



INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) SKILL USAGE AMONGST B.ED. STUDENTS

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Abstract

The current study is on the Information and communication skill and usage possessed by the B.Ed. students of the Social Science Discipline which are affiliated to NCTE. Five colleges are included in the current study. A total of 200 samples were randomly selected from five urban and two rural colleges. There was a total of 75 Male and 125 Female trainee B.Ed. teachers. The objective of this study was to find out tools and the types of technology-based learning used by the B.Ed. trainee teachers of different disciplines of Social Science and also to see what skill does the B.Ed. trainee teachers possess towards use of different ICT applications and finally to find out the different problems faced by the trainee teachers in terms of using ICT. The result showed that the B.Ed. trainee teachers have enough skills to use M.S. Word, M.S. Power-Point, M.S. Excel, internet and E-Mail.

Keywords: *Information and Communication Technology, Skill, B.Ed. students*

Introduction

The United Nations Educational, Scientific and Cultural Organization (UNESCO) has been constantly pushing the whole teaching fraternity for transforming the world through the far-reaching implication of new Information and Communication Technology (ICT) for improving teaching-learning environment. UNESCO has also acknowledged the exponential growth in the use of ICT which has made a considerable impact both on the society and on everyday life of the individuals. ICT has turned out to be a prime reason for economic and social change around the globe. ICT is trying to support and improve educational processes productively making it more learners centric.

Concept and role of ICT in education

ICT is technology that supports activities involving information. Such activities include gathering, processing, storing and presenting data. Increasingly these activities also involve collaboration and communication. Hence IT has become ICT: Information and Communication Technology. Communication Technology is consisted of two words like —Communication & Technology. Information and Communication Technology has become a potential resource in the field of education and has started to bring revolutions in the teaching and learning process. The science of application of

Published by:

Pather Dabi Educational Trust, (Regn No: IV-1402-00064/2023), Under Govt. of West Bengal, India.

knowledge to practical purposes is technology. Information may be referred to as any communication or any form of knowledge representation. Human being cannot survive without communication. Modern society is currently turning into information society and communication is the exchange of information. It is the process of transferring information from a Sender to a receiver with the help of a medium in which the communication information is understood by both sender and receiver. Communication Technology refers to the knowledge, skills and understanding that is necessary to exchange information verbally or non-verbally. It is processing which accessing information, decoding information and sending it through a medium and changing to the receivers. Medium or channel can be written or oral or gesture form of information through speech, action or any electronic machine. Communication Technology used for communication between individuals or groups through an electronic system. It helps to communicate between individuals or groups who are not physically present at the same place. For example, ICT is used for communication between students and teachers, in which different communication devices are being used to create variety of learning environments. In short, communication technology is the process of designing and constructing and maintaining communication systems.

The main reason for adoption of ICT in education is that after the industrial revolution and with the development of ICT, the nature of education needed a transformation. The number of students in the classroom has increased and as a result providing quality education has become a challenge. Here the need of ICT is immense and a great role for the teachers as they can interact with the students 24X7 and the doubts of the students could be solved in seconds which was not possible for a teacher in a sixty minutes class. The NPTEL and Swayam e-Pathshala are some of the ICT based schemes of the government for quality higher education. ICT is also found to be a very motivating tool as the students of today are much interested in using different ICT devices and also helps in cooperative and faster learning as it encourages full potential of the learning it can create a wider reader-base and attention. The effective use of ICT can make learning engaging, it helps students to be active and makes students alert, curious and learning also becomes joyful. Conducting a seminar and workshop is easy. Psychologically, the sensory approach used in ICT is effective to a great extent, the major element of which is visualization. This makes learning faster and improves the quality.

Statement of the Problem

For B.Ed. students to search and retrieve information to support their classroom learning, they must acquire their necessary skills to do so. Unless they develop the ICT skills, they will not be able to compete with the world market and neither they can attract the students at present. Thus, the acquisition of skill is very useful. It is also observed that generally teachers of the social science departments are not so efficient in using ICT in their courses. The main reason is lack of knowledge in their ICT it has also been observed that there is a paucity of empirical evidence on ICT skills among B.Ed. trainee teachers of different colleges of rural and urban areas. Thus, there is need to evaluate the skill. This study will give an idea about their ICT proficiency.

Research Questions: To analyse the ICT skills of B.Ed. students of different colleges under NCTE the following research questions are framed by the researcher-

1. What are the ICT tools and technology-based learning used by the B.Ed. trainee teachers?
2. What skill is possessed by B.Ed. trainee teachers in terms of using different applications?
3. What are the challenges encountered by the B.Ed. trainee teachers towards use of ICT?

