

CHAPTER IV

ANALYSIS AND INTERPRETATION OF DATA

4.1 INTRODUCTION

As it is a survey type of study, the data analysis for the present study was done quantitatively with the help of both descriptive statistics and inferential statistics. The descriptive statistical techniques like, mean, standard deviation, standard error of mean, and the inferential statistics like, t-test for independent means and Analysis of Variance (ANOVA) were used during the process of the data analysis.

4.2 ANALYSIS AND INTERPRETATION

The Analysis and interpretation of the collected data is presented as under:

- (i) ICT (computer, internet and others) awareness of secondary and higher secondary school teachers
- (ii) ICT (computer, internet and other) use of secondary and higher secondary school teachers
- (iii) ICT (computer, internet and other) need of secondary and higher secondary school teachers

The analyzed data is presented in the forms of tables. Separate tables are prepared for different statistical tools used and for different related variables. Detailed description and interpretation of tables are followed after each and every tables.

4.3 ICT AWARENESS OF SECONDARY AND HIGHER SECONDARY SCHOOL TEACHER

The objective 1 of the study was “to study the ICT awareness of secondary and higher secondary school teacher”. For the realization of objective 1, the investigator has studied the ICT awareness of teachers using a scale. The analysis of the response is presented as below:

The awareness of 900 secondary and higher secondary school teachers in computer, internet and other component of ICT like, LCD Projectors, OHP, T.V, radio and projectors were collected out of 110 teachers. The collected data were analyzed in terms of central tendency, variance and standard error of mean which are presented in table 4.1.

Table - 4.1

Mean, Standard Deviation and Standard Error of Mean of the Index Awareness of Secondary and Higher Secondary School Teachers in Computer, Internet, and Others Components of ICT .

Awareness	Number	Mean	SD	SE of Mean
Computer	900	7.53	4.14	0.44
Internet	900	5.14	3.66	0.38
Others	900	6.83	3.76	0.396
Overall	900	19.51	9.17	0.97

The awareness of secondary and higher secondary school teachers in computer, Internet, other components of ICT and overall awareness of teachers about ICT were found in term of mean and standard deviation . The mean awareness for computer, internet and other components of ICT and overall awareness of teachers were found to be 7.53, 5.14, 6.83 and 19.51 respectively with the standard deviations of 4.14, 3.66, 3.76 and 9.17 respectively. The standard errors of mean of awareness of teachers were found to be 0.44, 0.38, 0.396 and 0.97 for computer, internet, other components of ICT and overall awareness respectively. The mean of ICT awareness for computer, internet, other components of ICT and overall awareness was found to be very low and the standard deviations of ICT awareness of teachers were found to be very high as compared to the

means of these components of ICT. The standard deviation was found highest for computer and it was found low and nearly equal to both internet and other components of ICT. The result of high standard deviations and low means show that very large majority of teachers are very far from the mean which is also seems to be very low in terms of mean ICT awareness. These means and standard deviations show a low degree of awareness of teachers in computer, internet, other components of ICT and overall awareness. The mean overall awareness was found to be 19.51 and standard deviation was found to be 9.17 which is very high as compared to mean, which shows that teachers overall awareness about different components of ICT was very low and they differ from each other. This result of the low level of awareness in computer, internet, other components of ICT and overall awareness may be due to the lack of skill or may be due to lack of resources. The awareness of teachers in computer that include word processing, power point, spread sheet, CAI and related packages, computer language and applications, was found more in comparison to the awareness in Internet that include e-mail, chatting, searching, web designing, project work and other components of ICT that include LCD projector, OHP, T.V., radio, projectors and it is obvious to find the mean of overall in between the mean awareness of computer, Internet and other components of ICT.

4.4 ICT USE OF SECONDARY AND HIGHER SECONDARY SCHOOL TEACHERS

The objective II of the study was “to study the ICT use of secondary and higher secondary school teacher.” For the realization of objective II, the investigator has studied the ICT use of teachers using a scale . The analysis of the response is presented as below.

