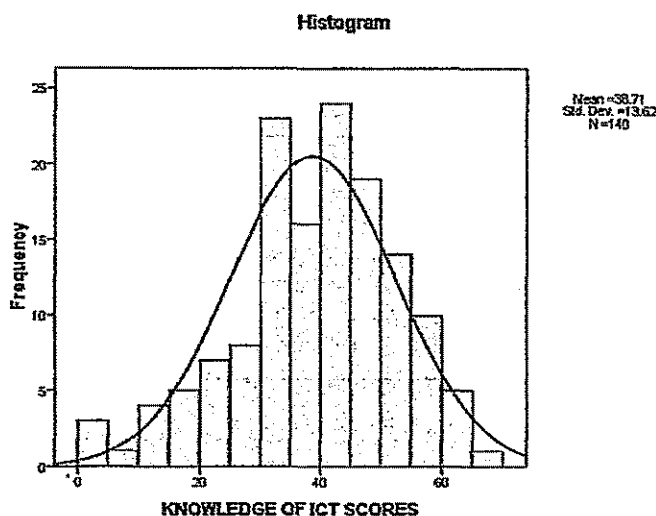
The first objective of the present investigation was to study the knowledge of ICT among prospective teachers. A test of knowledge of ICT was developed by the investigator. The test consisted of 50 items. The maximum marks of the test were 50. The obtained marks were converted into percentage for analysis purposes. The test was administered to the prospective teachers and the scores were analysed with the help of the percentile, Mean, Standard Deviation and CV. The results are presented in the Table 4.1

Table -4.1: Percentile, Mean and Standard Deviation and CV of Knowledge of ICT of Prospective Teachers

N	140
MEAN	38.71
SD	13.62
CV	185.50
Range	68.00
Percentile	Scores
10	20
20	28.40
30	36
40	32
50	40
60	44
70	46
80	50
90	56

Sample of the present study was 140 prospective teachers of RIE and PGBT. Mean of the scores of knowledge of ICT s is 38.71 and SD is13.62.From the above analysis we can draw the inference that 90 % students scored more than 20 % marks, 50 % students scored more than 40 marks.10 % students scored more than 56 % marks.

Finding: The knowledge of ICT among prospective teachers is not satisfactory.



0-418

Fig-4.1: Knowledge of ICT among Prospective Teachers

4.2.0 INFLUENCE OF GENDER, TYPES OF INSTITUTION AND THEIR INTERACTION ON KNOWLEDGE OF ICT

The second objective of the study was to investigate the influence of gender, type of institution and their interaction on knowledge of ICT among prospective teachers. Gender and type of institution both were independent variable. Gender had two levels, i.e., boys & girls. Types of institution, also, have two levels, i.e., RIE and PGBT. The data were analysed by using 2 X 2 ANCOVA of Unequal Cell Size. The results are presented in table 4.2 and 4.3.

Table-4.2: Summary of ANCOVA for Knowledge of ICT by taking Scores of Intelligence as Covariate

Sources of Variance	Df	SS	MSS	F- Values
Gender	1	155.99	155.99	.94
Types of Institution	1	1078.26	1078.26	6.49**
Gender X Types of Institution	1	1521.10	1521.10	9.16**
Error	135	22565.22	165.92	

Total	138			
-------	-----	--	--	--

**Significant at 0.01*

Table - 4.3: Mean and SD of Knowledge of ICT of the Boys and Girls of the Institutions

Institutions / Gender	Boys			Girls			Total	
	N	Mean	SD	N	Mean	SD	Mean	SD
RIE	21	37.43	13.20	69	42.43	12.98	41.27	13.13
PGBT	27	38.59	9.328	23	28.87	15.59	34.12	13.39
TOTAL	48	38.08	11.07	92	39.04	14.82	38.71	13.62

4.2.1 Influence of Gender on Knowledge of ICT

Table 4.2 shows that the F-value is 0.94 for gender is not significant at 0.01 level with df equal to 1/138. It indicates that knowledge of ICT is independent of gender, i.e., or boys and girls. Prospective teachers do not differ significantly in terms of knowledge of ICT when compared by their gender. Gender did not produce significant differential influence on knowledge of ICT. Thus, the null hypothesis, namely, "there is no significant influence of gender on knowledge of ICT when their scores of intelligence are taken as covariate" is not rejected.