Methodology of the Study

This study involved qualitative research methodology. Primary data was collected from five B.Ed. colleges i.e., three urban and two rural colleges were selected by the researcher. The population of the present study includes the B.Ed. trainee teachers of different colleges. The study constituted 200 B.Ed.

trainee teachers of the different social science departments like Education Method, History Method, Political Science Method, Sociology Method and Philosophy Method. All these teachers had one subject of Social science. The sample comprised of both male and female trainee teachers. The researcher used simple random technique for collection of data. The data was collected with the help of Google form with a questionnaire prepared by the researcher. The questionnaire had three parts. The first part had certain demographic description of the respondents, the Second Part consisted of nature of skills of certain indicators of different applications like M.S. Word, M.S. Power-Point, M.S. Excel, E- Mail and Internet etc. and the third part indicated the problems faced by B.Ed. trainee teachers towards use of ICT. Permission was taken from each college before collection of data. After the data was collected the responses of the respondents were analysed by the researcher and the following results were found.

Data Analysis and Interpretation

1. What are the ICT tools and technology-based learning used by the B.Ed. trainee - teachers ?

By analysing the responses of the respondents, it was found that the following ICT devices were used by B.Ed. trainee -teachers of different colleges affiliated to NCTE.

Table-1 showing: ICT tools were used by the B.Ed. trainee- teachers

Sl.No.	ICT tools	Frequency	Percentage(%)
1.	Laptop	80	40
2.	Desktop	120	60
3.	Pendrive/ hard-disk	112	56
4.	Smartphone	158	79
5.	Printer	89	44.5
6.	Scanner	75	37.5

From **Table-1** it can be seen that only 40% of the B.Ed. Trainee teachers have access to use Laptops, 60% use desktop, 56% of the students use Pendrive/ hard disk, 79% have access to Smartphones, 44.5% has access to printers and 37.5 use scanners. By analysing the responses of the respondents, it was found that the following technology-based learning were used by B.Ed. trainee -teachers of different colleges affiliated to NCTE.

Table-2 showing: Technology-based learning used by the B.Ed. Trainee Teachers

Sl.No.	Technology- Based Learning Resources	Frequency	Percentage(%)
1.	Digital Library	30	15
2.	Learning Management system	45	22.5
3.	Explain Everything/Jamboard/ Microsoft whiteboard	49	24.5
4.	TED-Ed/You Tube Educational Channel/Coursera	12	6
5.	Pear Deck/Edpuzzle	32	16

From above **Table-2** it can be seen that Digital Library is used by only 15% of the B.Ed. trainee-teachers, Learning Management system is used by 22.5% of the students, Explain Everything/Jamboard/ Microsoft whiteboard is used by 24.5%, TED-Ed/You Tube Educational Channel/Coursera is used by 6% students Pear Deck/Edpuzzle is used by 16% of the students in their own discipline.

2. What skill is possessed by B.Ed. trainee -teachers of different colleges affiliated to NCTE in terms of using different applications?

After analysing the responses of the undergraduate Male and female students of Social Science Discipline the following results were found-

Table-3 showing: Nature of Skill in using M.S. Word by B.Ed. trainee -teachers of different colleges affiliated under NCTE according to Gender

Items	Subject of Study									
	Education Method		History Method		Pol.Sc Method		Philosophy Method		Sociology Method	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Can insert text	12 (80%)	19 (76%)	13 (76.4%)	18 (78.26%)	16 (88.9%)	19 (86.4%)	11 (84.6%)	21 (77.8%)	09 (75%)	23 (82.1%)
Can edit text	12 (80%)	18 (72%)	13 (76.47%)	17 (73.91%)	17 (94.4%)	18 (81.8%)	10 (76.9%)	22 (77.8%)	08 (66.7%)	24 (85.71%)
Can insert tables	11 (73.33%)	15 (60%)	14 (82.35%)	15 (65.21%)	17 (94.4%)	15 (68.2%)	10 (76.9%)	20 (74.1%)	10 (83.3%)	22 (78.6%)
Can change page set-up	11 (73.33%)	12 (48%)	12 (70.58%)	14 (60.86%)	16 (88.8%)	16 (72.7%)	11 (84.6%)	18 (66.7%)	07 (58.3%)	24 (85.7%)
Can print a document	13 (86.66%)	19 (76%)	17 (100%)	17 (73.91%)	17 (94.4%)	18 (81.8%)	11 (84.6%)	20 (74.1%)	08 (66.7%)	18 (64.3%)

From **Table no-3** it is evident that there are 40 B.Ed. trainee -teachers of different colleges affiliated under NCTE in each discipline viz, Education Method, History Method, Political Science Method, Philosophy Method and Sociology Method. There is total 75 male candidates and 125 female candidates included in this study. There are 15male and 25 Female students in the Education Method, 17 Male and 23 Female in History Method, 18 male and 22 Female in Political Science Method, 13 Male and27 female in Philosophy Method and12 male and28 Female in the Sociology Method who are included in this study. From the responses given by the respondents it is evident that the male students of different disciplines are competent enough in using M.S. Word than the female B.Ed. trainee -teachers. But it is found that more or less both male and female B.Ed. Trainees of the social science Method somewhat have knowledge and skill about using M.S. Word. They can insert text, edit text, create tables change page set-up and can print document.

