



# Opinion, Thinking and Attitude towards Use of of ICT for educational purpose by Secondary School Head, Teachers and Students view of Pune District Area

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## ABSTRACT

Today's world is ICT based world, in current situation, Information and Communication Technology (ICT) is having a big impress on school education system of any country. A country like India, Information and Communication Technology (ICT) in school education is knowing as one of the important tools to make learner centric and become a helpful to reduce the technology gap between different socio-economic classes. A number of policies to provoke schools to use and deploy ICT and integrate it in the school curriculum by the government, but the reply is poor from the school.

Principals, teachers, and students are the main building blocks and important roles in the implementation of school education ICT in the classroom and their effective implementation. These stated building blocks of the school receiving the use of ICT in modern pedagogy is the key to its successful implementation in schooling. Current research shows that the lack of interest of principals, teachers, and students to use ICT in the classroom is one of the major barriers to adopting ICT at the grassroots level. There are currently several research reports that show and define these issues and opinions or attitudes towards the use of ICT for educational purposes.

This paper will try to discuss and focuses on opinion, thinking and attitude towards to use of ICT in education by Principal/head, teachers and students view of Pune district area. The paper uses regression analysis to find out how these three respondents give their opinion with different parameters and how the eagerness to use ICT can improve if some parameter migrated for the school.

**Keywords:** ICT, attitude toward ICT, head opinion, teachers' opinion, students' opinion

## INTRODUCTION

Any nation build with the help of powerful Education system. In the whole education system has deep implementations of ICT especially in dealing with major issues of access, equity, management, efficiency, pedagogy and quality. Information and communication technology (ICT) has changed many aspects of the way we live in a 21<sup>st</sup> century. Integrating ICT in teaching and learning is a highest priority on the educational reform agenda of any country. In modern education system, it is not restricted within the classroom. The recent development of technology has brought out the whole world outside the classroom. In modern society, ICT plays a extraordinary role in school education. ICT in schools provide many opportunities to teachers to transform their practices by providing the learners with improved educational content and more effective teaching and learning methods. The learning process improves with ICT and easy acquisition the basic knowledge through the provision of more interactive educational material that increases learners motivation and facilities. In school system at different levels the use of various multimedia devices such as Computers, OHP, Videos, Audios, Televisions, Projectors etc. offer more exciting and engaging learning environment for students. In 21<sup>st</sup> century teaching learning skills needed to shift from traditional teacher centered pedagogy to more learner centered method. With this in school education system not only teaching learning system but also administrative system can be improved by the use of ICT.

**What is ICT?** : ICT stands for Information Communication Technology.

**Information:** The I in ICT cover the topics such as the meaning and value of information.

**Communication:** The C in ICT refers to the communication of data by electronic means, usually over a distance. This is often achieved via a networks.





**Table 1: ICT use and Impact Opinions of Head of School surveyed**

<b>Opinion statement about Impact of Use of ICT for educational Purpose</b>	<b>Disagree</b>	<b>Agree</b>
<b>Computer and Internet should be used for:</b>		
(Q1) Students to do exercises and practice	00	59
(Q2) Students to access information	00	59
(Q3) Students to work in a collaborative way	00	59
(Q4) Students to learn in a autonomous way	00	59
<b>ICT use in teaching and learning positively impact on:</b>		
(Q5) Students Motivation	00	59
(Q6) Students achievement	00	59
(Q7) Students higher order thinking skills	00	59
(Q8) Students competence In transversal skills	00	59
(Q9) ICT is essential to prepare students for future	00	59
(Q10) ICT is fully utilized and entire change in school education	00	59

As researcher collected above data, it indicate that all school heads agree upon all questionnaire and give positive impact of use of ICT in educational purpose.

Here researcher finding the tree structured format summary of the Table 1 data and describe the data through classification and regression tree methodology (Recursive Partitioning Method)(CART), through this researcher find the RPART, it is evolutionary algorithm method used with the objective of creating a model that predicts the value of target (or dependent variable) based on the values of several input (or independent variable), also from this method researcher finding the importance of data and find important or valuable components of data rather than probability method and defining in the form of tree structured graph and describe the tree partitioning is as follows.