Further, table 4.3 shows that the mean and SD of boys on Knowledge of ICT is 38.08 and 11.07, respectively. In contrast, the mean and SD of girls on Knowledge of ICT is 39.04 and 14.82, respectively. The SD demonstrates that there was a wide variation in the distribution of scores both among the boys and girls. Although, there was a difference in mean scores of Knowledge of ICT between boys and girls, but it was not significant.

Finding: There was no significant influence of gender on Knowledge of ICT of prospective teachers.

4.2.2 Influence of Types of Institution on Knowledge of ICT

Table 4.2 shows that the F-value of 6.49 for types of institution is significant at 0.01 level with df equal to 1/138. It indicates that knowledge of ICT is dependent on types of institution. Both boys and girls prospective teachers of RIE, Bhopal were having more knowledge of ICT than PGBT, Bhopal. It indicates that the type of institution had a significant differential influence on the knowledge of ICT of the students. Therefore the null hypothesis, namely, "there is no significant influence of types of institution on knowledge of ICT when their scores of intelligence are taken as covariate" is rejected.

Further, table 4.3 shows that the mean and SD of boys on Knowledge of ICT of RIE is 37.43 and 13.20, respectively. In contrast, the mean and SD of boys of PGBT is 38.59 and 9.328, respectively. The mean and SD of girls of RIE is on Knowledge of ICT is 42.43 and 12.98, respectively. The mean and SD of girls of PGBT is , 28.87 and 15.59, respectively. But, when the scores are compared irrespective of gender, it was found that the mean and SD of RIE is 41.27 and 13.13, respectively. In contrast, the mean and SD of PGBT is 34.12 and 13.39. The SD demonstrates that there was a wide variation in the distribution of scores among the students of both the institutions. Although, there was a difference in mean scores of Knowledge of ICT between boys and girls, but it was not significant.

Finding: There was a significant influence of types of institution on Knowledge of ICT of prospective teachers.

4.2.3 Interaction of Gender and Types of Institution on Knowledge of ICT

Table 4.2 shows that F-value (9.16) for interaction between types of institution and gender is significant at 0.01 level with df equal to 1/138. In the PGBT boys prospective teachers having more knowledge than girls whereas in RIE girls prospective teachers having more knowledge of ICT than their boys counterparts. Thus, the null hypothesis, namely, "there is no significant interaction of gender and types of institution when their scores of intelligence are taken as covariate", rejected. The figure 4.1 also shows that the girls of RIE scored more than the girls of PGBT, whereas the boys of PGBT scored more in compared to the boys of RIE.

Finding: There was a significant interaction of gender and types of institution on Knowledge of ICT of prospective teachers.

High	40	39.20	9.47	87	39.24	15.03	39.23	13.29
Low	08	32.50	16.75	05	35.60	11.08	33.69	14.39
TOTAL	48	38.08	11.07	92	39.04	14.82	38.71	13.62

4.3.1 Influence of Gender on Knowledge of ICT

The result and interpretation are presented in caption 4.2.1.

4.3.2 Influence of Attitude towards ICT on Knowledge of ICT

Table 4.4 shows that the F-value is 0.555 for attitude towards ICT is not significant. It indicates that knowledge of ICT is independent of attitude towards ICT of the prospective teachers. Attitude towards ICT did not produce significant differential influence on knowledge of ICT. Thus, the null hypothesis, namely, "there is no significant influence of attitude towards ICT on knowledge of ICT when their intelligence scores are taken as covariate" is not rejected.

