

Use of ICT by the College Students: A Study in Dhemaji District of Assam

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Abstract: *Information and Communication Technology (ICT) is one of the most powerful and influential creation of human being that pervades all fields of human life including education. ICT becomes an inevitable component of higher education institutions and students in 21st century must enable to handle the technological gadgets and have the ICT awareness for meeting the immediate demands of education as well as workplaces. This study attempted to ascertain the level of ICT awareness among the college students and to study the ICT facilities available in the colleges of Dhemaji District, Assam. Descriptive survey method was used and data collected from a sample of 200 students from four colleges by using a Students' Response Questionnaire. The study found that government provincialised colleges have sufficient ICT facilities, but the same was not found in non-provincialised college. Majority of the students (52%) were found to be moderately aware of ICT use, whereas 25% of them low awareness of the same. Only (26%) of college students have undergone computer courses and 34% of them used internet. There is no significant difference between male and female students, and students of provincialised and non-provincialised colleges, but significant difference found between urban and rural students. ICT facilities in the colleges should be enhanced and used for students' learning.*

(Key Words: *ICT, ICT Use, College Students, ICT Awareness, ICT in Higher Education, Higher Education)*

INTRODUCTION

Information and Communication Technology (ICT) is one of the most powerful and influential creation of human being that pervades all fields of human life. But disparities exist between countries and even between groups within countries in access to and use of ICT resulting a clear digital divide in the society. While the impact of ICT on sectors such as banking, tourism, medicine, engineering etc. have been enormous, the uptake of ICT in education is fraught with difficulties (Oliver, 2002). Lack of funding, training among practitioners, motivation and perceived need among teachers to adopt ICT as teaching tools impede the required uptake of ICT in education (Wentz, L. and Starr, S., 2001).

Communication and information technologies are the very heart of educational process. It has played a vital role in formal and non-formal education. ICT becomes an inevitable component of higher education institutions too. Use of ICT has brought a significant change in the modus-operandi of entire educational institutions. ICT has wide impact on educational planning and administration, curriculum delivery and evaluation mechanisms, and most importantly students' education and career development as well. Bonwell & Eison (1991) were of the view that the idea of using technology to promote 'active learning' and enhance engagement levels in the classroom is not new. Tamin et. al. (2011) observed that the average student in a classroom where technology is used performed 12 percentile points higher than the average student in the traditional setting that does not use technology to enhance the learning process.

Students at a German school participated in a recent study conducted by the Bertelsmann Foundation (2023), which found that using media and technology increases motivation, enhances learning results, and imparts essential skills for the information age. One common worry regarding ICT is that pupils would become more isolated from their teachers and from one another as a result of its use. Khalid et al (2014) found that ICT integration into learning enhance the skills students need in the digital era, including how to use word processor, email, internet, and the other ICT skills. ICT use helps learners to be skillful in using technology, and ICT proficiency is highly needed by every student in the ever changing society and work market (Salomon & Schrum, 2007).

In the line of growing demand of ICT at the ideological and policy levels, it is essential to study how students fared in terms of ICT awareness and skills, and assess the factors that influenced their use of Internet. It is also to understand how their attitudes to the Internet are shaped in a scenario where there is no formal systematic Internet training programme. There seems

to be little literature on the adoption of ICT among college students in India.

NEED FOR THE STUDY

Information and communication technology (ICT) is extensively occupying all fields of knowledge and workplace e.g, science, industry, agriculture, health, business and commerce, governance and above all education. ICT is a tool for enhancing quality of teaching and learning at the higher education level, and for expanding opportunities for distance education. "The developments in Information Communication Technology (ICT) should be put into service, both to improve the quality of learning and access to learning. The possibilities of e-learning have to be exploited to the fullest extent, even as we continue to improve the quantity and quality of education through the face-to-face mode. Similarly the traditional face-to-face mode can be further improved by integrating ICT into the curriculum. This would require a continual programme of intensive and extensive exposure to the new pedagogy of learning to teachers as well as students and also additional investment for providing new infrastructure." (Panikker, 2007)

The International Telecommunications Union (ITU) indicates that only 6 percent of the population in India accessed Internet in 2007 (Veeramacheni et al, 2008). Among all states in India, Kerala has the highest penetration of computers and Internet. A prominent English newspaper, The Hindu, quoting the IT Secretary of Kerala, states that computer penetration in Kerala is double the national average (The Hindu, 2008).