The use of 900 secondary and higher secondary school teachers in computer, internet and other component of ICT like LCD Projectors, OHP, T.V, radio and projectors were collected out of 1000 teachers. The collected data were analyzed in terms of central tendency, variance and standard error of mean which are presented in table 4.2.

Table- 4.2

Mean, Standard Deviation and Standard Error of Mean of the Index of ICT Use of Secondary and Higher Secondary School Teachers in Computer, Internet, and Others Components of ICT .

Use	Number	Mean	SD	SE of Mean
Computer	900	11.89	11.84	1.25
Internet	900	6.67	8.01	0.84
Others	900	8.73	8.03	0.856
Overall	900	27.29	24.39	2.57

The usage of secondary and higher secondary school teachers in computer, Internet, other components of ICT and overall use of teachers of ICT were found in term of mean and standard deviation. The means for computer, internet and other components of ICT and overall usage of ICT of teachers were found to be 11.89, 6.67, 8.73 and 27.29 respectively with the standard deviations of 11.84, 8.01, 8.03 and 24.39 respectively. The standard errors were found 1.25, 0.84, .856 and 2.57 for computer, Internet, Other Components of ICT and overall usage by the secondary and higher secondary teachers respectively. The standard deviations are very high as compare to means of these components of ICT. The standard deviation was found highest for computer and it was found low and nearly equal to both internet and other components of ICT. The standard deviation of internet has been found very high and was found higher than mean of internet usage which shows that teachers are very in the usage of internet. The result of high standard deviation shows that very large majority of teachers are very far from the mean which is also seems to be very low In terms of mean usage. These means and standard deviations show a low level of usage of computer, internet, other components of ICT and overall usage by the teachers. The overall usage mean found to be 27.29 and standard deviation was found to be 24.39 which is very high as compared to means, which shows that teachers overall usage of different components of ICT is very less. This result of the low degree of usage in computer, internet, other components of ICT and overall usage by the teachers due to the lack of skill or/and due to lack of availability of resources and/or teachers were not interested in using different components of ICT. The frequency and percentiles result shows that they are not using it because of lack of skills

and lack of availability of resources. Majority of secondary and higher secondary teachers shown that they were not using ICT because of lack of skill that is 44.65% of the total respondent teachers and 41.53% of the teachers have shown that they were not using ICT due to lack of resources. . Very few teachers (13.68%) have shown that they are not interested in it and that is why they are not using it. The teachers use of computer that include word processing, PowerPoint, Spread Sheet, CAI and related packages, computer language and applications, was found more in comparison to the usage in Internet that include e-mail, chatting, searching, web designing, project work and other components of ICT that include LCD projector, OHP, T.V., Radio, Projectors.

Further secondary and higher secondary teachers use of ICT were studied in terms of their use of ICT for Classroom Teaching, Professional Development and Personal Development which is given in the following table with their mean ICT use, SD, SE of mean.

Table - 4.3

Mean, SD and SE of mean of the Index for Usage of ICT by the Secondary and Higher Secondary Teachers for Classroom Teaching, Professional Development and Personal Development.

Use	Number	Mean	SD	SE of Mean
Classroom Teaching	900	7.03	8.8825	0.9363
Professional Development	900	8.71	9.0015	0.9488
Personal Development	900	11.54	10.1644	1.0714

The usage of ICT resources by secondary and higher secondary school teachers for Classroom teaching, Professional Development and for Personal Development was found in term of mean and standard deviation and Standard Error of Mean. The means of use of ICT resources for Classroom teaching, Professional Development and for Personal Development were found to be 7.03, 8.71 and 11.54 respectively with the standard deviations of 8.8825, 9.0015 and 10.1644 respectively. The standard errors of mean of ICT usage of secondary and higher secondary teachers were found 0.9363, 0.9488 and 1.0714 for Classroom teaching, Professional Development and for Personal Development respectively.