Further, table 4.5 shows that the mean and SD of boys (having favourable attitude towards ICT-high) on Knowledge of ICT is 39.20 and 9.47, respectively. In contrast, the mean and SD of boys (having not so favourable attitude towards ICT-low) on Knowledge of ICT is 32.50 and 16.75, respectively. The mean and SD of girls (having favourable attitude towards ICT-high) on Knowledge of ICT is 39.24 and 15.03, respectively. The mean and SD of girls (having favourable attitude towards ICT-low) on knowledge of ICT is 35.60 and 11.08, respectively. But, when the scores are compared irrespective of gender, it was found that the mean and SD of (having favourable attitude towards ICT-high) is 39.23 and 13.29, respectively. In contrast, the mean and SD (having favourable attitude towards ICT-low) of on knowledge of ICT is 33.69 and 14.39. The SD demonstrates that there was a wide variation in the distribution of scores among the students of both the categories of attitudes. Although, there was a difference in mean scores of Knowledge of ICT between boys and girls, and between different categories of attitude towards ICT, but it was not significant.

Finding: There was no significant influence of Attitude towards ICT on the knowledge of ICT of prospective teachers.

4.3.3 Interaction of Gender and Attitude towards ICT on Knowledge of ICT

Table 4.4 shows that F-value 0.110 for interaction between attitude towards ICT and gender is not significant at 0.05 level. It indicates that interaction of gender and attitude towards ICT didn't produce a significant influence on knowledge of ICT. Therefore, the null hypothesis, namely, "there is no significant interaction of gender and attitude towards ICT on knowledge of ICT of prospective teachers when their scores of intelligence are taken as covariate" is not rejected.

Finding: There was no significant interaction of gender and Attitude towards ICT on the knowledge of ICT of prospective teachers.

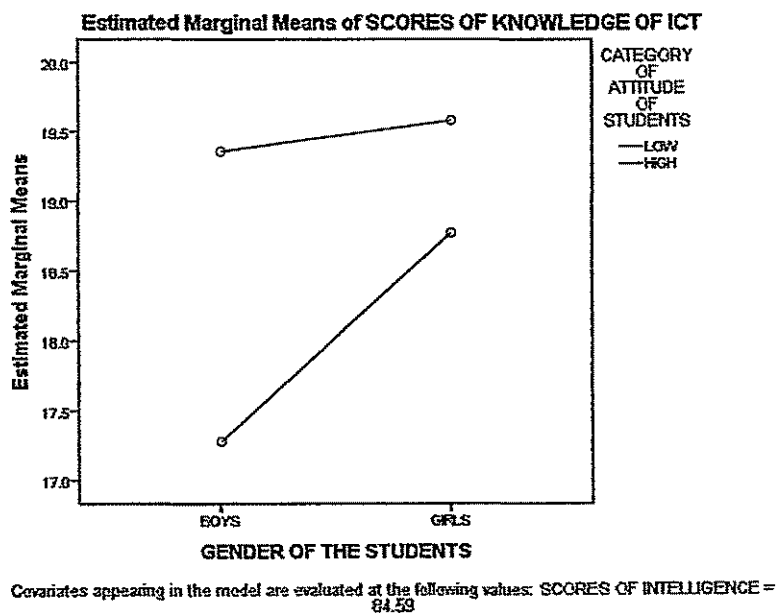


Fig. 4.3: Interaction of Gender and Attitude towards ICT on Knowledge of ICT

4.4.0 INFLUENCE OF GENDER, LEARNING STYLE AND THEIR INTERACTION ON KNOWLEDGE OF ICT

The fourth objective of the study was to investigate the influence of gender, learning style and their interaction on knowledge of ICT among prospective teachers. Both, gender and learning style were independent variables. Gender had two levels, boys & girls. Learning style also had two levels, i.e., right hemisphere and left hemisphere. The data were analysed by using 2 X 2 Factorial Design ANCOVA of Unequal Cell Size. The results are presented in table 4.6 and 4.7.