In the last decade of the 20th century computers had become commonplace in a wide variety of settings: at home, at work and in educational institutions. For example, by July 2003 almost half (48%) of all UK households had Internet access (Office for National Statistics, 2003), while research for the UK Department for Education and Skills (BECTA, 2003) indicated that 98% of young people used computers either at home, at school or elsewhere. Higher education institutions now rely on computers for all aspects of their activities: administration, teaching and research.

ICT has been identified as one possible means of leapfrogging poor economics from peasant to modern information societies (UNECA, 2003). Changeiywo

(2002) observes that higher education in ICT is becoming widely recognized by several countries worldwide as a means of developing an efficient human resource capacity that is required to ensure economic growth and sustainable development. Education with ICT can provide a plenty of learning opportunities and information resources for developing employability among students (Gogoi, 2012). Application of information communication technology knowledge, skills and understanding has become a reality for educators and students of higher education.

Tochukwu, I. U. and Hocanm, F. T. (2017) conducted a study on awareness of students on the usefulness of ICT tools in education: case of EMU in Northern Cyprus. They found that majority of students of EMU used ICT tools for learning purpose and their general awareness on the use of ICT tools is relatively very high and they are moderately skilled for the abilities that are needed to use such tools in their learning process. The study also observed that more than 75% of the students have a positive attitude towards the usefulness of ICT tools in their general learning process.

Alagu, A. and Thanuskodi, S. (2018) found that students found difficulty in identifying their needs, online searching, database searching, and internet browsing subscription requirements and challenges; hence their low-level ICT establishing difficulty against the full exploration of information resources. The study recommended that there is need to improve the access of the student to ICT in an oriented training program for rural students improve their level of using ICT resources.

Vera Ngozi Okonoko and Ufuoma Eruvwe (2020) conducted a study on awareness of Information and Communication Technology-Based Information Resources in Library User Education Programmes in Colleges of Education in Southern Nigeria. The study found that sixty-five percent (65%) colleges have the ICT-based resources for user education programmes and utilized for the awareness and utilization of ICT-based resources for user education programmes in the South-South colleges of education libraries; both librarians and users were moderate in the awareness of ICT-based resources in most of the State Colleges of Education; and there was significant difference between the mean responses of librarians and users in the level of awareness of ICT-based resources for user

education programmes in South-South colleges of education libraries.

It is obvious that all persons concerned with education including students need to have adequate knowledge and skills of ICT to cope up with the demand of global and technological needs. More particularly at the level of higher education, students must enable to handle the technological gadgets and have the ICT awareness for meeting the immediate demands of education as well as workplaces for which they are prepared. But the present status of ICT competency among the students is not up to the mark. It is alleged that most of the students in general education system are still far away from the ICT uses and they adopt the traditional approach for their education and daily works. Even, in technical education, the scenario is not encouraging. Many technical college teachers are not using ICT facilities for teaching technical trades/subjects (Robert, 2003). Chauhan et. al. (2000) revealed a positive impact of ICT on reading habits of college students that reading habit is changed from paper based to internet based reading. Dables (2006) found that majority of the students (58%) of vocational and technical education browse and search internet for gathering information.

However, ICT awareness is although inevitable for college students and use of ICT tools and applications are utmost significant for the present digital era, but no scientific study has been made to ascertain the use of ICT tools and level of ICT awareness of college students in Dhemaji District of Assam. All the colleges of Dhemaji District are rendering education in general nature. Hence, whether the students of these colleges are aware to the ICT or not is a significant problem for investigation. It is in this context, the need is felt to ascertain the use of ICT tools and level of ICT awareness among the college students of Dhemaji District.