The standard deviations are very high as compare to means of these components of ICT. The standard deviation was found highest for personal Development and it was found lowest for Classroom Teaching. The standard deviation for personal development has been found very high and was found nearer to mean value which shows that teachers were very in the usage of ICT for personal development. The result of high standard deviation shows that majority of secondary and higher secondary teachers were very far from the mean which is also seems to be very low in terms of mean usage. These means and standard deviations show a low level of usage of ICT by the secondary and higher secondary teachers for classroom teaching, professional development and personal developments. This result of the low degree of usage of ICT for classroom teaching, professional development and personal development was due to the lack of skill or due to lack of availability of resources or teachers were not interested in using different components of ICT.

4.5 ICT NEED OF TEACHERS

The third objective of the study was to ‘study the ICT need of secondary and higher secondary school teacher.’ For the realization of objective III, the investigator has studied the ICT need of teachers using scale . The analysis of the response is presented as below:

The need of 900 secondary and higher secondary school teachers in computer, internet and other component of ICT like LCD Projectors, OHP, T.V, Radio and Projectors were collected out of 1000 teachers. The

collected data were analyzed in terms of central tendency, variance and standard error of mean which are presented in table 4.4.

Table - 4.4

Mean, Standard Deviation and Standard Error of Mean of Index of Need of secondary and higher secondary school teachers in Computer, Internet, and others components of ICT .

Need	Number	Mean	SD	SE of Mean
Computer	900	4.71	5.171	0.5451
Internet	900	2.30	3.1072	0.3275
Others	900	3.03	3.9509	0.4165
Overall	900	10.04	10.9320	1.1523

The need of secondary and higher secondary school teachers in computer, Internet, other components of ICT and overall need of teachers about ICT were found in term of mean and standard deviation and Standard Error of Mean. The means for computer, internet and other components of ICT and overall need for ICT of teachers were found to be 4.71, 2.30, 3.03 and 10.04 respectively with the standard deviations of 5.171, 3.1072 , 3.9509 and 10.9320 respectively. The standard errors of mean ICT need of

secondary and higher secondary teachers were found to be 0.5451, 0.3275, 0.4165 and 1.1523 for computer ,Internet, Other Components of ICT and overall need respectively. The standard deviations were very high as compare to means of these components of ICT. The standard deviation was found highest for computer and it was found lowest for internet and same for other components of ICT was found in between the SD of the Computer and Internet. The result of high standard deviation shows that very large majority of teachers were very far from the mean which is also seems to be very low In terms of mean need. These means and standard deviations show a low degree of need of teachers in computer, internet, other components of ICT and overall. The overall need mean ICT need was found to be 10.04 and standard deviation was found to be 10.9320 which is higher than the mean, which shows that secondary and higher secondary teachers overall need about different components of ICT was very less. This result of the low level of need in computer, internet, other components of ICT and overall may be due to the lack of interest on the part of the teachers for the different components of ICT. The need of From

4.6 MEDIUM OF INSTRUCTION AT HIGHER SECONDARY STAGE

As per the medium of instruction at higher secondary stage of the secondary and higher secondary teachers, mainly two groups of teachers were found, one group with English as medium of instruction and another group with Gujarati as their medium of instruction. 77 teachers were found with English as their medium of instruction and 12 teachers were found

with Gujarati language as their medium of instruction from the taken sample. The relation of medium of instruction at higher secondary level of secondary and higher secondary teachers with their Awareness, use and need for ICT were computed. Attempt had been made to see the difference among different groups of secondary and higher secondary teachers on the basis of their medium of instruction in mean ICT awareness, use and need. The t-test for independent means was used for this purpose which is given in table 4.29.

Table - 4.5

Means, Standard Deviations, SEs of Means of Groups of secondary and higher secondary teachers studied through English *and* teachers studied through *Gujarati medium* along with Number of teachers in Different Groups (No. of Tr.s), t-value, Degree of Freedom (DF) and Level of Significance

Variable	MIHS	No. of tr.s	Mean	SD	SE of Mean	't' value	DF	Significance
<i>Awareness</i>	<i>English</i>	233	19.21	9.35	1.07	0.8456	88	NS
	<i>Gujarati</i>	777	21.31	7.77	2.24			
<i>Use</i>	<i>English</i>	233	27.03	25.51	2.91	0.3315	88	NS
	<i>Gujarati</i>	777	28.85	16.13	4.66			
<i>Need</i>	<i>English</i>	233	9.61	10.72	1.22	0.8306	88	NS
	<i>Gujarati</i>	777	12.62	11.80	3.41			