Here researcher uses questionnaire for collecting data contains question number 29 for the opinion questions, so the Q29 appear in tree structure. This data has processed as:

```
n= 59 node), split, n, loss, yval, (yprob) * denotes terminal node
1) root 59 47 Baramati (0.2 0.085 0.1 0.17 0.085 0.051 0.051 0.17
    0.085)
2) Q29.07=3 48 36 Baramati (0.25 0.083 0.1 0.19 0.1 0.062 0.062
    0.042 0.1)
4) Q29.04=3 33 23 Baramati (0.3 0.061 0.091 0.12 0.15 0.03 0.091
    0.061 0.091) *
5) Q29.04=4 15 10 Indapur (0.13 0.13 0.13 0.33 0 0.13 0 0 0.13) *
3) Q29.07=4 11 3 Pune City (0 0.091 0.091 0.091 0 0 0 0.73 0) *
```

Now researcher represents the above R coding result data in tree structure and recursive partitioning it with CART method and specifies the defining features as:

Response Variable: Area                      Method: CART  
 Variables used for partitioning:        Q29.1 to Q29.10 (rpart)  
 Number of Partition sets:                03

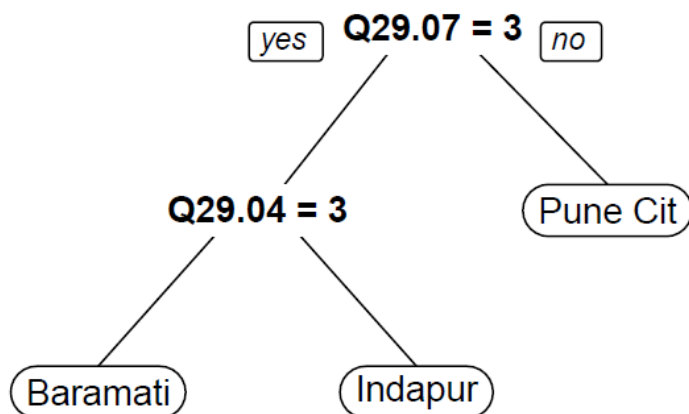
<b>Terminal Leaf Node</b>	<b>No. of Responses (n values)</b>	<b>Label</b>	<b>Defining features</b>
3:	11	Pune city	Q29.7 = 4
5:	15	Indapur	Q29.4 = 4, Q29.7 = 3
4:	33	Baramati	Q29.4 = 3, Q29.7 = 3

**Variable Importance:**

Q7	Q8	Q2	Q3	Q1	Q6	Q4	Q9	Q5	Q10
20	15	14	14	12	10	05	03	03	03

Above partitioning shows that, ICT used for students to learn in an autonomous way and is positive impact on student's higher order thinking skills in above stated regions.

Importance specify that all the school heads agree upon all the ICT use and its positive impact on students. This description shows in tree structure as:



**Fig: HT – Head Data Tree**

**School Teacher data analysis:**

Here researcher collect the information from the teachers to know about the attitude of it with their observations about To what extent teachers agree or disagree with each of the following statements about the use of ICT at school?

**Table 2: Attitude towards ICT**

Response→ Statements	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly Disagree (1)
ICT used for students to do exercises and Practice, retrieve information, work in a collaborative way and learn in an autonomous way. (1, 2, 3, 4)	64	161	11	0
ICT use in teaching and learning positively impact on student’s motivation, achievement, Higher order thinking skills, Competence in transversal skills. (5, 6, 7, 8)	86	140	10	0
ICT use in teaching and learning in essential to prepare students to live and work in the 21 <sup>st</sup> century. (9)	134	95	7	0
ICT to be fully utilized for teaching and learning complete changes in school needed. (10)	120	105	11	0

Above table opinions shows that teachers agree upon the statements stated in the table.

Here researcher finding the tree structured format summary of the Table 2 data and describe the data through classification and regression tree methodology (Recursive Partitioning Method)(CART), through this researcher find the RPART and defining in the form of tree structured graph and describe the tree partitioning is as follows. Here researcher uses questionnaire for collecting data contains question number 64 for the opinion questions, so the Q64 appear in tree structure.