STATEMENT OF THE PROBLEM

The present study is stated as “Use of ICT by the College Students: A Study in Dhemaji District of Assam” with a view to answer the following questions—

- (i) What are the ICT facilities available for students in the colleges of Dhemaji District of Assam?
- (ii) What are the ICT tools and applications used by the college students?
- (iii) What is the level of ICT awareness among the college students?

OBJECTIVES OF THE STUDY

1. To study the ICT facilities available for students in the colleges.
2. To study the ICT tools used by the college students.
3. To find out the level of ICT awareness among the students.
4. To make a comparative analysis of ICT awareness between male and female students, rural and urban students, and students of govt. provincialised and non-provincialised colleges.

HYPOTHESIS

In order to achieve the objective No. 3, the following hypotheses were tested in the present study:

Ho: There is no significant difference between male and female students; rural and urban students, and students of govt. provincialised and non-provincialised colleges in terms of awareness towards ICT.

DEFINITIONS OF KEY TERMS

Information and Communication Technology (ICT): The name ICT is derived its name from computer technology and communication technology that is the application of computers and telecommunication equipment to store, retrieve, transmit and manipulate data often in the context of a business or other enterprise. The term is commonly used as a synonym for computers and computer networks, but it also encompasses other information, distribution technologies such as television and telephones.

ICT, in the present study may be defined as the technology related to computer technology, internet (networking), and communication technology, particularly the technology related to the use mobile phone.

College Students: College students generally mean the students who are admitted in a college for their education. College students, in the present study, refer to those students who were enrolled in colleges for getting undergraduate degree programmes. Both the government provincialised as well as non-provincialised colleges in the study were included while selecting the students for collecting data for the study.

METHODS AND PROCEDURE

The present investigation made an attempt to find out ICT awareness among the college students of Dhemaji district in Assam. It is specifically concerned with the

study of the ICT facilities provided by the colleges as well as the basic and preliminary knowledge of students about computer technology, internet technology and the use of mobile phones. Thus, the descriptive method was found suitable for the study since it made an attempt to reveal the existing knowledge of ICT among the students.

Population and Sample

The population or universe of the present study was defined as all the college students of Dhemaji district in Assam. Four colleges, two govt. provincialised and two non-provincialised colleges were selected randomly and 200 students (a quota of 50 students from each college) were selected in the final sample for data collection by using purposive incidental sampling technique.

Tools

In order to collect the pertinent data for the present study, Students' Response Questionnaire were developed and used for data collection. The Questionnaire included the items pertaining to computer and internet facilities; use of computer, internet and mobile phone; and basics of computer and networking technology along with general information of the respondents.

Statistical Techniques

The statistical techniques used in the present study were mostly frequency, percentage, First Quartile (Q₁), Third Quartile (Q₃), Mean, Standard Deviation and t test.

ANALYSIS AND INTERPRETATION OF RESULTS

(a) ICT Facilities Provided by Colleges

ICT facilities provided by the provincialised and non-provincialised colleges were found out separately and the results in Table 1 shows that all the students (100%) of provincialised colleges reported that their colleges have sufficient computers, and access to internet facilities; and provided computer course to the students respectively. Moreover, only 31% students revealed that their teachers used computer/laptop/internet in classroom teaching; while majority of them (69%) did not reveal the same. But it is discouraging to note that all the students (100%) of non-provincialised colleges reported that their colleges did not have sufficient computers and access to internet facilities, did not provide computer courses, and no teacher of used computer/laptop/internet in classroom teaching as revealed by 100% students of these colleges.