* Significant at 0.01 level, ** Significant at 0.05 level, NS = Not Significant

From table 4.29, it was observed that the means of secondary and higher secondary teachers studied through of English and Gujarati medium awareness were 19.21 and 21.31 respectively. The standard deviations of the same group teachers studied through English and Gujarati medium at higher secondary level were 9.35 and 7.77 respectively. The standard errors of means of these groups teachers studied through English medium and Gujarati medium at higher secondary level were 1.07 and 2.24 respectively. In terms of mean, standard deviation and standard error, it can be analyzed that the mean score of English medium group teachers was found less than that of Gujarati medium group teachers and the teachers studied through English medium were less aware about ICT than that of teachers studied through Gujarati medium at higher secondary level. The t-value of 0.8456 was found not significant at 0.05 level with 88 degree of freedom. Hence, the working hypothesis that is 'there is no significant difference between the mean ICT awareness score of secondary and higher secondary teacher studied through English medium and secondary and higher secondary teachers studied through Gujarati medium at higher secondary level' is retained. So, it can be said that awareness of secondary and higher secondary teachers about ICT is not related with their medium of instruction at higher secondary level.

From table 4.29, it was observed that the means ICT use of secondary and higher secondary teachers studied through of English and secondary and higher secondary teachers studied through Gujarati medium were 27.03 and 28.85 respectively. The standard deviations ICT use of the same group

teachers studied through English and teachers studied through Gujarati medium at higher secondary level were 25.51 and 16.13 respectively. The standard errors of means of these groups teachers studied through English medium and Gujarati medium at higher secondary level were 2.91 and 4.66 respectively. In terms of mean, standard deviation and standard error, it can be analyzed that the mean score of English medium group teachers was found less than that of Gujarati medium group teachers and the secondary and higher secondary teachers studied through English medium were using ICT resources less than that of the secondary and higher secondary teachers studied through Gujarati medium at higher secondary level. The t-value of 0.3315 was found not significant at 0.05 level with 88 degree of freedom. Hence, the working hypothesis that is 'there is no significant difference between the mean ICT use score of secondary and higher secondary teachers studied through English medium and the secondary and higher secondary teachers studied through Gujarati medium at higher secondary level' is retained. So, it can be said that ICT use of secondary and higher secondary teachers ICT is not related with their medium of instruction at secondary and higher secondary level.

From table 4.29, it was observed that the means ICT need of secondary and higher secondary teachers studied through English and the secondary and higher secondary teachers studied through Gujarati medium were 9.61 and 12.62 respectively. The standard deviations of ICT need of the same group teachers studied through English and teachers studied through Gujarati medium at higher secondary level were 10.72 and 11.80 respectively. The standard errors of means of these groups teachers studied through English medium and Gujarati medium at higher secondary level were 1.22 and

3.41 respectively. In terms of mean, standard deviation and standard error, it can be analyzed that the mean score of English medium group teachers was found less than that of Gujarati medium group teachers and the teachers studied through English medium's need of ICT was less than that of teachers studied through Gujarati medium at higher secondary level. The t-value of 0.8306 was found not significant at 0.05 level with 88 degree of freedom. Hence, the working hypothesis that is 'there is no significant difference between the mean ICT need score of secondary and higher secondary teachers studied through English medium and secondary and higher secondary teachers studied through Gujarati medium at higher secondary level' is retained. So, it can be said that ICT need of secondary and higher secondary teachers is not related with their medium of instruction at secondary and higher secondary level.

From the analysis of table 4.29, it can be concluded that the variable 'medium of instruction at higher secondary stage' is not related significantly with the ICT awareness, use and need of secondary and higher secondary English medium school teachers. Teachers with English as the medium of instruction at higher secondary stage and Teachers with Gujarati as the medium of instruction at secondary and higher secondary stage stand equally or nearly equal in ICT awareness, use and need.