n= 236 node), split, n, loss, yval, (yprob) \* denotes terminal node

- 1) root 236 188 Baramati (0.2 0.085 0.1 0.17 0.085 0.051 0.051 0.17 0.085)
- 2) Q64.08=4 89 65 Indapur (0.056 0.13 0.17 0.27 0.16 0.045 0.056 0.09 0.022)
- 4) Q64.09=3 10 4 Indapur (0.2 0 0.1 0.6 0 0 0 0 0.1) \*
- 5) Q64.09=4 79 61 Indapur (0.038 0.15 0.18 0.23 0.18 0.051 0.063 0.1 0.013)
- 10) Q64.02=4 13 8 Jejuri (0 0.31 0 0.15 0.38 0.15 0 0 0) \*
- 11) Q64.02=3 66 50 Indapur(0.045 0.12 0.21 0.24 0.14 0.03 0.076 0.120.015)
- 22) Q64.01=3 55 41 Indapur (0.018 0.15 0.24 0.25 0.16 0.0360.091



0.055 0)

44) Q64.06=3 26 18 Bhor (0 0.31 0.19 0.23 0.19 0.038 0.038 0 0)

88) Q64.04=4 15 10 Daund (0 0.2 0.33 0.33 0.067 0 0.067 0 0) \*

89) Q64.04=3 11 6 Bhor (0 0.45 0 0.091 0.36 0.091 0 0 0) \*

45) Q64.06=4 29 21 Daund (0.034 0 0.28 0.28 0.14 0.034 0.14 0.1 0) \*

23) Q64.01=4 11 6 Pune City (0.18 0 0.091 0.18 0 0 0 0.45 0.091) \*

3) Q64.08=2,3 147 104 Baramati (0.29 0.054 0.061 0.11 0.041 0.054  
0.048 0.22 0.12)

6) Q64.10=2,3 77 56 Baramati (0.27 0.1 0.052 0.18 0.052 0.078 0.065  
0 0.19)

12) Q64.04=2 18 6 Baramati (0.67 0 0 0 0 0 0 0.33) \*

13) Q64.04=3 59 45 Indapur (0.15 0.14 0.068 0.24 0.068 0.1 0.085 0  
0.15) \*

7) Q64.10=4 70 38 Pune City (0.31 0 0.071 0.029 0.029 0.029 0.029  
0.46 0.043)

14) Q64.01=3 39 25 Baramati (0.36 0 0.077 0.051 0.051 0.051 0.051  
0.31 0.051) \*

15) Q64.01=4 31 11 Pune City (0.26 0 0.065 0 0 0 0 0.65 0.032) \*

After that, the researcher represents the above R coding result data in tree structure and partitioning it with the help of CART method and specifies the defining features as:

Response Variable: Area                      Method: CART  
 Variables used for partitioning:        Q64.01 to Q64.10 (rpart)  
 Number of Partition sets:                10

Terminal Leaf Node	No. of ResponsesLabel (n values)	Defining features
15:	31	Pune City Q64.01 = 4 Q64.10 = 4 Q64.08 = 2, 3
14:	39	Baramati Q64.01 = 3 Q64.10 = 4 Q64.08 = 2, 3
13:	59	Indapur Q64.04 = 3 Q64.10 = 2, 3 Q64.08 = 2, 3
12:	18	Baramati Q64.04 = 2 Q64.10 = 2, 3 Q64.08 = 2, 3
23:	11	Pune City Q64.01 = 4 Q64.02 = 3 Q64.09 = 4 Q64.08 = 4
45:	29	Daund Q64.06 = 4 Q64.01 = 3 Q64.02 = 3 Q64.09 = 4 Q64.08 = 4
89:	11	Bhor Q64.04 = 3 Q64.06 = 3 Q64.01 = 3 Q64.02 = 3 Q64.09 = 4 Q64.08 = 4
88:	15	Daund Q64.04 = 4 Q64.06 = 3 Q64.01 = 3 Q64.02 = 3 Q64.09 = 4 Q64.08 = 4
10:	13	Jejuri Q64.02 = 4 Q64.09 = 4 Q64.08 = 4
4:	10	Indapur Q64.09 = 3 Q64.08 = 4

**Variable Importance:**

Q64.04	Q64.09	Q64.01	Q64.10	Q64.08	Q64.02	Q64.07
13	12	12	11	11	11	10
Q64.05	Q64.06	Q64.03				
10	6	5				

After analyzing the above data, in all the regions teachers' attitude or opinion towards the use of ICT is strongly agree and agree on following:

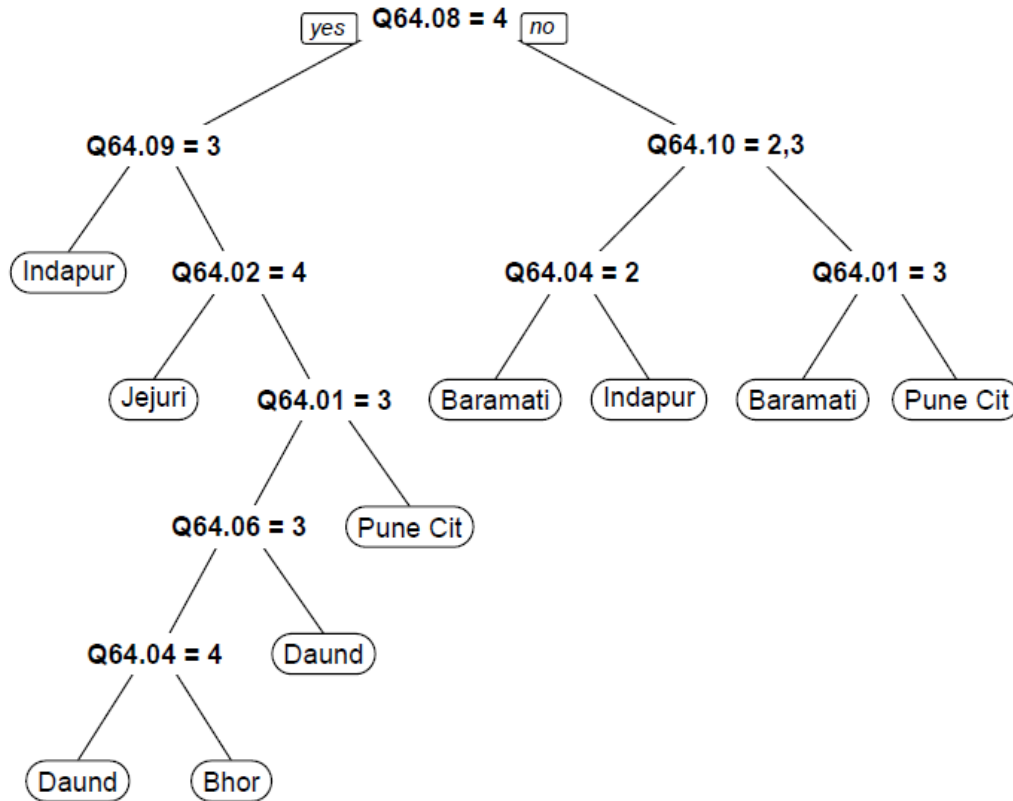
- ICT used for students to do exercises and practice, retrieve information, work in a collaborative way and



learn in an autonomous way.

- ICT use in teaching and learning positively impact on student’s motivation, achievement.
- ICT use in teaching and learning is essential to prepare students to live and work in 21<sup>st</sup> Century.
- ICT to be fully utilized for teaching and learning complete changes in school needed.

The responses represented in tree format as:



**Fig. TT: Teachers Data Tree**

**School Students data analysis:**

Here researcher collect the data from the secondary schools students from Pune district regions to know the thinking about students experience with ICT tools. The data shows the students attitude towards the use of ICT in learning. Means students thinking about their experience, up to what extent student agree, disagree, strongly agree or strongly disagree the concepts like important to use ICT, using ICT learning is really fun, interested to use ICT, time saving, it helpful for future life in study as well as in jobs.

After it, researcher finding the tree structured format summary of the collected data and describe the data through classification and regression tree methodology (Recursive Partitioning Method)(CART), through this researcher find the RPART and defining in the form of tree structured graph and describe the tree partitioning is as follows. Here researcher uses questionnaire for collecting data contains question number 28 for the opinion questions, so the Q28 appear in tree structure. It shows as:

```
n= 413 node), split, n, loss, yval, (yprob) * denotes terminal node
1) root 413 329 Baramati (0.2 0.085 0.1 0.17 0.085 0.051 0.051 0.17
0.085)
2) Q28.03=2,3 315 241 Baramati (0.23 0.095 0.086 0.13 0.073 0.063
0.054 0.16 0.1)
4) Q28.04=1,2,4 188 133 Baramati (0.29 0.096 0.11 0.16 0.053 0.043
0.069 0.1 0.069)
8) Q28.08=2 14 5 Indapur (0.071 0 0.14 0.64 0.14 0 0 0 0) *
9) Q28.08=1,3,4 174 120 Baramati (0.31 0.1 0.11 0.13 0.046 0.046
0.075 0.11 0.075)
18) Q28.07=1,4 68 42 Baramati (0.38 0.13 0.029 0.12 0.1 0.074 0.044
```



