

# A Comparative Analysis of Computer Literacy in Rural And Urban Schools of Pune Region

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**Abstract—** Information and communication technology (ICT) has become modernized mediator in all aspects of life. Now a day's Information and Technology (ICT) plays an important role to improve the quality of education. In This Research paper we are focuses on finding the level of Computer Literacy of Rural and Urban teachers of Maval in Pune district and also we compare awareness of Computer Literacy with various factors like need, usage, benefits, learning environment etc. Pune is known for best educational city of Maharashtra and it consists of many integrated villages. Local Government provided various ICT tools and training to the rural schools but there is no comparative result or evaluations of the programs are done. This study is going to provide the current information about the rural school teachers regarding their computer literacy level and comparison between the rural and urban teachers. To find the desired outcomes we have used Questionnaire. Through this study we have analyzed factors influencing to rural and urban teachers and suggested methods to improve the computer literacy.

**Index Terms—** Information and Communication Technology (ICT), Computer Literacy, rural teachers.

## I. INTRODUCTION

Computer literacy is defined as the knowledge and ability to utilize computers and related technology efficiently, with a range of skills covering levels from elementary use to programming and advanced problem solving. [1] Now a day's computer has become an essential part of the life. And it is a giant concern for anyone to get an, opportunity to have fundamental computer literacy education in the, modern world. Computer literacy is considered to be a very essential skill to possess in developed countries. Organizations want their workers to

have basic computer skills because their organization becomes ever more reliant on computers. Many organizations try to use computers to help run their organization more rapidly and cheaper.

Knowing how to use a computer often allows you to get work done in a more organized, efficient and timely manner, especially if you perform a job that requires you to use a computer on a frequent or regular basis. Computers feature programs such spreadsheet, word-processing or presentation programs that help you to organize your thoughts, but you need to know how to manipulative these programs to be able to use their features, such as their text or imaging features.

Nowadays, being an information and computer technology (ICT) literate or ICT competent is necessary. People with sufficient ICT literacy skills should possess both the knowledge and ability to use computers and the associated technology efficiently. In educational sector, Maharashtra state government is investing considerably in promoting ICT literacy among rural teachers by supplying computers and e-learning method. It is a significant commitment towards achieving a fully developed nation through the Vision 2020 plan. Therefore, it is crucial for the rural teachers to be equipped with necessary ICT skills in response to the workforce requirement.

The main objective of this study is to make analysis of the computer literacy rate of rural and urban schools. And bring out positive development in learning Information technology to improve the quality of teaching by empowering rural teachers.

Depending on the analysis identify the factors which are affecting on the computer literacy. Also to increase computer literacy levels of teachers, by making them aware about the role of ICT and its usage in the process of development.

The commercial courses which were expensive were offered are delivered in English, whereas 99% of the population studies in their local language. Thus we had the immense need to start a centre for rural people to be

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educated on basics and advanced IT skills using the local language.

### II. LITERATURE SURVEY

This paper builds on the previous study and analysis of our project which helped us to achieve the objectives of our research work.

#### A. Study of various projects based on ICT.

The Akshaya project from Kerala has been a much discussed case for the community of practitioners and scholars working on technology and development. A unique feature of the project is its state-wide e-Literacy goal in which one member of every household was trained in the telecenters set up under Akshaya. Using a survey of 1750 households in the experimental area of Malappuram and a comparison group of neighboring Kozhikode, this work investigates the extent of e-Literacy and discusses the performance of service delivery using telecenters.[2]

Tel-Nek is a profit project started in May 2001 in Bidadi, a small town, 35 kms from Bangalore. The project is mainly funded by the Basque Autonomous Community through its Cooperative for Development Fund (FOCAD). In India, the implementing partner of the Tel-Nek project is Anchorage, an NGO primarily working in the area of digital divide. Tel-Nek's main objective is to foster community growth through training semi rural women in New Information and Communication Technologies (NICT) in local language adopting the suitable contextual form. That study of the Tel-Nek project gives lots of benefits for rural area. [3] [4]

#### B. Our Case Study

We had made a survey with the population of Devale village which is situated at taluka Maval in Pune district and we found that people in Devale are back as compare to urban citizens in education and ICT usage. [9]

Problems associated with the use of ICT by teachers.