4.6.1 COMPUTER TRAINING

To find out the relation between ICT awareness, use and need of secondary and higher secondary teachers and their Computer training, mean, SD, SE of mean, were used and t-test was used to see the significance difference between the means score of ICT awareness, use and need of secondary and higher secondary teachers teaching with computer training and the secondary and higher secondary teachers teaching without computer training. For this purpose, teachers were classified into two groups that is computer trained teachers and computer untrained teachers on the basis of their responses in scale . Analysis of t-tests is given in table below:

Table - 4.6

Means, Standard Deviations, SEs of Means of Groups of secondary and higher secondary teachers (i) Computer trained teachers and (ii) Computer untrained teachers along with Number of teachers in Different Groups (No. of Tr.s), t-value, Degree of Freedom (DF) and Level of Significance

Variable	Computer Training	No. of Tr.s	Mean	SD	SE of Mean	't' value	DF	Significance
<i>Awareness</i>	<i>Trained</i>	665	20.34	9.45	1.17	1.4783	88	NS
	<i>Untrained</i>	235	17.36	8.03	1.64			
<i>Use</i>	<i>Trained</i>	665	31.02	26.80	3.32	3.2504	88	0.01
	<i>Untrained</i>	235	17.60	11.98	2.45			
<i>Need</i>	<i>Trained</i>	665	8.95	11.62	1.44	1.7726	88	NS
	<i>Untrained</i>	235	12.88	8.24	1.68			

* Significant at 0.01 level, ** Significant at 0.05 level, NS = Not Significant

From table 4.30, it was observed that the means awareness about ICT of secondary and higher secondary teachers teaching with computer training and the secondary and higher secondary teachers teaching without computer training were 20.34 and 17.36 respectively. The standard deviations of the teachers teaching with computer training and the teachers teaching without computer training were 9.45 and 8.03 respectively. The

standard errors of means of the same group (teachers teaching with computer training and the teachers teaching without computer training) were 1.17 and 1.64 respectively. In terms of mean, standard deviation and standard error, it can be analyzed that the mean score of teachers teaching with computer training were found more than that of the teachers teaching without computer training, so it can be said that teachers teaching with computer training were more aware about ICT resources than the teacher without computer training. The t-value of 1.4783 was found not significant at 0.05 level with 88 degree of freedom. Hence, the working hypothesis that is 'there is no significant difference between the mean ICT awareness score of secondary and higher secondary computer trained teachers and secondary and higher secondary computer untrained teachers' is retained. So, it can be said that awareness of secondary and higher secondary teachers about ICT is not related with the computer training.

From table 4.30, it was observed that the means use about ICT of secondary and higher secondary teachers teaching with computer training and the teachers teaching without computer training were 31.02 and 11.98 respectively. The standard deviations of the teachers teaching with computer training and the teachers teaching without computer training were 26.80 and 11.98 respectively. The standard errors of means of the same group (teachers teaching with computer training and the teachers teaching without computer training) were 3.32 and 2.45 respectively. In terms of mean, standard deviation and standard error, it can be analyzed that the mean score of teachers teaching with computer training were found to be using ICT resources more than that of the teachers teaching without computer training, so it can be said that teachers teaching with

computer training were using ICT resources more than that the teacher teaching without computer training. The t-value of 3.2504 was found significant at 0.01 level with 88 degree of freedom. Hence, the working hypothesis that is ‘there is no significant difference between the mean ICT use score of secondary and higher secondary computer trained teachers and secondary and higher secondary computer untrained teachers’ is rejected. Which indicates that the mean score of ICT use of secondary and higher secondary teachers teaching with computer training was significantly higher than that of the teachers teaching without computer training. So, it can be said that use of secondary and higher secondary teachers about ICT is related with the computer training. So, it can be said that computer training of secondary and higher secondary teachers is related with their ICT use.