0.059 0.059) \*

19) Q28.07=2,3 106 78 Baramati (0.26 0.085 0.16 0.13 0.0094 0.028  
0.094 0.14 0.085)

38) Q28.02=2 13 4 Indapur (0 0 0.31 0.69 0 0 0 0 0) \*

39) Q28.02=1,3,4 93 65 Baramati (0.3 0.097 0.14 0.054 0.011 0.032  
0.11 0.16 0.097) \*

5) Q28.04=3 127 97 Pune City (0.15 0.094 0.047 0.087 0.1 0.094 0.031  
0.24 0.16)

10) Q28.01=1,2,3 113 93 Saswad (0.17 0.11 0.053 0.097 0.12 0.11  
0.035 0.14 0.18)

20) Q28.08=1,4 9 2 Indapur (0.11 0 0.11 0.78 0 0 0 0 0) \*

21) Q28.08=2,3 104 84 Saswad (0.17 0.12 0.048 0.038 0.12 0.12 0.038  
0.15 0.19) \*

11) Q28.01=4 14 0 Pune City (0 0 0 0 0 0 0 1 0) \*

3) Q28.03=1,4 98 70 Indapur (0.1 0.051 0.15 0.29 0.12 0.01 0.041  
0.21 0.02)

6) Q28.08=1,2,4 39 18 Indapur(0.026 0 0.26 0.54 0.1 0 0.051 0.026  
0) \*

7) Q28.08=3 59 39 Pune City (0.15 0.085 0.085 0.12 0.14 0.017 0.034  
0.34 0.034)

14) Q28.04=1,2,3 41 32 Baramati (0.22 0.098 0.098 0.15 0.2 0.024  
0.049 0.15 0.024)

28) Q28.02=1,2 14 7 Baramati (0.5 0.14 0 0 0.14 0 0 0.21 0) \*

29) Q28.02=3,4 27 21 Indapur (0.074 0.074 0.15 0.22 0.22 0.037 0.074  
0.11 0.037) \*

15) Q28.04=4 18 4 Pune City (0 0.056 0.056 0.056 0 0 0 0.78 0.056) \*

Researcher represents the above R coding result data and partitioning it with the help of CART method and specifies the defining features as:

Response Variable: Area Method: CART  
 Variables used for partitioning: Q28.01 to Q28.08  
 Number of Partition sets : 11