- Lack of enough training for teachers.
- A lack of time for teachers to plan for effective use of ICT in their lessons.
- Shortage of computers.
- Lack of technical support.

### III. PURPOSE OF RESEARCH PROJECT

#### A. Introduction of research proposal

ICTs are key drivers for rural development. ICT and e-Learning offers opportunity to raise educational standards in schools. E-learning applications and processes include Web-based learning, computer-based learning, virtual education opportunities and digital collaboration. Computer literacy, the ability to use computers to perform a

variety of tasks, is becoming fundamental to the learning process. The purpose of this study therefore is to survey the literacy level and find out the extent to which students in rural area are computer literate. Based on the survey we are going to provide the training for quality improvement of rural teachers.

#### B. Origin of research problem

Though there are very few schools in rural areas, children and their parents are showing interest and availing school facilities in these remote locations. Children have to walk miles to reach their school. Rural schools pay special attention to children in these locations so that each child gets an equal and important opportunity. They promote reading and writing and enhanced basic education. These schools also provide study material to every student apart from, meals during school hours, uniforms etc. But the Computer education is given low importance also very few schools in villages give computer training. This is because of lack in many ICT resources of a clear rationale for their inclusion in teaching. Also lack of adequate training for teachers and technical support.

#### C. Objectives

Rural schools are working with conventional system of education where students depend mostly on lectures from the teacher through face to face interaction. To change the conventional methodology the students should be computer literate. They should be able to operate the computer, use basic applications such as words, be familiar with the internet even if at the basic level in order to send, receive, read e-mails, browse the net, to participate in on-line chats and above all be able to write and submit assignments and examinations on-line.

1. The major purpose of this study is to find the computer literacy of rural and urban school.
2. To find out the usage of computer in the rural and urban school.
3. To design a training program based on the analysis.
4. To find out the capability of accepting new technology by the rural teachers.

### IV. METHODOLOGY

The study was a descriptive survey that involved collection of data through questionnaire. Through this questionnaire analysis of the existing conditions in rural and urban primary schools regarding the computers and literacy level of the teachers is made. By using sampling technique we have collected rural data from Maval Taluka and urban data from Pimpri Chinchwad area in Pune.

By using sample technique we have selected 25 rural and 25 urban schools. 10 teachers from each school filled the

questionnaire and total 500 teacher's data is collected for the analysis. To understand the questionnaire we personally communicated to the teachers so that we can get the true data from them. For the questionnaire distribution and data collection we have taken the students from our department on the hiring service basis.

The questionnaire is based on the need, usage, importance and literacy level of the computer.

## V. RESULT AND DISCUSSION

Following are the findings based on the data we have collected. These are presented in the tabular format as follows.

Research Question: To what extent computer is used by teachers in rural and urban schools?

Table 1: Usage of computer in routine life by teachers.  
 No of respondent and responses (%) n= 500

Sr. No.	Question	Rural (250)	Urban (250)
1.	Can You ON / OFF Computer	Yes= 50 (20%) No= 200 (80%) No Need= 0(0%)	Yes= 210 (84%) No = 30 (12%) No Need= 0(0%)
2.	Do you have E-mail a/c?	Yes= 20 (8%) No= 180 (72%) No Need= 50(20%)	Yes= 210 (84%) No= 40 (16%) No Need= 0(20%)
3.	Can you use search engine for getting the educational information?	Yes= 0 (0%) No= 180 (72%) No Need= 70(28%)	Yes= 160(64%) No= 30 (12%) No Need= 10(4%)
4.	Are you using computer for the administrative work?	Yes= 0 (0%) No= 100 (40%) No Need= 150(60%)	Yes= 120(48%) No= 0(0%) No Need= 130(52%)

With reference to the research question on computer usage in schools, Table 1 above shows that only 50(20%) rural respondents indicated that they can on/off computers while

210(84%) were on the contrary, i.e. urban teachers can on/off the computers. 160(64%) urban respondents admitted that there are using search engines for educational purpose in the schools whereas 180(72%) teachers are not able to use search engines for getting educational information. This shows that more schools in urban areas using computers for educational purpose than those in the rural areas. However, both urban and rural teachers i.e. near about 150(60%) say that they are not using computers for administrative work. This shows that the ratio of computer is high in urban schools as compare to rural. But usage of computer by school teachers is very low, whether rural or urban.

