

## IMPACT OF INFORMATION AND COMMUNICATION TECHNOLOGY ON LEARNING PROCESS : A STUDY

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### ABSTRACT

Information and Communication Technology (ICT) can be defined as a diverse set of technological tools used to communicate, to create, to store and manage information which includes computers, internet, broadcasting technologies like radio and television as well as telephony. In recent years, the ICT tools have become the backbone of social media through which various ways have been created to promote learning. ICT can enhance the quality of education in several ways by increasing learner motivation and engagement, by facilitating the acquisition of basic skills and by enhancing teacher training, making learning effective and interesting etc. ICTs can facilitate learning of learners in various ways. Various ICTs have been used to support learning, which include traditional media and electronic media. Technology such as online/internet is available round the clock. With the use of internet and World Wide Web, a wealth of learning materials in almost every subject can be accessed anywhere and at any time by an unlimited number of learners. Through this paper, an attempt has been made to focus on how ICT tools are helpful and beneficial to promote learning of the learners through randomly selected undergraduate students of Guwahati Metropolitan area. This study also attempted to know the attitude of the students towards ICT. Survey method has been used where self structured questionnaire has been prepared to generate Primary Data and Secondary Data has been collected through various journals, books, magazines etc. Statistical methods are being used for interpretation of the collected data.

**Key Words:** Information and Communication Technology (ICT), Social Media, Learning, Traditional Media, Electronic Media, Undergraduate Students.

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## Introduction

Education is a comprehensive and continuous process which helps the learner in imparting knowledge, developing skills and inculcating proper interest and attitude and life values in his/her personality. Education helps us to create knowledge based societies which contribute vastly in the economy and overall development of individual and the nation. Today we observe a tremendous explosion of knowledge in various fields. To assess this knowledge in different fields, we need the help of new technologies for proper use and application. Information and Communication Technology (ICT) is an important tool through which we can assess and apply the ever growing knowledge in overall development of a person and the society. ICT is that type of technology which is employed in the form of tools, equipment and application support that helps the user in collection, storage, application, transmission, manipulation and dissemination of information as accurately and efficiently as possible in order to enrich the knowledge, developing communication, decision making and problem solving ability of the user.

ICT has its modest beginning during later half of 19<sup>th</sup> century in USA when it was primarily applied in handling the bibliographic records and textual information encompassing scientific sectors. Gradually it was applied in stages ranging from industry to banking to management, education, medicine and healthcare to government administration, police, armed forces and other prime sectors. ICT in its traditional concept includes printed media like text books, journals, magazines, graphic materials, verbal information, audio-visual hardware equipments like radio, television, slide projectors, overhead projectors, tape recorders, audio-video recording devices etc. Unlike traditional technologies, Modern ICT includes combination of hardware and software, media and delivery systems like multimedia PC, laptop, notebook, digital video camera, multimedia projector like LCD, digital libraries, internet, audio-video conferencing, CD-ROM, DVDs, smart phones, virtual class rooms etc. Modern ICTs have brought a tremendous revolution not only in different fields but it has also inflicted a profound impact on the field of education. Modern ICT is one of the most important tools of social media which can contribute appreciably in the field of formal, informal and non-formal system of education as well as it helps the personnel ranging from students, teachers, administrators, researchers, counselors etc connected with these types of systems of education. Some of the major benefits of ICT on students and teachers are shared learning resources, shared learning spaces, promotion of collaborative learning and autonomous learning. ICT tools can help the learner in

different ways in teaching and learning situations. It can facilitate the learners in numerous ways. ICT can fulfill their urges for knowledge and contribute to their self improvement. It also helps them in getting self-paced auto-instruction related to curricular and non-curricular areas of education. Through ICT, learners get relevant sources of information, the methods and skills of extracting information and processing etc which in turn makes them confident in decision making, problem solving and modification of their behavior. Through this paper, an attempt has been made to focus on how ICT tools are helpful and beneficial to promote learning of the learners through randomly selected undergraduate students of Guwahati Metropolitan area. This study also attempted to know the attitude of the students towards ICT.

### Objectives of the Study

1. To study the effectiveness of ICT tools in promoting learning of the learners.
2. To study the attitude of the students towards ICT in teaching-learning situation.