From table 4.30, it was observed that the means ICT need of secondary and higher secondary teachers teaching with computer training and the secondary and higher secondary teachers teaching without computer training were 8.95 and 12.88 respectively. The standard deviations of the teachers teaching with computer training and the teachers teaching without computer training were 11.62 and 8.24 respectively. The standard errors of means of the same group (teachers teaching with computer training and the teachers teaching without computer training) were 1.44 and 1.68 respectively. In terms of mean, standard deviation and standard error, it can be analyzed that the mean score of teachers teaching with computer training’s need for ICT was found to be less than that of the teachers teaching without computer training, so it can be said that teachers teaching with computer training’s ICT need was less than that the teacher teaching

without computer training. The t-value of 1.7726 was found not significant at 0.05 level with 88 degree of freedom. Hence, the working hypothesis that is 'there is no significant difference between the mean ICT need score of secondary and higher secondary computer trained teachers and secondary and higher secondary computer untrained teachers' is retained. So, it can be said that need of secondary and higher secondary teachers for ICT is not related with the computer training. So, it can be said that computer training of secondary and higher secondary teachers is not related with their ICT need.

From the analysis of table 4.30, it can be concluded that the variable 'Computer training' is related significantly with the ICT use of secondary and higher secondary teachers. Mean score of secondary and higher secondary computer trained teachers was higher than that of secondary and higher secondary computer untrained teachers, which indicate that computer trained teachers use more ICT resources for classroom teaching, professional development and personal development in comparison to the computer untrained teachers, Whereas it was not found significant for the ICT awareness and need of secondary and higher secondary teachers. So it can be said that Computer training of teachers is related as a variable only in case of ICT use of secondary and higher secondary teachers whereas it was not related in case of ICT awareness and need of secondary and higher secondary teachers.

4.6.2 POSSESSION OF PERSONAL COMPUTER

To find out the relation between ICT awareness, use and need of secondary and higher secondary teachers and their possession of personal Computer, mean, SD, SE of mean, were used and t-test was used to see the significance difference between the means score of ICT awareness, use and need of secondary and higher secondary teachers having personal computer and the secondary and higher secondary teacher not possessing personal. For this purpose, teachers were classified into two groups that is teachers having personal computer and the teachers not having personal on the basis of their responses in scale . Analysis of t-tests is given in table below:

Table - 4.7

Means, Standard Deviations, SEs of Means of Groups of secondary and higher secondary teachers (i) Having personal computer and (ii) Not having personal computer along with Number of teachers in Different Groups (No. of Tr.s), t-value, Degree of Freedom (DF) and Level of Significance

Variable	Possession of PC	No. of Tr.s	Mean	SD	SE of Mean	't' value	DF	Significance
<i>Awareness</i>	<i>Have PC</i>	349	21.00	10.37	1.66	1.3140	88	NS
	Don't Have PC	551	18.37	7.95	1.11			
<i>Use</i>	<i>Have PC</i>	349	31.21	29.13	4.67	1.2787	88	NS
	Don't Have PC	551	24.29	19.49	2.73			
<i>Need</i>	<i>Have PC</i>	349	8.95	11.55	1.91	0.8153	88	NS
	Don't Have PC	551	10.88	10.00	1.40			

* Significant at 0.01 level, ** Significant at 0.05 level, NS = Not Significant

From table 4.31, it was observed that the means awareness about ICT of secondary and higher secondary teachers having personal computer and the secondary and higher secondary teachers not possessing personal computer were 21.00 and 18.37 respectively. The standard deviations of the teachers having personal computer and the teachers not possessing personal computer were 10.37 and 7.95 respectively. The standard errors of means of the same group (teachers having personal computer and the teachers not possessing personal computer) were 1.66 and 1.11 respectively. In terms of mean, standard deviation and standard error, it can be analyzed that the mean score of teachers having personal computer was found more than that of the teachers not possessing personal computer, so it can be said that teachers having personal computer were more aware about ICT resources than the teacher not possessing personal computer. The t-value of 1.3140 was found not significant at 0.05 level with 88 degree of freedom. Hence, the working hypothesis that is 'there is no significant difference between the mean ICT awareness score of secondary and higher secondary teachers having personal computer and secondary and higher secondary teachers not having personal computer' is retained. So, it can be said that awareness of secondary and higher secondary teachers about ICT is not related with the possession of personal computer.