Table 1: ICT Facilities of the Govt. Provincialised and Non - Provincialised Colleges

Facilities	Provincialised		Non-provincialised	
	f	%	f	%
SRQ: Does your college have sufficient computers?				
---- Yes	100	100	Nil	Nil
---- No	Nil	Nil	100	100
SRQ: Does your college have access to internet facilities?				
---- Yes	100	100	Nil	Nil
---- No	Nil	Nil	100	100
SRQ: Do your teachers use computer/laptop/internet in classroom teaching?				
---- Yes	31	31	Nil	Nil
---- No	69	69	100	100
SRQ: Does your college provide any computer course?				
---- Yes	100	100	Nil	Nil
---- No	Nil	Nil	100	100
	N = 100		N=100	

(b) ICT Used by the College Students

The present study also investigated the use of computer, internet and mobile phone by the college students. The results analysed in Table 2 indicate that out of total 200 students, only 26% students have

undergone any computer course, whereas most of them (74%) did not have the same.

Only 34.5% students used internet; whereas most of them (65.5%) did not use internet because, they did not know how internet can help them (53.5%); they did not know how to use internet at all (55%); no one to

show them how to use internet (29%); and they did not have money to pay for using internet (10%) respectively.

Similarly, all the college students (100%) used mobile phone for voice call (100%), SMS (98%), Multimedia

message (28.5%), GPRS/Internet (28%), File Sharing (34%), FM Radio/Listening to music (52.5%), and Filming (Photo & video) (88%), respectively.

Table 4.2: Use of Computer, Internet and Mobile Phone by the College Students

Facilities	f	%
SRQ: Have you undergone any computer course?		
---- Yes	52	26
---- No	148	74
SRQ: Have you ever used the internet?		
---- Yes	69	34.5
---- No	131	65.5
SRQ: If not, which of the following reasons affect you for not using internet?		
(a) You have no interest in internet	Nil	Nil
(b) You don't know how the internet can help you	107	53.5
(c) You don't know how to use internet at all	110	55
(d) No one to show you how to use internet	100	29
(e) Your parents do not allow to go to internet café	Nil	Nil
(f) You don't have money to pay for using internet	26	10
SRQ: Do you use mobile phone?		
---- Yes	200	100
---- No	Nil	Nil
SRQ: Which of the following services you use on your mobile phone?		
(a) Voice Call	200	100
(b) SMS	196	98
(c) Multimedia message	57	28.5
(d) GPRS/Internet	56	28
(e) File Sharing	68	34
(f) FM Radio/Listening to music	105	52.5
(g) Filming (Photo & video)	176	88

N = 200 (Multiple responses possible)

(c) Level of ICT Awareness

To find out the level of ICT awareness of the college students; the present investigator calculated Q_1 and Q_3 to find out the low, moderate and high ICT awareness among the students. ICT awareness score below 29.5 (Q_1) implied low awareness, above 37.39 (Q_3) were high awareness and between 29.5 and 37.39 were considered as moderate ICT awareness among the college students.

As regards the level of ICT awareness, the results in Table 3 indicate that about one fourth of the students (23%) were highly aware whereas a good number of them (52%) were found to be moderately aware with the same. It is to be noted that as many as 25% of college students of Dhemaji district were shown low ICT awareness.

Table 3: Level of ICT Awareness among the College Students

ICT Awareness Score	f	%	Level of Awareness
Q_3 (37.39)	46	23%	High
$Q_1 - Q_3$	104	52%	Moderate
Q_1 (29.5)	50	25%	Low

N= 200

(d) ICT Awareness of Male and Female Students of Colleges

Out of total 200 college students 108 were female and 92 were male respondents. The scores of these 200

respondents were analyzed, separately to compute Mean and S.D. and thereby found out the t-value to ascertain the difference between male and female with respect to their ICT awareness.

Table-4: Difference of ICT Awareness between Male and Female Students of College

Sex	N	Mean	S.D.	D	t	5% level of significance
Male	92	33.48	6.54	0.23	0.26	1.96
Female	108	33.25	6.1			

The results analyzed in Table-4 show that 33.48 and 33.25 are the Means of male and female students; 6.54 and 6.1 are found S.D.s for the same respectively. The difference between the Means of the male and female students is only 0.23.