Table-4.6: Summary of ANCOVA for Knowledge of ICT by taking Scores of Intelligence as Covariate

Sources of Variance	df	SS	MSS	F-Values
Gender	1	11.422	11.42	.806
Learning Style	1	3.066	3.066	.899
Gender X Learning Style	1	37.059	37.059	.659
Error	135	25702.2	188.98	
Total	138			

Table - 4.7 : Mean and SD of Knowledge of ICT of the Boys and Girls of Right and Left Hemisphere style of Learning

Gender/ Learning Style	Boys			Girls			Total	
	N	Mean	SD	N	Mean	SD	Mean	SD
Right Hemisphere	32	37.81	11.35	58	39.59	14.71	38.96	13.57
Left Hemisphere	16	38.62	10.85	34	38.12	15.19	38.28	13.84
TOTAL	48	38.08	11.07	92	39.04	14.82	38.71	13.62

4.4.1 Influence of Gender on Knowledge of ICT

The result and interpretation are presented in caption 4.2.1.

4.4.2 Influence of Learning Style on Knowledge of ICT

Table 4.6 shows that the F-value is 0.899 for learning style is not significant. It indicates that knowledge of ICT is independent of Learning style of the prospective teachers. Learning style did not produce significant differential influence on knowledge of ICT. Thus, the null hypothesis, namely, "there is no significant influence of learning style on knowledge of ICT when their intelligence scores are taken as covariate" is not rejected.

Further, table 4.6 shows that the mean and SD of boys (having right hemisphere) on Knowledge of ICT is 37.81 and 11.35, respectively. In contrast, the mean and SD of boys (left hemisphere) on Knowledge of ICT 38.62 and 10.85, respectively. The mean and SD of girls (right hemisphere) on Knowledge of ICT is 39.59 and 14.71, respectively. The mean and SD of girls (left hemisphere) on knowledge of ICT is 38.12 and 15.19, respectively. But, when the scores are compared irrespective of gender, it was found that the mean and SD of (right hemisphere) is 38.93 and 13.57, respectively. In



contrast, the mean and SD (left hemisphere) of on knowledge ICT is 38.28 and 13.84. The SD demonstrates that there was not a wide variation in the distribution of scores among the students of both the categories of learning style. Although, there was a difference in mean scores of Knowledge of ICT between boys and girls, and between different categories of learning style, but it was not significant.

Finding: There was no significant influence of Learning style on the knowledge of ICT of prospective teachers.

4.4.3 INTERACTION OF GENDER AND LEARNING STYLE ON KNOWLEDGE OF ICT

Table 4.6 shows that F-value 0.659 for interaction between gender and learning style is not significant at 0.05 level. It indicates that interaction of gender and learning style didn't produce a significant influence on knowledge of ICT. Therefore, the null hypothesis, namely, "there is no significant interaction of gender and learning style on knowledge of ICT of prospective teachers when their scores of intelligence are taken as covariate" is not rejected.

Finding: There was no significant interaction of gender and learning style on the knowledge of ICT of prospective teachers.