Research Question: To find the computers available and teaching method at schools in the rural school and those of urban school?

Table 2: Availability of Computers and teaching skills in Rural and Urban Schools  
 No of respondent and responses (%) n= 500

Sr. No.	Question	Rural (250)	Urban (250)
1.	Is computer available in the School?	Yes= 120 (48%) No= 90 (36%) No Need= 40(16%)	Yes= 235 (94%) No = 15 (6%) No Need= 0(0%)
2.	How often you allowed students to use the computers?	One's in week= 0 (0%) Daily one hour= 0 (0%) One's in month= 30(12%) No=220(88%)	One's in week=205 (82%) Daily one hour=0(0%) One's in month= 45 (18%) No=0(0%)
3.	Who teaches computer subject to the students	I teach =0 (0%) Computer Specialist= 0(0%) Any computer literate Colleague= 30(12%) No one is available=220(88%)	I teach =0 (0%) Computer Specialist= 210(84%) Any computer literate Colleague=40 (16%) No one is available=0(0%)

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4.	Are you taking the exam on Computer subject?	Yes= 0 (0%) No= 200 (80%) No Need= 50(20%)	Yes= 200(80%) No=50 (20%) No Need= 0(0%)
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From table no 2 we can compare the result regarding availability of computers and teaching skill of the teachers. 120(48%) rural respondent said that computers are available in the school where as 235(94%) respondent say that computer is available in rural schools. Further 220(88%) rural respondent admitted that they do not allow the students to use the computer whereas 205(82%) urban respondent said that they allow the students to use the computers weekly. The table also shows that in 210(84%) respondent says in urban school computer is thought to the students and 200(80%) respondent says that examination is taken on computer subject. Where as in rural area 220(88%) respondent says that no one is available to teach the computer subject also they do not conduct exam. This analysis shows that in urban schools computers as well as teachers are available to teach the computer subject. But in rural schools there is lack of computers and experts for teaching computer subject to the students.

Research Question: To what extent are rural and urban environments contributing for improving culture of computer skills in their schools?

Table3: Contribution for Computer Literacy Skill enhancement.

No of respondent and responses (%) n= 500

Sr. No.	Question	Rural (250)	Urban(250)
1.	Can you think educational level will improve the using computer?	Yes= 182 (72%) No= 20(8%) No Need=10 (4%) Don't know=38 (15.2%)	Yes=250 (100%) No= 0(0%) No Need=0 (0%) Don't know=0(0%)
2.	Can you think that Computer subject should be compulsory in the curriculum?	Yes=175 (70%) No= 57(22.8%) No Need=18 (7.2%) Don't know=0(0%)	Yes= 250(100%) No= 0(0%) No Need=0 (0%) Don't know=(0%)
3.	Can you think that employment	Yes= 175(70%) No= 30(12%) No Need=0 (0%)	Yes=205 (82%) No= 45(18%)

	will rise with the help of computer literacy?	Don't know=45(18%)	No Need=0 (0%) Don't know=0(0%)
4.	Can you think that computer literacy is beneficial in education sector?	Yes= 160(64%) No=0 (0%) No Need=0 (0%) Don't know=90(36%)	Yes= 250(100%) No= 0(0%) No Need=0 (0%) Don't know=00(%)

As shown in table no 3 more teachers in urban areas agree that with the usage of computer we can improve educational level also they admit that computer should be one of the compulsory subject in curriculum. On the other hand 38(15.2%) respondents are not able to answer the importance of computer in education and 57(22.8%) teachers say that computer should not be compulsory. Further 175(70%) rural respondent and 205(82%) urban respondent says that employment will rise with the help of computer literacy. Further 250(100%) urban teachers think that computer literacy is beneficial in education sector where as 90(36%) rural teachers are not conscious about the importance of computer literacy in education sector.

Research Question: To what extent are rural and urban teachers thinking that there is an impact of computer literacy on students?

Table 4 : Impact of computer literacy on the students.