From table 4.31, it was observed that the means ICT use of secondary and higher secondary teachers having personal computer and the secondary and higher secondary teachers not possessing personal computer were 31.21 and 24.29 respectively. The standard deviations of the teachers having personal computer and the teachers not possessing personal computer were 29.13 and 19.49 respectively. The standard errors of means of the

same group (teachers having personal computer and the teachers not possessing personal computer) were 4.67 and 2.73 respectively. In terms of mean, standard deviation and standard error, it can be analyzed that the mean score of teachers having personal computer was found to be using ICT resources than that of the teachers not possessing personal computer, so it can be said that teachers having personal computer were using ICT resources more for their classroom practice, professional development and personal development than that of teacher not possessing personal computer. But the t-value of 1.2787 was found not significant at 0.01 level with 88 degree of freedom. Hence, the working hypothesis that is 'there is no significant difference between the mean ICT use score of secondary and higher secondary teachers having personal computer and secondary and higher secondary teachers not having personal computer' is retained. So, it can be said that ICT use of secondary and higher secondary teachers is not related with the possession of personal computer.

From table 4.31, it was observed that the means ICT need of secondary and higher secondary teachers having personal computer and the secondary and higher secondary teachers not possessing personal computer were 8.95 and 10.88 respectively. The standard deviations of the teachers having personal computer and the teachers not possessing personal computer were 11.95 and 10.00 respectively. The standard errors of means of the same group (teachers having personal computer and the teachers not possessing personal computer) were 1.91 and 1.40 respectively. In terms of mean, standard deviation and standard error, it can be analyzed that the mean score of teachers having personal computer need for ICT was found to be less than that of the teachers not possessing personal computer, so it

can be said that teachers having personal computer need for ICT was less than that of the teachers not possessing personal computer. But the t-value of 0.8153 was found not significant at 0.05 level with 88 degree of freedom. Hence, the working hypothesis that is 'there is no significant difference between the mean ICT need score of secondary and higher secondary teachers having personal computer and secondary and higher secondary teachers not having personal computer' is retained. So, it can be said that ICT need of secondary and higher secondary teachers is not related with the possession of personal computer.

From the analysis of table 4.31, it can be concluded that the variable 'Possession of Personal Computer' is not related significantly with the ICT awareness, use and need of secondary and higher secondary English medium school teachers. Teachers with having personal computer and the teachers with not having personal computer stand equal or nearer to equal in their ICT awareness, use and need.

4.7 FINDINGS OF THE STUDY

The findings of the present study are presented as under.

1. There was a low degree of ICT awareness of secondary and higher secondary English medium school teachers. The group of teachers were found heterogeneous in their awareness about ICT. .
2. There was a low level of the usage of ICT resources by the secondary and higher secondary teachers of Saurashtra Region. The teachers

were very in their use of these resources that is the group of teachers were heterogeneous in their use of ICT.

3. 44.65% of the secondary and higher secondary teachers told that they were not using ICT due to lack of skill.
4. 41.53% of the secondary and higher secondary teachers told that they were not using ICT due to unavailability of resources and very few teachers have shown that they were not using ICT because they were not interested in it. So finally we can conclude that secondary and higher secondary teachers were not using ICT due to either lack of skill or lack of resources.
5. Teachers have shown less degree of need for ICT (in terms of skill training and facility of resources). The secondary and higher secondary teachers group was heterogeneous in their ICT need.
6. 6. The variable `medium of instruction of teachers at secondary stage' was not found related significantly with the ICT awareness, use and need of secondary and higher secondary English medium school teachers. The mean ICT awareness, use and need scores of. secondary and higher secondary teachers with English as the medium of instruction and teachers with Gujarati as the medium of instruction did not differ significantly.
7. 7.The variable `type of school' was found related significantly with the ICT awareness and use of secondary and higher secondary teachers. Secondary and higher secondary teachers in private schools aware more about ICT in comparison to the secondary and higher

secondary teachers teaching at private aided schools. Private schools have more ICT resources and skilled teachers, it may be one of the cause for the private school teachers to use ICT resources more in comparison to teachers working private aided school. The relation was not found significant for type of school and ICT need of secondary and higher secondary teachers.