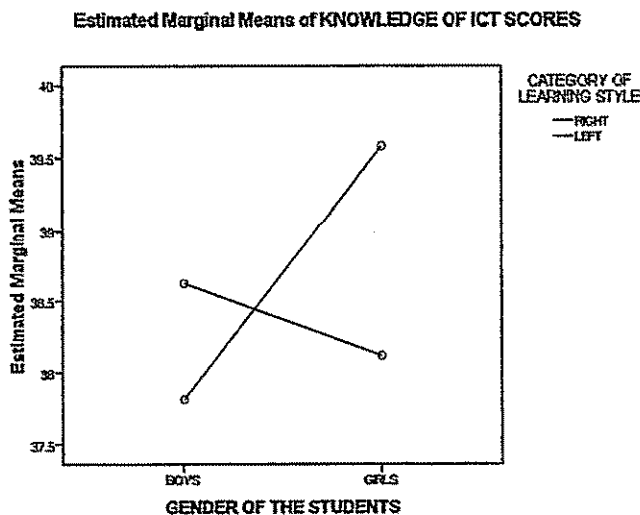


Fig: 4.4: Interactions of Gender and Learning Style on Knowledge of ICT

4.5.0 INFLUENCE OF ATTITUDE TOWARDS ICT, TEACHING APTITUDE AND THEIR INTERACTION ON KNOWLEDGE OF ICT

The fifth objective of the study was to investigate the influence of teaching aptitude, attitude towards ICT and their interaction on knowledge of ICT among prospective teachers. Teaching aptitude and attitude towards ICT both were independent variable. The data was analysed by using 2X2 ANCOVA of unequal size. The results are presented in table 4.8 and 4.9.

Table - 4.8: F-Values for Influence and Interaction of Teaching Aptitude and Attitude towards ICT

Sources of Variance	df	SS	MSS	F-Values
Attitude towards ICT	1	110.38	110.38	.407
Teaching Aptitude	1	22.66	22.66	.707
Attitude towards ICT X Teaching Aptitude	1	302.93	302.93	.170
Error	135	21371.0	159.48	
Total	138			

Table-4.9: Mean and SD of Scores of Knowledge of ICT

Attitude/ teaching aptitude	High			Low			Total	
	N	Mean	SD	N	Mean	SD	Mean	SD
High	6	33.67	10.38	75	40.91	12.52	40.37	12.46
Low	7	33.71	18.02	51	36.63	14.65	36.28	14.95
TOTAL	13	33.69	14.39	126	39.17	13.53		

4.5.1 Influence of Attitude towards ICT on Knowledge of ICT

The result and interpretation are presented in caption 4.3.2.

4.5.2 Influence of Teaching Aptitude on Knowledge of ICT

Table 4.9 shows that the F-value is 0.707 for teaching aptitude are not significant. It indicates that knowledge of ICT is independent of teaching aptitude of the prospective teachers. Teaching aptitude did not produce significant differential influence on knowledge of ICT. Thus, the null hypothesis, namely, "there is no significant influence of teaching aptitude on knowledge of ICT when their intelligence scores are taken as covariate" is not rejected.

Further, table 4.9 shows that the mean and SD of prospective teachers having high attitude towards ICT (having teaching aptitude-high) on Knowledge of ICT is 33.67 and 10.38, respectively. In contrast, the mean and SD of

prospective teachers having high attitude towards ICT (having not very high teaching aptitude-low) on Knowledge of ICT 33.71 and 18.02, respectively. The mean and SD of prospective teachers not having favourable attitude towards ICT (having teaching aptitude-high) on Knowledge of ICT is 40.91 and 12.52, respectively. The mean and SD of prospective teachers not having favourable attitude towards ICT (having teaching aptitude-low) on knowledge of ICT is 36.63 and 14.65, respectively. But, when the scores are compared irrespective of attitude towards ICT, it was found that the mean and SD of prospective teachers (having teaching aptitude-high) is 40.37 and 12.46, respectively. In contrast, the mean and SD of prospective teachers (having teaching aptitude-low) on knowledge ICT is 36.28 and 14.95. The SD demonstrates that there was a wide variation in the distribution of scores among the students of both the categories of teaching aptitude. Although, there was a difference in mean scores of Knowledge of ICT between high and low attitude, and between different categories of teaching aptitude, but it was not significant.

Finding: There was no significant influence of attitude towards ICT on the knowledge of ICT of prospective teachers.