No of respondent and responses (%) n= 500

Sr. No.	Question	Rural (250)	Urban(250)
1.	What you think about computer literacy of students.	Useful only for entertainment=20(8%) No need to students=25(10%) Students will learn themselves=20(8%) Easier to students for study=185(74%)	Useful only for entertainment=10(4%) No need to students=0(0%) Students will learn themselves=20(8%) Easier to students for study=220(88%)
2.	Whether students performan	Stay away from outdoor games=120(48%)	Stay away from outdoor games=30(12%)

	ce change because of computer literacy	Ignore the study=0(0%) Reading & writing skill diminish=50(20%) Improves study with help of computer=80(32%)	) Ignore the study=0(0%) Reading & writing skill diminish=40(16%) Improves study with help of computer=180(72%)
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With reference to the above research question from table no 4 20(8%) rural teachers says that students will use computers only for entertainment where as 185(74%) says that they will use the computer for education purpose. The same response is given by the urban teachers. Further 120(48%) rural teachers say that students get distracted from outdoor games where as only 30(12%) urban respondent agreed with this. As urban teachers are having more usage of computer compare to rural hence 180(72%) urban teachers say that there will be improvement in the study of students with the help of computer.

#### A. SUMMARY OF THE FINDINGS

The findings were as follows:

1. That more urban schools possess computers, and students are allowed to use the computer on regular basis as compare to rural.
2. There are usually computer experts are available in urban schools for computer teaching as well as computer subject examination is conducted but in rural area no experts are available for the same.
3. Both rural and urban teachers think that with the help of computer literacy employment will rise.
4. That both rural and urban teacher's experience high accessibility to computers, which are used mainly for educational purpose rather than office work or individual use.
5. That more teachers in urban areas are computer literate and use computer literacy skills for educational purpose.
6. Both rural and urban teachers think that there is an optimistic impact of computer literacy on the student so as to improve the study also they think that they will become more confident in the academics.

#### VI. FUTURE GOALS

As we have decided the major four objectives of the study, based on that we have to achieve the two objectives i.e.

1. To design a training program based on the analysis.
2. To find out the capability of accepting new technology by the rural teachers.

These objectives will be the next work of our study and that will be achieved through the syllabus designing and providing the training to the rural teachers. Continues assessment and regular follow up will be taken and based on that we will find the capability of accepting new technology by the rural teachers.

#### VII. CONCLUSION

In this paper we have presented the importance of information and communication technology also we have expressed the need of computer literacy. As every where the computers are used paper shows the current status of the rural teachers in Maval, Pune. This paper gives the insight view of computer literacy of the rural teachers. Here paper express that rural teachers are less computer literate as compare to urban. Also in urban school more computers are available and qualified teachers are there to provide the training to students. We think that if computer literacy tainting is provided to rural teachers there will be revolutionary changes in students and teachers. It is mandatory to bring uniform education system in rural and urban school.

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#### REFERENCES

- [1] Computerized Manufacturing Automation: Employment, Education and the Workplace, Washington, US Congress of Technology Assessment, OTA CIT-235 April 1984, page 234
- [2] Pal. J. Nedeveschi, S. Patra, R. and Brewer, E. "A Multidisciplinary Approach to Open Access Village Telecenter Initiatives: The Case of Akshaya," E-Learning, 3(3), pp. 291-316, 2006.
- [3] "Information Technology for Learning and Development for Women in Rural India "ICALT '04 Proceedings of the IEEE International Conference on Advanced Learning Technologies IEEE Computer Society Washington, DC, USA ©2004.
- [4] Bailur, S. "Using Stakeholder Theory to Analyze Telecenter Projects," Information Technology for Development, vol.3:3, pp 61-80, 2006.
- [5] Meera K. Joseph, Theo. N. Andrew "Information and Communication Technology policy imperatives for ural Women empowerment: focus on South Africa" IEEE AFRICON 2009 23 - 25 September 2009, airobi, Kenya.
- [6] Rajalekshmi K.G.(2007) E-governance Services through Telecenters: The Role of Human Intermediary and Issues of Trust, Information Technologies and International Development,4,1, 19-35.
- [7] [www.cascadeamity.com](http://www.cascadeamity.com).

[8] <http://www.indiatogether.org>.

[9] Prof. Dipali Railkar & Prof Poonam Katyare “ICT the Modernize Mediator for Better Science Education in Rural Area” International Conference ICPCCS12 on Dec10-12, 2012



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