### Hypothesis of the Study

1. ICT tools are one of the important tools of social media.
2. ICT tools helps in promoting learning.
3. The attitudes of students towards the usage of ICT tools in curricular courses are satisfactory.
4. Students are not willing to take burden of using ICT tools in addition to their traditional methods of learning.

### Review of Literature

ICT has become the backbone of teaching and learning process. Through the use of ICT tools, a better atmosphere in classroom has been created through which the students are getting more involved in a lively situation of gathering knowledge. **Kent and Facer (2004)** indicated that school is an important environment in which students participate in a wide range of computer activities, while the home serves as a complementary site for regular engagement in a narrower set of computer activities. Increasingly, ICT is being applied successfully in instruction, learning, and assessment.

ICT is considered one of the most powerful tools for educational change and reform. According to **Lowther, et al. (2008)**; **Weert and Tatnall (2005)**, number of previous studies indicates that an appropriate use of ICT can raise educational quality and connect learning to real-life situations. **Weert and Tatnall (2005)** have pointed out that learning is an ongoing lifelong activity where learners change their expectations by seeking knowledge, which departs from traditional approaches. According to **Chai, Koh and Tsai (2010)**, ICT is that type of tool which develops students' new understanding in their areas of learning. In addition, **Castro Sánchez and Alemán (2011)** encourage students to acquire specific technical skills to facilitate learning in ICT Environments. **Hutchison and Reinking 2011** are of the opinion that effective, timely, and continuous training is necessary to improve ICT skills and manage a technology-rich classroom.

### Research Methodology

This paper is primarily based on Survey Method. For this study, a Self Structured Questionnaire was prepared on the basis of the objectives determined. Primary Data has been collected from randomly selected undergraduate students of arts and science streams of deficit colleges under Guwahati Metropolitan area. 100 (Hundred) nos. of samples from 1<sup>st</sup>, 3<sup>rd</sup> and 5<sup>th</sup> Semester were collected for the study. Data are systematically analysed and interpreted with the help of statistical methods.

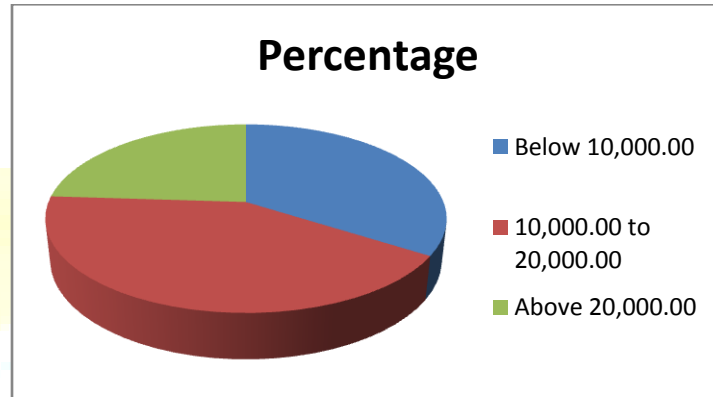
Secondary data were collected primarily from journals, books and internet etc.

### Analysis and Interpretation of Data

In this study, a self structured questionnaire was prepared on the basis of five dimensions ranging from General, Academic, Social aspects, Ability & Confidence level of the students and their attitude towards using ICT tools in learning. All total 100 undergraduate students from four colleges of Guwahati Metropolitan Area were randomly selected (50 from Arts and 50 from Science Stream) and Questionnaires were distributed for the study.

In this study, questions were prepared on the basis of five dimensions to measure the impact of ICT as a social media in promoting learning. The age of the students selected for the study fall under 18 to 20 years and majority of the students from Arts stream were girls (65%) and majority of students were boys in Science stream (57%). To know the economic background and its impact on

