

# A STUDY ON THE IMPACT OF INFORMATION COMMUNICATION TECHNOLOGY AMONG THE NET GENERATION IN THANJAVUR DISTRICT, TAMIL NADU

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**ABSTRACT:** *Information Communication Technology (ICT) is potentially a powerful tool for extending educational opportunities and can provide remote learning resources. Computer and internet help contribute to youth development and make them fit for the modern competitive world and in particular to perform well in their educational spheres. But the rural students face the problem of digital divide to acquire, utilize and benefit for their academic purpose. It is necessary to identify the rural college students towards the usage and perception of the ICT. The main purpose of this study is to explore the extent of usage of ICT in higher Education by the research scholars in Thanjavur District. The Universe for this study constitutes the final year students of all disciplines of Arts and Science in Thanjavur district as these are the group that dealt with ICT in their areas of operation and studies. The study has observed that effective implementation of ICT can allow students more flexible access to study materials, reducing barriers of time and place of study. Students' interest in learning has increased due to ICT intervention.*

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**Key Words:** *ICT, Higher Education, students perception*

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## Introduction

India has one of the biggest systems of education with a total enrolment of 189.2 million, with 81.1 million girl students and 5.45 million teachers in schools, nearly 10 million students in 350 universities and 15,000 colleges and 420,000 teachers. This includes 11 open universities and 104 distance education institutions of dual mode; and the Open University system has an enrolment of about 20 percent of the total. The rate of growth since Independence is quite high, coverage has increased, dropout rate has reduced, and the percentage of girl students in education is increasing.

Information Communication Technology (ICT) is potentially a powerful tool for extending educational opportunities and can provide remote learning resources. ICT encourage students to take responsibility for their own learning and offers problem centered and inquiry based learning which provides easy access and information based resources. It is necessary to acquire the ability to use technology as a tool to research, organize, evaluate and communicate information and the possession of the fundamental understanding of the ethical or legal issues and use of information. Today knowledge of networking, communication and retrieval technologies has become core to the profession. It is believed that the use of ICT in education can increase access to learning opportunities. It can help to enhance the quality of education with advanced teaching methods, improve learning outcomes and enable reform or better management of education systems. The presence of IT has actually transformed the teaching, learning and administrative environment in post-secondary education worldwide and in order to keep pace with the rapidly changing landscapes it has become inevitable to implement technology integration.

## Review of Literature

Technology can enhance the teacher-student experience, **Joseph (2012)** in his study conclude that the educator-student learning experience 20 can't be replaced by technology due to human and social elements which technology lacks. Communication constitutes of 80 through language, while 20% is nonverbal such as writing. Education technology falls into the 20 percent category concluding that it is not the best tool.

**Kakbra and Sidqi (2013)** reveal that the students are heavy users of the computer and they tend to use 20 to 30 hours per week. The majority (97%) of the respondents accept that the ICT is used for teaching and learning purposes to get benefited bilaterally. Both the students and the teachers have positive attitude on the use of computers. Some of the student respondents opine that they learn computer and other ICT usage as independent learners, but most of the respondents accepted that they need training to use ICT and e-learning better. ICT is commonly used by college students to browse social networking sites.

**Gomez (2012)** aimed to explore the user's perception towards public access computing and venues contribution towards community development. The researcher found that the users perceive benefits from more access to information and it is helpful in cultivating new and existing relationships with friends and family. This study identified some of the negative consequences such as heavy usage computers which created anxiety, more dependants, addiction, privacy, more negligence, lazier etc.

**Farhat Bashir and Siddiqui (2012)** have made an attempt to explore the usage of ICT by the students in higher secondary schools of Jammu and Kashmir. They find that in general, students' usage of ICT is very low and girl students are not using any media including ICT at schools. Further the study reveals that most of the male students have opportunities to access ICT outside the school. Socio economic status also plays a vital role in the usage of ICT. The review of literature shows that ICT is playing a significant role in higher education, but its efficiency differs from place to place.

### **Need for the study**

Youth are more attracted to use ICT for information and knowledge. Computer and internet help contribute to their development and make them fit for the modern competitive world and in particular to perform well in their educational spheres. But the rural students face the problem of digital divide to acquire, utilize and benefit for their academic purpose. It is necessary to identify the rural college students towards the usage and perception of the ICT. Hence, analysing the previous research study and agency reports regarding users and non users of internet, it is vital to study the ICT usage among the youth (college students) in Thanjavur District. As the selected area is completely rural based, this study is most needful to find the capability and capacity of the college students towards ICT usage.