The obtained t-value is 0.26 which is much less than tabulated t at 5% level of significance, i.e. 1.96. It is not significant at 5% level of significance and the present hypothesis would be accepted and might be concluded that there was no significant difference between male

and female students of colleges of Dhemaji district with regard to their ICT awareness.

(e) ICT Awareness of Rural and Urban Students of Colleges

The ICT awareness scores of the whole sample were classified into two groups in terms of their locality, i.e. rural and urban. In the present study 179 respondents were rural and 21 were found as urban. Mean, S.D. and t value were computed which are shown in Table-5 where 32.95 and 36.05 are the Means; 6.35 and 6.28 are the S.Ds. of rural and urban students respectively.

Table-5: Difference of IT Awareness between Rural and Urban College Students

Locality	N	Mean	S.D.	D	t	5% level of significance
Rural	179	32.95	6.35	4.90	2.14	1.96
Urban	21	36.05	6.28			

The obtained t-value is 2.14 which is greater than the tabulated t at 5% level of significance; i.e. 1.96. Thus, the present hypothesis would be rejected at 5% level of significance. Hence, there was a significant difference between rural and urban students of colleges of Dhemaji district with regard to their ICT awareness.

The whole sample was classified into two groups-one was students of provincialised colleges and another was non-provincialised colleges. Table-6 shows Mean, S.D. and t-value of the two groups.

The results analysed in Table-6 show that 33.5 and 33.05 are the Means of students of provincialised and non-provincialised colleges; 5.68 and 6.34 are the S.Ds. for the same respectively. The obtained difference between the Means of the provincialised and non-provincialised group is .66.

(f) ICT Awareness of the Students of Provincialised and Non - Provincialised Colleges

Table-6: Difference of ICT Awareness between the Students of Provincialised and Non-provincialised College

Management	N	Mean	S.D.	D	t	5% level of significance
Provincialised	92	33.50	5.68	0.66	0.53	1.96
Non-provincialised	108	33.05	6.34			

The t value (0.53) was found out which is less than the tabulated t at 5% level of significance; i.e. 1.96. Hence, the null hypothesis would be accepted and may be inferred that there was no significant difference between the students of provincialised and non-

provincialised colleges in terms of awareness towards ICT of Dhemaji district in Assam.

FINDINGS OF THE STUDY

1. All provincialised colleges (100%) under investigation have sufficient computers, access to

internet facilities and provided computer education course to students, whereas all non-provincialised colleges did not have the same.

2. Only 31% students of provincialised colleges revealed that their teachers used computer/laptop/internet in classroom teaching while most of them (69%) did not reveal the same. However, no teacher of non-provincialised colleges used computer/laptop/internet in classroom teaching as revealed by 100% students of these colleges.
3. Out of total 200 students, only 26% students have undergone any computer course, whereas most of them (74%) have not undergone the same.
4. Only 34.5% students used internet; whereas most of them (65.5%) did not use internet because, they did not know how the internet can help them (53.5%); they did not know how to use internet at all (55%); no one to show them how to use internet (29%); and they did not have money to pay for using internet (10%) respectively.
5. All the college students (100%) used mobile phone for voice call (100%), SMS (98%), Multimedia message (28.5%), GPRS/Internet (28%), File Sharing (34%), FM Radio/Listening to music (52.5%), and Filming (Photo & video) (88%), respectively.
6. About one fourth of the students (23%) were highly aware whereas a good number of them (52%) were found to be moderately aware with the same. It is to be noted that as many as 25% of college students of Dhemaji district were shown low IT awareness.
7. There was no significant difference between male and female students of colleges of Dhemaji district with regard to their IT awareness.
8. There was a significant difference between rural and urban students of colleges of Dhemaji district with regard to their IT awareness.
9. There was no significant difference between the students of provincialised and non-provincialised colleges in terms of awareness towards IT of Dhemaji district in Assam.