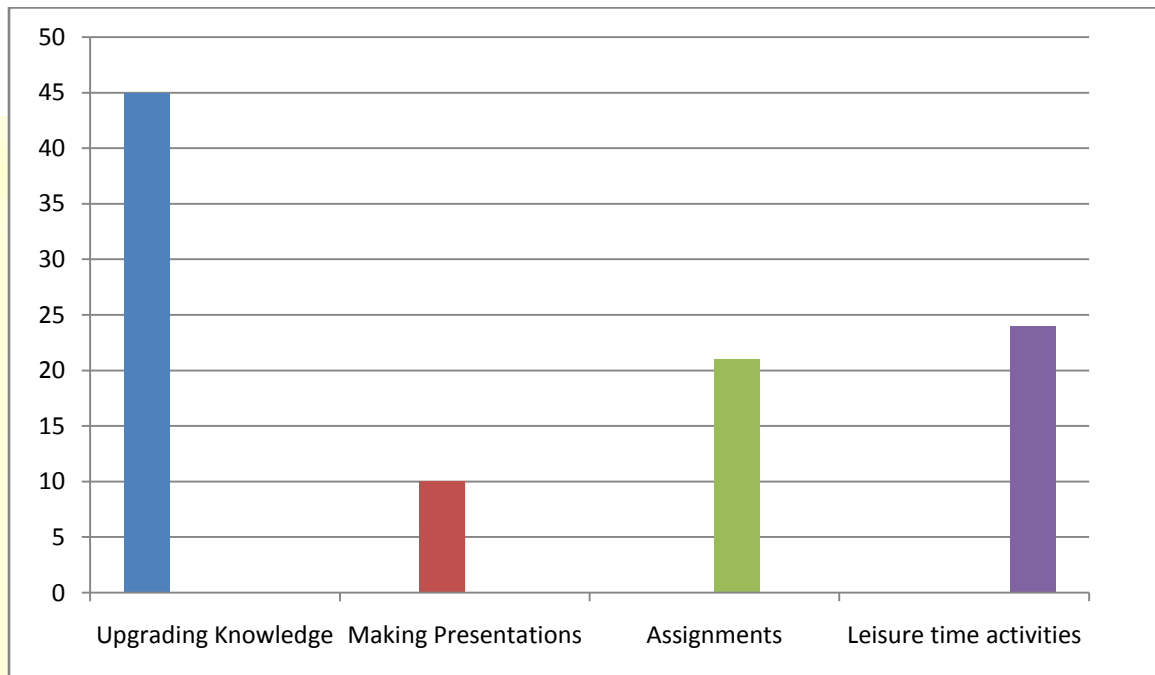
the learning, it was observed that 34% of students fall under lower economic level i.e. monthly income below Rs.10, 000.00, 42% students came from family having monthly income of Rs.10, 000.00 to Rs.20, 000.00 and the rest 24% were Rs.20, 000.00 and above.



### MONTHLY INCOME OF THE PARENTS OF THE STUDENTS SURVEYED

Majority of the students (55%) agreed that lower family income hampers the use of various modern gadgets in their study and the rest were not sure. Due to rapid development of science and technology, innovative methods and tools are developed in different field of education and majority of the students (80%) were aware of these latest tools of ICT. Amongst the various Social Media, students mostly preferred to use Print media than Telephony and Electronic media in their learning. In comparison to Traditional method, majority of the students (75%) showed keen interest on usage of ICT tools for better management of their studies and the rest were not sure about it. According to the students, the colleges have some of the infrastructures on ICT like Computer, Scanner, LCD Projector, Digital Camera, Internet, Telephone, FAX etc but they were not satisfied due to lack of proper maintenance and usage of these facilities. Almost all the students agreed on the unavailability of a proper infrastructural facility of ICT in their colleges and they suggested a well equipped modern ICT based facility should be present in the college. In response to the question on Computer Lab facilities in their colleges, majority (92%) asserted the shortage of computer facilities and lack of internet/ WiFi in their college campus. In addition, to the shortage of ICT tools in the colleges, the teachers were not also much keen to use ICT based tools during teaching-learning situations. According to the students, majority of the teachers use ICT tools less frequently and the rest showed complete abstinence. The ICT tools will be much more helpful if the student concerned have got prior training in this regard. On this survey, it has been found that 61% of the students had basic training in

computer related operations and the rest 39% did not have any training. The students were also asked upon the usage of ICT in their learning where majority (45%) used ICT for upgrading knowledge while only 10% of the students used it for making presentations and the other 21% and 24% used ICT for various assignments and leisure time activity respectively.