4.5.3 Interaction of Attitude towards ICT and Teaching Aptitude on Knowledge of ICT

4.9 shows that F-value 0.170 for interaction between attitude towards ICT and teaching aptitude is not significant at 0.05 level. It was observed that there is interaction but this interaction is not significant. It indicates that interaction of attitude towards ICT and teaching aptitude didn't produce a significant influence on knowledge of ICT. Therefore, the null hypothesis, namely, "there is no significant interaction of attitude towards ICT and teaching aptitude on knowledge of ICT of prospective teachers when their scores of intelligence are taken as covariate" is not rejected.

Finding: There was no significant interaction of attitude towards ICT and teaching aptitude on the knowledge of ICT of prospective teachers.

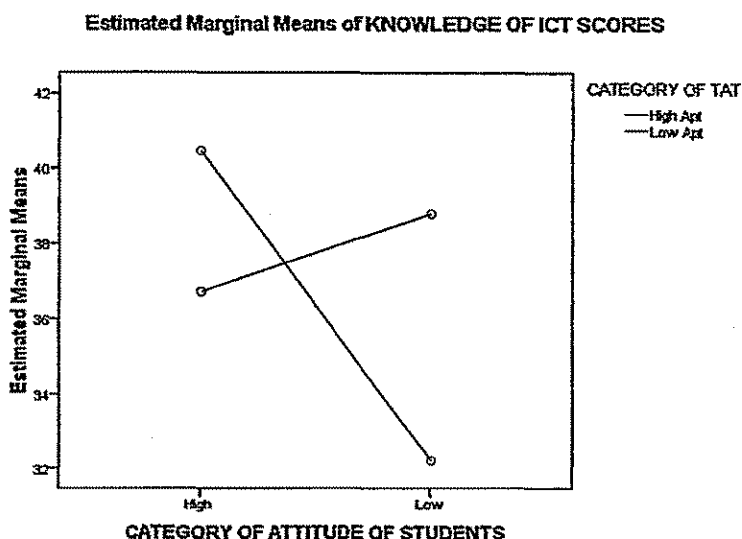


Figure: 4.5: Interactional Influence of Attitude towards ICT and Teaching Aptitude on Knowledge of ICT

4.6.0 INFLUENCE AND INTERACTION OF TEACHING APTITUDE AND LEARNING STYLE ON KNOWLEDGE OF ICT

The sixth objective of the study was to investigate the influence of teaching aptitude, learning style and their interaction on knowledge of ICT among prospective teachers. Teaching aptitude and learning style both were independent variable. The data was analysed by using 2X2 ANCOVA of unequal size. The results are presented in table 4.10 and 4.11.

Table- 4.10: F-values for Influence and Interaction of Aptitude and Learning Style on Knowledge of ICT

Sources of Variance	df	SS	MSS	F-Values
Teaching aptitude	1	732.56	732.56	.048
Learning Style	1	42.92	42.92	.631
Teaching aptitude X Learning Style	1	209.39	209.39	.289
Error	135	24939.75	184.73	
Total	138			

Table-4.11: Mean and SD of the Scores of Knowledge of ICT

Teaching aptitude/ Learning style	High			Low			Total	
	N	Mean	SD	N	Mean	SD	Mean	SD
Right	51	39.84	12.46	38	37.58	15.12	38.88	13.62
Left	30	41.27	12.63	20	33.80	14.67	38.28	13.84
TOTAL	81	40.37	12.46	58	36.28	14.95		

4.6.1 Influence of Teaching Aptitude on Knowledge of ICT

The result and interpretation are presented in caption 4.5.2.

4.6.2 Influence of Learning Style on Knowledge of ICT

The result and interpretation are presented in caption 4.4.2.

4.6.3 Interaction of Teaching Aptitude and Learning Style on Knowledge of IC

4.11 shows that F-value 0.289 for interaction between teaching aptitude and learning style is not significant at 0.05 level. It indicates that interaction of teaching aptitude and learning style didn't produce a significant influence on knowledge of ICT. Therefore, the null hypothesis, namely, "there is no significant interaction of teaching aptitude and learning style on knowledge of ICT of prospective teachers when their scores of intelligence are taken as covariate" is not rejected.