### **Statement of the Problem**

ICT can be integrated into curriculum delivery through use of e-learning, video conferencing, electronic platforms, World Wide Web and open source software. Much as investment in ICT continues to increase, information communication technologies have not been effectively used into lecture rooms in institutions of higher learning. Few institutions have tried to integrate ICT into teaching and learning environments, but they have faced a problem of high costs in purchasing ICT tools and maintenance (Farrell, 2007). And yet, failure to access and adopt information and communication technologies and knowledge critically has hindered sustainable progress for individuals and communities as we enter the 21st century (Katundu, 2000). Hence the need for this study arises due to the factors influencing ICT implementation in Higher Education.

### **Scope of the Study**

ICT increases the flexibility of delivery of education so that learners can access knowledge anytime and from anywhere. It can influence the way students are taught and how they learn as now the processes are learner driven and not by teachers. This in turn would better prepare the learners for lifelong learning as well as to contribute to the industry. It can improve the quality of learning and thus contribute to the economy. Thus, ICT enabled education will ultimately lead to the democratization of education. The effective use of ICT for the purpose of education has the potential to bridge the digital divide. Geographically, the study concentrates on selected institutions of higher learning in Thanjavur District.

### **Significance**

The study could provide vital information to the institutions of higher education about the technical bottlenecks and measures of dealing with them in prompting ICT implementation. The study would guide the Government to know the current position and practical issues of the college students towards the usage of ICT. Knowledge gained from this research study would be useful to educators and policy makers in making wise decision in relation to their ICT investment. Theoretically, the study would also prompt more researchers in the area having contributed to literature for future studies.

### **Objectives of the Study**

The main purpose of this study is to explore the extent of usage of ICT in higher Education by the research scholars in Thanjavur District.

- To picturise the role of ICT in Higher education and Research and to assess the use of electronic information resources by the respondents

- To identify and analyses specific factors that have hindered the use of electronic Information resources by the respondents
- To analyse the respondents attitudes towards use of ICT in Higher education.

### Research Methodology

The researcher adopted descriptive design for this study. The Universe for this study constitutes the final year students of all disciplines of Arts and Science in Thanjavur district as these are the group that dealt with ICT in their areas of operation and studies. The respondents were students studying in the Arts and Science Colleges affiliated to Bharathidasan University in Thanjavur district and with an appropriate representation of socio-economic demographics (gender, age groups, etc) which was selected. The respondents were selected using simple random sampling method. Hence about 175 students in Thanjavur District from both arts and science were selected.

The researcher made use of both Primary data and Secondary data. Primary data was collected through interview schedule, observation was thoroughly organized. A self prepared Questionnaire was used to collect the data. It was pretested with 10 sample respondents with a view to check the reliability and validity. The researcher collected data from 175 respondents personally with the use of Questionnaire. After data collection was over the researcher edited the responses given and coding was given for easy entering into the coding sheet for analysis of data.

### Key Findings of the study

#### Socio Demographic Profile of the Respondents

- About one third ie. 34.9 percent of the students were from Government colleges and the remaining students were from private colleges. Compared to the Government colleges, the Private college students were higher in representation.
- The students knowledge and awareness on technology also differs with their year of study, which affect the impact of students pattern of usage of ICT tools. This study illustrates that 26.9 percent of the respondents were from the first year and 43 percent of the respondents were from the third year and remaining respondents were scattered over other years.
- The study also shows that 38.3 percent were doing UG and 29.7 percent PG, 22.9 percent doing M.Phil and 9.1 percent were doing Ph.D. The degree of studying also influences their attitude and perception of students towards ICT usage.
- Male students in this study were more than the females. 70.9 percent were male while 29.1 percent were female. This shows that more men students are enrolling for higher education than females.
- The number of siblings the respondents have also affects the time spent by the students on ICT tools at home as they need to share among them. Most of the respondents (54.9 percent) had just one sibling, 23.4 percent of them have two siblings, 18.9 percent of the students had no siblings at all and only 2.8 percent of the students had more than three siblings.
- The respondents also differ in their monthly income of their family. 25.1 percent of the respondents' family income is between RS.20,000 to RS.30,000. 9.7 percent of the respondents' monthly family income is between RS.50,000 and RS.60,000. The affordability of ICT tools will get affected by their family income. Hence an understanding of these family income is significant to know whether the students have access to ICT gadgets like mobiles, computers, internet, etc.