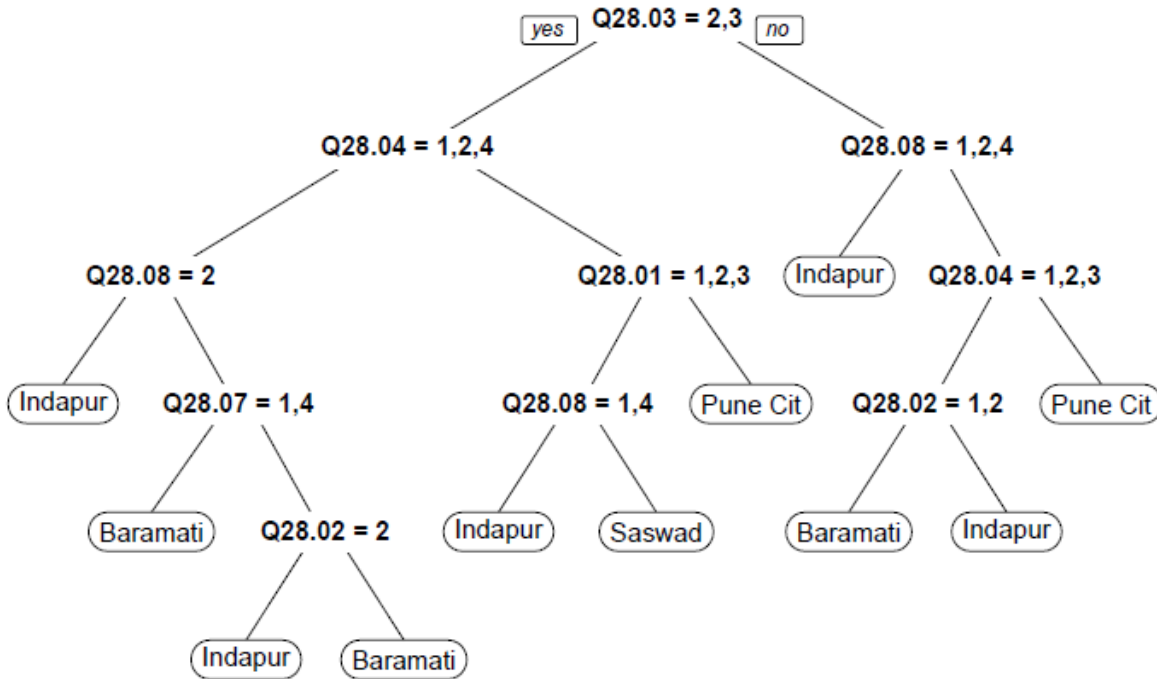
Terminal Leaf Node	No. of ResponsesLabel (n values)	Defining features
15:	n = 18 Pune city	Q28.04 = 4 Q28.08 = 3 Q28.03 = 1,4
29:	n = 27 Indapur	Q28.02 = 3,4 Q28.04= 1,2,3 Q28.08 = 3 Q28.03 = 1,4
28:	n = 14 Baramati	Q28.02 = 1,2 Q28.04 = 1,2,3 Q28.08 = 3 Q28.03 = 1,4
6:	n = 39 Indapur	Q28.08 = 1,2,4 Q28.03 = 1,4
11:	n = 14 Pune city	Q28.01 = 4 Q28.04 = 3 Q28.03 2,3
21:	n = 104 Saswad	Q28.08 = 2,3 Q28.01 = 1,2,3 Q28.04 = 3 Q28.03 = 2,3
20:	n = 9 Indapur	Q28.08 = 1,4 Q28.01 = 1,2,3 Q28.04 = 3 Q28.03 = 2,3
39:	n = 93 Baramati	Q28.02 = 1,3,4 Q28.07 = 2,3 Q28.08 = 1,3,4 Q28.04 = 1,2,4 Q28.03 = 2.3
38:	n = 13 Indapur	Q28.02 = 2 Q28.07 = 2,3 Q28.08 = 1,3,4 Q28.04 = 1,2,4 Q28.03 = 2.3
18:	n = 68 Baramati	Q28.07 = 1,4 Q28.08 = 1,3,4 Q28.04 = 1,2,4 Q28.03 = 2,3
8:	n = 14 Indapur	Q28.08 = 2 Q28.04 = 1,2,4 Q28.03 = 2,3



**Variable Importance:**

Q28.08	Q28.01	Q28.07	Q28.04	Q28.05	Q28.02	Q28.03	Q28.06
25	16	14	13	13	10	7	3

Analysis shows that students attitude towards use of computer , data shows that Pune city students strongly agree on use of ICT and ICT is important for learning and save time. Baramati and indapur students strongly disagree using ICT is for fun, also these are agree on learning through computer is useful and helpful to get a job. Some studetns of Saswad disagree and some agree, learning with computer is important and it needs for future study. This is represented in tree format as given below:



**Fig: ST13: Students data tree 13**

**CONCLUSIONS**

The present study can show the following inferences:

As per Head / Principal of the school point of view, their opinions or attitude shows that, ICT used for students to learn in an autonomous way and is positive impact on student’s higher order thinking skills in Pune City, Baramati and Indapur regions.

Also the data importance shows that all the schools heads agree upon ICT use and its positive impact on students.

As per teachers of the school point of view, in all the regions of Pune District teachers’ attitude or opinion towards the use of ICT is strongly agree and agree on following:

- Students to do exercises and practice, retrieve information, work in a collaborative way and learn in an autonomous way.
- Teaching and learning positively impact on student’s motivation, achievement and also it is essential to prepare students to live and work in 21<sup>st</sup> Century.
- ICT to be fully utilized for teaching and learning complete changes in school needed.

And the students analysis about attitude towards use of computer shows that, Pune city students strongly agree on use of ICT and ICT is important for learning and save time. Baramati and indapur students strongly disagree using ICT is for fun, also these are agree on learning through computer is useful and helpful to get a job. Some studetns of Saswad disagree and some agree, learning with computer is important and it needs for future study.







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