OBSERVATIONS AND DISCUSSION

ICT becomes an inevitable component of higher education institutions and ICT, if sensibly deployed and with carefully selected software, can positively affect many aspects of the institution, from a healthy questioning of present teaching practices to a gradual improvement of the quality. In a Meta analysis of over 500 individual studies, James Kulki (1980) found that

students usually learn more in classes in which they receive computer-based instruction; they learn their lessons in less time with computer-based instruction.

The college atmosphere plays an important role in making ICT awareness among the students. More particularly, the ICT facilities of the colleges are significant to have computer and internet knowledge among the students. It is interesting to note in the present study that provincialised colleges have sufficient computers, access to internet and provided computer courses to the students, whereas non-provincialised colleges did not have these from which students of these colleges might be deprived from. This may be due to the fact that non-provincialised colleges may face more resource crunch in case of financial resources as well other resources.

Computer education is most important for the students to cope up with the present day situation which is required in various fields. But, the study found that only 26% students have undergone any computer course, whereas most of them (74%) have not undergone the same. This is incorporated with the findings of the study made by Raji and Godsy (2010) reveal that 45% boys and 55% girls had received training in computers and knew basic office application. Similarly, only 34.5% students have used internet; whereas most of them (65.5%) have not used internet because, they did not know how the internet can help them (53.5%); they did not know how to use internet at all (55%).

Veeramacheneni et. al. (2008) also found that estimates from the International Telecommunications Union (ITU) indicate that only 6 percent of the population in India accessed Internet in 2007. Raji and Godsy (2010) also concluded that 58% girls and 78% boys used internet. The study also found that all the college students (100%) used mobile phone which is in conformity with the findings of Raji and Godsy (2010) who revealed that 86% boys and 70% girls use mobile phones.

It is to be noted that majority of the students (52%) were found to be moderately aware and as many as 25% of college students were shown low ICT awareness which may be due to fact that they still do not know how computer and internet can help them (53.5%) and they did not know how to use internet at all (55%).

ICT awareness may be the results influenced by different factors, such as sex, locality, types of management of institutions, etc. But the present study

found that there was no significant difference between male and female students of colleges with regard to their ICT awareness which is in conformity with the findings of Kohli and Murlidhar (2013) who concluded that there is no significant difference between male and female students as far as awareness about internet is concerned. Similarly, present study also found that there was a significant difference between rural and urban students of colleges of Dhemaji district. In the study, Raji and Godsy (2010) 51% girls coming from urban background used internet and 25% panchayat area.

It is to be noted that types of management of educational institutions significantly affected upon the attitude, perception and knowledge of students. The present study reveals that there was no significant difference between the students of provincialised and non-provincialised colleges in terms of awareness towards ICT which may be supported by the findings of Kohli and Murlidhar (2013) who concluded that however the difference between public and aided school students is seen as far as awareness about internet is concerned.

CONCLUSION AND SUGGESTIONS

Based upon the findings of the present study it may be concluded that colleges under investigation did not have sufficient ICT facilities for computer courses and internet access to students. Majority of the college students were found to be moderately aware towards use of ICT and there is no significant difference between male and female students, and government provincialised and non provincialised college students in ICT awareness. But there is a significant difference between rural and urban students in their awareness towards ICT. However, suggestions may be forwarded for future improvement:

- All the colleges both provincialised as well as non-provincialised colleges should have sufficient ICT facilities for students.
- Computer education should be provided as an integral part of general system of education in undergraduate colleges.
- All the colleges both provincialised as well as non-provincialised colleges should have access to internet for the use of students too.
- Teachers should use ICT in classroom teaching so that students get encouragement for the same.
- Students should realize the importance of ICT in the present day society and should learn ICT without further delay.

- Since ICT may be access anywhere without any local barrier, students of rural area should come forward with their urban counterparts in case of IT knowledge and learning.

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