### Practice and Usage of ICT Tools

- Microsoft word and Microsoft powerpoint are popular options with up to 46.7 percent often using it and 36.3 percent always use them. Flash and Adobe presenters are not used often. Thus students used computer for typing assignments and to make presentations, but are not actively involved in creating education related contents.
- Students are used to spend most of their time in their colleges and access to ICT and using it for their educational purpose. A vast majority of the students (89.1 percent) have access to ICT in their colleges.
- The study illustrates that majority of students had own one or another ICT device. The expenditure of these devices and their perceived requirements play a major role in owning these devices. A very small percentage of the student did not own a computer.
- Mobiles with internet facilities are the most popular tool with 80 percent of students owning at least one mobile with internet. This reflects the scenario in which mobiles have been a necessity

and almost every person owns one mobile. Since mobiles are available in all range of price and with basic models having web facility, mobile as ICT tool has a large scope in education purpose.

- More than half of the respondents i.e. 58.9 percent of the respondents owned the laptops through free distribution of the government. One third (33.1 percent) of total respondents did not own laptop and a little 8 percent of the respondents purchased from shop/dealers.
- Majority of the students did not have access to Wi-Fi in their campus, but majority of the students were able to access college computers even after lab hours. Therefore a significant number of students had access to ICT tools and hence ICT tools could be used to enhance the learning experience.
- The study reveals the time spent by the students on internet browsing and it varies largely among the various discipline of students. 21.7 percent of the respondents spent a minimum of 2 to 4 hours and 20.5 percent of the students who spent more than 10 hours per week. This concludes that there is a vast variation of internet usage among the students, some are spending relatively long hours surfing internet and some others very rarely use internet for one or the other purpose.
- The respondents usually login Gmail, Yahoo mail, Rediffmail, Microsoft, organizational email ids and others. The study shows that the majority (69.1 percent) of the respondents' login to use Gmail account, followed by Yahoo e-mails (14.3 percent), Microsoft e-mails (2.3 percent), Rediff e-mails (2.9 percent) and other ids (11.4 percent).
- Video-conferencing mode had never been experienced by cent percent of the students. This proves that lack of adequate knowledge on technology leads to apprehensions to adopt changing modern technology by learners is a major factor in the use of ICT in education.
- This study illustrates that all the respondents were using Social Network Sites (SNS) of Face book, Google plus, Twitter, LinkedIn, etc. almost all the days and spend considerable time. 55.6 percent of the respondents highly prefer to login facebook, followed by Google Plus (14.3 percent) and Twitter (9.7 percent). Other famous LinkedIn and Instagram were used by a few percentages of the respondents. This shows that Facebook and Twitter fulfill the needs of the students and others may not so.
- The present study reveals that majority of the respondents use internet in a week for limited days and one fourth of the total respondents are not using internet at all. It shows the college students do not have the passion to use internet or they may have constraints in accessibility to ICT resources.

### Knowledge of Respondents on ICT

- Only a small percentage (1.7 percent and 5.7 percent) do not have even a fair knowledge of basics of computer and 14.3 percent are very confident with computers. Majority (40.6 percent) rate themselves fair and good (37.7 percent) in computer basics. It was found that large numbers of students were comfortable with computers and with adequate training students may become more comfortable and confident at using computer systems.
- This study illustrates that respondents were balanced in their opinion towards content availability in instructive portals (2.69) and have said to browse internet on day- today basis to get more clarity on the topic being taught (2.67). Very few found the contents of the online portals are updated (2.49) and have occasionally visited instructive portal (2.50). This concludes that while students recognize the benefits of these portals, all of them do not use the portals as most believe that they are not updated.
- The study displays the respondents awareness on University portal and its services. Most of the universities activities are getting computerized. Activities like Result announcement (58.9 percent), and Examination (33.1 percent) are highly computerized. ICT is also used for notification and announcement, admission, etc. This concludes that ICT has also intruded into administrative activities and other functions like examinations and evaluations are yet to become computerized and it may be expected in near future.

### Perception of Respondents towards ICT

- ICT has changed the way students read books according to 62.3 percent of students. Many still prefer to write on their own referring to online materials. Students do cut and paste but only 14.4 percent give credit to source, while 13.2 percent rewrites the content and 3 percent say they never copy and paste.