#### PERCENTAGE USAGE OF ICT IN LEARNING AS PER THE SURVEY

Answering to a question on suggestions regarding a well equipped ICT, majority of the students suggested a well equipped ICT in their college with 24 hrs internet facilities in addition to video conferencing and WiFi in the campus. Majority of the students agreed upon ICT as an important part of Social Media and they are of the opinion that it is a useful technology through which they can socialize and interact with their friends and acquaintances. In a question put forward to the students regarding degradation of values and ethics in modern day world and its relation with the impact of ICT, 42% of the students agreed upon the harmful effects of ICT as a media on the mindsets of the students. They opined that due to free access to numerous obscene websites and apps, the moral values of the students are getting eroded in today's world. A gender specific difference in confidence level was observed while questioning regarding need of assistance while using ICT. 43% of the girls needed assistance and 21% boys needed assistance while using ICT. To make a

presentation more informative and attractive, the importance of ICT cannot be ignored. Same voice was put forward by majority of the students regarding importance of ICT in making a presentation attractive and informative. To a question on ICT improving efficiency in learning and increasing motivation level than traditional method, 82% of the students supported and 18% were not sure. ICT in addition to paving a way for knowledge, it has given much more independence to the students in dealing with their studies in their own way. In a question, it was asked regarding the various facets of ICT like flexibility, active participation, self paced learning to the students. Majority of the students agreed upon all the three facets of ICT which makes it a better contender in making learning more enjoyable and fruitful. Apart from various facets of ICT, 56% of the students agreed that ICT plays an important part in better learning. The other two aspects were good retention of learning materials and performance. The last two questions dealt upon the facility to read e-journals in the library and ICT paving the way for personality development. Answering to the first question, majority of the respondents were negative. They opined that due to lack of proper ICT facilities and resources, their college lacks the provision of providing e-journals to their students and answering to the last question on Personality Development and role of ICT, maximum of the students were not responsive.

### **Hypothesis 1**

It has been found from the study that ICT tools are one of the important tools of Social Media. Majority of the students opined that ICT has given a new dimension in promoting learning of the students. As such, the hypothesis is accepted.

### **Hypothesis 2**

The hypothesis on ICT tools and its role in promoting learning is accepted. With the use of innovative information and communication technologies, the classroom has become a virtual ground of knowledge in addition to providing flexibility, retention of materials, multisensory learning experiences etc.

### **Hypothesis 3**

The attitudes of students towards the usage of ICT tools in curricular courses are satisfactory. This hypothesis is accepted because it has found that 82% of the students strongly agree to use ICT tools but due to lack of proper resource and facility in the colleges, they are not able to use the

modern technologies effectively. They also suggested proper facilities of internet, WiFi, Audio & Video Conferencing etc should be present in the colleges.

#### Hypothesis 4

Students are not willing to take burden of using ICT tools in addition to their traditional methods of learning. This hypothesis is not accepted because as per student's views, ICT will make their learning process much easier and flexible besides informative and attractive.

#### Conclusion

The study revealed that students are keen to adopt ICT as a tool of Social Media in their learning. Today the world is changing very fast. Due to the advancement in Science & Technology as well as in communication system, new and effective methods are coming up in the field of education. Today's education system is characterized by transition, transformation and revolution. All the processes of learning are changing from traditional to modern dimension resulting in digital classrooms. This tendency requires a change in the knowledge competencies and skills of the learners to adapt to these changing situations. To cope up with the technological breakthroughs going around the world, our students should get the maximum amount of facilities related to ICT so that they remain at par with the other fellow students of the advanced nations. Though India has become one of the software powers in the world but the real scenario of computer and internet as well as other ICT tools is yet to take a better form. Quality of the Education depends upon the quality and potentiality of the teachers. Therefore, the teachers should have proper training on the use of ICT tools in the classrooms so that the teaching-learning situation becomes much more interactive, informative and interesting. They should use ICT tools frequently in the classroom and the students should also be encouraged to use it in their learning. Through this study, an attempt was made to know the attitude of the students towards ICT tools and how these tools are beneficial in their learning process. If ICT is thoughtfully implemented, it has the potential to deeply influence learning in education for a better future. However, if we wish to gain the maximum benefit from the advances in ICT, we must ensure that its implementation follows sound guidelines and information from educational research. This technology will provide the students as well as teachers with great opportunities for learning and professional development.



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