8. The variable `age` was found not related significantly with the ICT awareness, use and need of secondary and higher secondary teachers. Teachers with below mean age were as equal or nearer to equal in their ICT awareness, use and need as above or high/old age group teachers. So the relation was found not significant for age of teachers and their ICT awareness, use and need.
9. The variable `gender` was found not related significantly with the ICT awareness, use and need of secondary and higher secondary teachers. Male teachers and female teachers stand equal or nearer to equal in terms of their ICT awareness, use and need. So the Gender of the secondary and higher secondary teachers was not related with the ICT awareness, use and need.
10. 10.The mean performance of secondary and higher secondary teachers belonging to arts, science and commerce streams did not differ significantly in ICT awareness, use and need.
11. The variable `Degree` was found related significantly with the ICT need of secondary and higher secondary teachers. ICT need of graduate secondary and higher secondary teachers was lower than that

of the post graduate teachers. Whereas it was found not related with ICT awareness and use of secondary and higher secondary teachers.

12. The variable 'Training of teaching' was found not related significantly with the ICT awareness, use and need of teacher. Trained and Untrained teachers did not differ significantly in term on Mean ICT awareness, use and need.
13. The variable 'Designation' was found not related significantly with the ICT awareness, use and need of secondary and higher secondary teachers. Assistant and Senior teachers did not differ significantly in term of Mean ICT awareness, use and need.
14. The variable 'Marital Status' was found not related significantly with the ICT awareness, use and need of secondary and higher secondary teachers. Married teacher did not differ significantly in term on Mean ICT awareness, use and need in comparison to unmarried teachers.
15. The variable 'Category' was found not related significantly with the ICT awareness, use and need of secondary and higher secondary teacher. General category teacher did not differ significantly in term on Mean ICT awareness, use and need in comparison to other category teachers.
16. The variable 'Teaching Experience' was found related significantly with the ICT awareness of secondary and higher secondary teachers. Mean ICT awareness score of less experienced teachers was found more than that of more experienced teachers, which indicate that less experienced teachers more aware about ICT. Whereas it was found

not significant for the ICT use and need of secondary and higher secondary teachers.

17. The variable 'Total salary' was found related significantly with the ICT awareness and use of secondary and higher secondary teachers. Mean ICT awareness and use score of less salary paid teachers was found more than that of more salary paid teachers, which indicate that less salary getting teachers more aware about ICT and using more ICT resources for their classroom teaching, professional development and for personal development than the more salary paid teachers, Whereas it was not found significant for the ICT need of secondary and higher secondary teacher.
18. The variable 'Level of teaching' was found not related significantly with the ICT awareness, use and need of secondary and higher secondary teachers. Secondary teachers did not differ significantly in term on Mean ICT awareness, use and need in comparison to higher secondary teachers.
19. No true difference was observed in analysis of variance between the teachers teaching different subjects and their ICT awareness, use and need.
20. The variable 'medium of instruction at higher secondary stage' was found not related significantly with the ICT awareness, use and need of secondary and higher secondary English medium school teachers. Teachers with English as the medium of instruction at higher secondary stage and Teachers with Gujarati as the medium of

instruction at higher secondary stage stand equally or nearly equal in ICT awareness, use and need.

21. The variable `Computer training` was found related significantly with the ICT use of secondary and higher secondary teachers. Mean score of secondary and higher secondary computer trained teachers was higher than that of secondary and higher secondary computer untrained teachers, which indicate that computer trained teachers use more ICT resources for classroom teaching, professional development and personal development in comparison to the computer untrained teachers, Whereas it was not found significant for the ICT awareness and need of secondary and higher secondary teachers.
22. The variable `Possession of Personal Computer` was found not related significantly with the ICT awareness, use and need of secondary and higher secondary English medium school teachers.