- The students attitude towards ICT based teaching-learning is largely found to be positive with students agreeing that ICT can develop the teaching-learning process. The findings show that the students were not convinced of all the benefits although the students believe that ICT has positive impact on their lives and also on the overall quality of education.
- Majority of the respondents 44.7 percent and 47 percent strongly agree and agree that integrating ICT in education is significant. 20.2 percent of them were not sure if ICT can solve the shortcomings in traditional learning.
- ICT has impact on student's daily life as majority of the students 43.5 percent agree, and 31.8 percent strongly agree. 20.7 percent of the students were not sure, and 1.9 percent of the respondents feel ICT has nil impact on their daily life. In general students have positive attitude towards ICT. Yet there is a minor percentage of students who were not convinced that ICT can make a vital difference.
- Though integrating ICT is considered imperative, a few were not convinced that ICT changes the way they communicate with their teachers and that communication has been improved between teachers and students. This could be due to the fact that students have not fully used the existing ICT facilities.
- ICT has the most impact in simplifying the communication process within the colleges. ICT has improved learning and assist students clarify queries. Only 3.49 informed that ICT help them to score better in their examinations and 3.37 did crash courses through online. They clearly understood the impact of ICT on learning & agree it has enhanced the quality of the learning process.
- Among the barriers in using ICT for learning lack of time was found to have high mean of 3.40, followed by shortage of computer and lower bandwidth (3.36), along with higher amount of ICT tools. The use of ICT needs the investment of time in order to prepare and present the content. This therefore acts as a major obstacle. Access to technology also requires high costs.
- There were some disadvantages too along with advantages of using ICT. They were Addiction to the technology, not interacting face-to-face with people, stress, information overload and increases expenses. Getting information from several sources and the increased dependency on many ICT tools lead to addiction and remove the human approach from the teaching-learning process.
- ICT has an impact in the way teachers provide study materials to their students, as the respondents 17.86 percent and 14.29 percent felt that their teachers were circulating study materials through internet and e-mails respectively. But still the study materials are being largely circulated in the form of photocopy, and email. The blogs are not popular mode of communication among teachers and students.

### Testing of Hypothesis

**Hypothesis 1 :** There is no significant difference between arts and science students with respect to factors on ICT.

- **Knowledge on ICT :** The p value is  $<0.001$  the null hypothesis is rejected at 1 percent level of significance with regards to knowledge and impact of ICT on communication. Hence it is concluded that there is a significant difference between the arts and science students with regards to knowledge and ICT impact on communication.
- **Access to ICT :** The p value is  $<0.05$  the null hypothesis is rejected at 5 percent level of significance with regards to access and ICT impact on higher learning. Hence there is significant difference between arts and science students with regards to access and ICT impact on higher learning.
- **Attitude and barriers of ICT :** There is no significant difference between arts and science students with respect to attitudes and barriers in ICT, since the p value is  $>0.05$ . Hence the null hypothesis is accepted at 5 percent with respect to attitudes and barriers in ICT.

**Hypothesis 2 :** There is no significant difference between male and female students with respect to factors on ICT. 't' Test has been used to test this hypothesis.

- **Access and Knowledge on ICT :** The p value is  $<0.001$  with regard to access, knowledge, usage, overall KAP, and ICT impact on higher education, the null hypothesis is rejected at 1 percent level of significance. Hence it is concluded that there is a significant difference between male and female students with regards to access, knowledge, usage, overall KAP, and ICT impact on higher education.

- **Barriers of ICT** : The p value is  $<0.05$  for the barriers in ICT, the null hypothesis rejected at 5 percent level of significance. Hence there is a significant difference between the male and female students with regards to barriers in ICT.
- **Attitude towards ICT** : There is no significant difference between male and female students with respect to Attitude, since the p value is  $>0.05$ . Hence the null hypothesis is accepted at 5 percent with respect to attitude.

### Recommendations

- Subsidy may be given to the educational institutions that implement government projects through their ICT infrastructure to improve their students' skills.
- The Internet Service Providers (ISP) must provide free internet connections to the students' community to make them digitally skilled professionals. The colleges should have Wi-fi enabled campus for the benefit of the students and teachers.
- Web based teaching and learning softwares should be developed in coordination with government ICT projects. Institution must take initiatives on promoting educational forum and on linking the student and teacher community through Social Network Sites for educational purposes.

### Conclusion

The effective use of ICTs in teaching-learning process can help in bridging the gaps. The study has observed that effective implementation of ICT can allow students more flexible access to study materials, reducing barriers of time and place of study. Investment on ICT infrastructure alone is not enough; capacity building for the teachers and students is must. Students' interest in learning has increased due to ICT intervention. ICT has democratized learning in many ways. Students' extended interaction with peers and teachers enhance the learning outcomes. With the society becoming increasingly dependent on ICT, it is important for the future technology creators to be skilled in ICT based technologies.

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