Further, table 4.10 shows that the mean and SD of prospective teachers having high teaching aptitude (right hemisphere) on Knowledge of ICT is 39.84 and 12.46, respectively. In contrast, the mean and SD of prospective teachers having high teaching aptitude (left hemisphere) on Knowledge of ICT is 41.27 and 12.63, respectively. The mean and SD of prospective teachers having low teaching aptitude (right hemisphere) on Knowledge of ICT is 37.58 and 15.12, respectively. The mean and SD of prospective teachers having low teaching aptitude (left hemisphere) on knowledge of ICT is 33.80 and 14.67, respectively. But, when the scores are compared irrespective of teaching aptitude, it was found that the mean and SD of prospective teachers (right hemisphere) is 38.88 and 13.62, respectively. In contrast, the mean and SD of prospective teachers (left hemisphere) on knowledge of ICT is 38.28 and 13.84. The SD demonstrates that there was a wide variation in the distribution of scores among the students of both the categories of teaching aptitude. Although, there was a difference in mean scores of Knowledge of ICT between prospective teachers having right and left hemisphere, but it was not significant.

Finding: There was no significant interaction of teaching aptitude and learning style on the knowledge of ICT of prospective teachers.

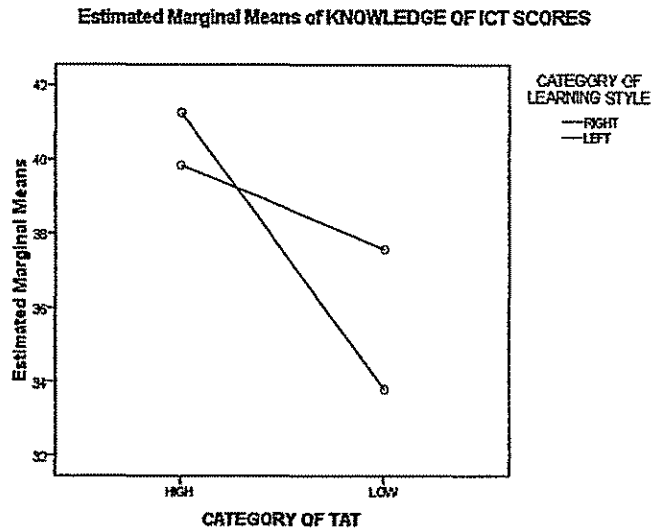


Fig 4.6: Interactional Influence of Teaching Aptitude And Learning Style on Knowledge of ICT

4.7.0 INFLUENCE AND INTERACTION OF TEACHING APTITUDE AND TYPES OF INSTITUTION ON KNOWLEDGE OF ICT

The seventh objective of the study was to investigate the influence of teaching aptitude, types of institution and their interaction on knowledge of ICT among prospective teachers. Teaching aptitude and types of institution both were independent variable. The data was analysed by using 2 X 2 Factorial Design ANCOVA of Unequal Size. The results are presented in table 4.12 and 4.13

Table- 4.12: F-Values for Influence and Interaction of Teaching Aptitude and Types of Institution on Knowledge of ICT

Sources of Variance	df	SS	MSS	F-Values
Teaching aptitude	1	491.360	491.36	2.836
Types of institution	1	1654.70	1654.70	9.550**
Teaching aptitude X Types of institution	1	13.207	13.207	.076
Error	135	23391.6	173.27	
Total	138			

Table-4.13: Mean and SD of the Scores of the Group

Teaching aptitude/ Type of institution	High			Low			Total	
	N	Mean	SD	N	Mean	SD	Mean	SD
RIE	52	43.23	11.41	38	38.58	14.92	41.27	13.14
PGBT	29	35.24	12.82	20	31.90	14.34	33.88	13.41
TOTAL	81	40.37	12.46	58	36.28	14.94	38.66	13.66

4.7.1 Influence of Teaching Aptitude on Knowledge of ICT

The result and interpretation are presented in caption 4.5.2.

4.7.2 Influence of Type of Institution on Knowledge of ICT

The result and interpretation are presented in caption 4.2.2.

4.7.3 Interaction of Teaching Aptitude and Types of Institution on Knowledge of ICT

4.13 shows that F-value 0.076 for interaction between teaching aptitude and type of institution is not significant at 0.05 level. It indicates that interaction of teaching aptitude and type of institution didn't produce a significant influence on knowledge of ICT. Therefore, the null hypothesis, namely, "there is no significant interaction of teaching aptitude and type of institution on knowledge of ICT of prospective teachers when their scores of intelligence are taken as covariate" is not rejected.

Further, table 4.12 shows that the mean and SD of prospective teachers having high teaching aptitude (from RIE) on Knowledge of ICT is 43.43 and 11.41, respectively. In contrast, the mean and SD of prospective teachers having high teaching aptitude (from PGBT) on Knowledge of ICT 35.24 and 12.82, respectively. The mean and SD of prospective teachers having low teaching aptitude (from RIE) on Knowledge of ICT is 38.58 and 14.92, respectively. The mean and SD of prospective teachers having low teaching aptitude (from PGBT) on knowledge of ICT is 31.90 and 14.34, respectively. But, when the scores are compared irrespective of teaching aptitude, it was found that the mean and SD of prospective teachers (from RIE) is 41.27 and 13.14, respectively. In contrast, the mean and SD of prospective teachers (from PGBT) on knowledge ICT is 33.88 and 13.41. The SD demonstrates that there was a wide variation in the distribution of scores among the students of both the categories of teaching aptitude. Although, there was a difference in mean scores of Knowledge of ICT between prospective teachers of RIE and PGBT, but it was not significant.

Finding: There was no significant interaction of teaching aptitude and type of institution on the knowledge of ICT of prospective teachers.

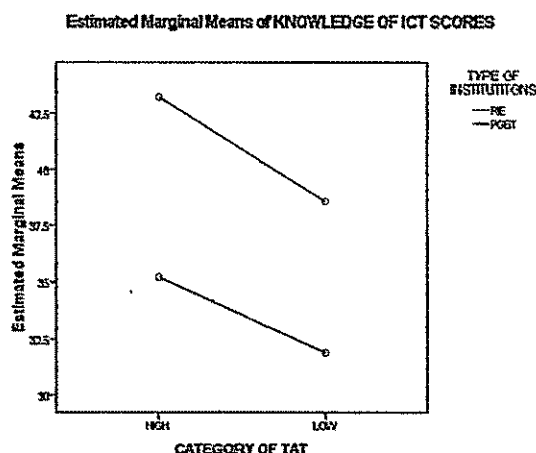


Fig.4.7: Interactional Influence of Teaching Aptitude and Types of Institution on Knowledge of ICT

4.8.0 FINDINGS

Findings of the present study are as follows:

1. The knowledge of ICT among prospective teachers is not satisfactory.
2. There was no significant influence of gender on knowledge of ICT.
3. There was no significant influence of types of institution on knowledge of ICT.
4. There was no significant interaction of gender and type of institution on knowledge of ICT.
5. There was no significant influence attitude towards ICT on knowledge of ICT.
6. There was no significant interaction of gender and attitude towards ICT on knowledge of ICT.
7. There was no significant influence of learning style on knowledge of ICT.
8. There was no significant interaction of gender and learning style on knowledge of ICT.
9. There was no significant influence of teaching aptitude on knowledge of ICT
10. There was no significant interaction of teaching aptitude and attitude towards ICT on knowledge of ICT.
11. There was no significant interaction of teaching aptitude and learning style on knowledge of ICT.
12. There was no significant interaction of teaching aptitude and types of institution on knowledge of ICT