Table-4 showing: Nature of Skill in using M.S. Power Point by B.Ed. trainee -teachers of different colleges affiliated under NCTE according to Gender

Items	Subject of Study									
	Education Method		History Method		Pol. Sc Method		Philosophy Method		Sociology Method	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Can insert Text	12 (80%)	18 (72%)	14 (82.35%)	18 (78.26%)	16 (88.9%)	19 (86.4%)	11 (84.61%)	21 (77.8%)	09 (75%)	23 (82.1%)

Can insert graph/Pictures	12 (80%)	16 (64%)	13 (76.47%)	17 (73.91%)	17 (94.4%)	18 (81.8%)	10 (76.92%)	22 (77.8%)	08 (66.7%)	24 (85.71%)
Can change templates	10 (66.66%)	17 (68%)	15 (88.23%)	16 (69.56%)	17 (94.4%)	15 (68.2%)	10 (76.92%)	20 (74.1%)	10 (83.3%)	22 (78.6%)
Can insert & delete slides	13 (86.66%)	12 (48%)	14 (82.35%)	14 (60.86%)	16 (88.8%)	16 (72.7%)	11 (84.61%)	18 (66.7%)	07 (58.3%)	24 (85.7%)
Can create animation	13 (86.66%)	11 (44%)	16 (94.11%)	17 (73.91%)	17 (94.4%)	18 (81.8%)	11 (84.61%)	13 (48.1%)	08 (66.7%)	12 (42.9%)

From **Table no-4** it is evident that there are 40 B.Ed. trainee -teachers of different colleges affiliated under NCTE in each discipline viz, Education Method, History Method, Political Science Method, Philosophy Method and Sociology Method. There is total 75 male candidates and 125 female candidates included in this study There are 15male and 25 Female B.Ed. Trainee teachers in the Education Method, 17 Male and 23 Female in History Method, 18 male and 22 Female in Political Science Method, 13 Male and27 female in Philosophy Method and12 male and28 Female in the Sociology Method who are included in this study. From the responses given by the respondents it is evident that the male respondents of different disciplines of social science Method are more or less skilled in creating power point presentations than female respondents. But it is found that the female B.Ed. trainee teachers (68%) of the education Method are more skilled in changing templates than the male (66%) Trainee teachers. Only 48% of the female students of Education Method have the skill of inserting and deleting slides. Thus, they need certain training in this particular area. From the responses it is clearly seen that in terms of creating animations the female trainee teachers of Education Method (44%), Philosophy Method (48.1%) and Sociology Method (42.9%) have less skill to do so.

Table-5 showing: Nature of Skill in using M.S. Excel by B.Ed. trainee -teachers of different colleges affiliated under NCTE according to Gender

Items	Subject of Study									
	Education Method		History Method		Pol.Sc Method		Philosophy Method		Sociology Method	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Can insert cell	13 (86.7%)	20 (80%)	13 (76.5%)	17 (73.9%)	16 (88.9%)	19 (86.4%)	10 (76.92%)	17 (63%)	10 (83.3%)	23 (82.1%)
Can use formulas	7 (46.66%)	10 (40%)	8 (47.05%)	9 (39.1%)	6 (33.3%)	10 (45.4%)	5 (38.46%)	9 (33.3%)	05 (41.6%)	10 (35.7%)
Can sort records	11 (66.66%)	16 (64%)	16 (94.1%)	17 (73.91%)	17 (94.4%)	12 (54.5%)	10 (76.92%)	16 (59.2%)	10 (83.3%)	15 (53.57%)
Can use filters	13 (73.3%)	12 (48%)	14 (82.35%)	16 (69.6%)	16 (88.8%)	13 (59%)	11 (84.61%)	14 (51.8%)	07 (58.3%)	13 (46.42%)

Can import data	13 (86.66%)	16 (64%)	16 (94.1%)	17 (73.91%)	17 (94.4%)	12 (54.5%)	11 (84.61%)	18 (66.1%)	08 (66.7%)	18 (64.28%)
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From **Table no-5** it is evident that there are 40 B.Ed. trainee -teachers of different colleges affiliated under NCTE in each discipline viz, Education Method, History Method, Political Science Method, Philosophy Method and Sociology Method. There are 15male and 25 Female B.Ed. Trainee-teachers in the Education Method, 17 Male and 23 Female in History Method, 18 male and 22 Female in Political science Method, 13 Male and27 female in Philosophy Method and12 male and28 Female in the Sociology Method who are included in this study. From the responses it is evident that the male and the female B.Ed. students have enough skill in terms of inserting text, sorting records using filters and importing data. Though male respondents are a little more skilled in terms of using M.S. Excel. But it has been evident from the study that in terms of using formula in M.S. Excel both male and female students are less proficient.

Table-6 showing: Nature of Skill in using Internet by B.Ed. trainee -teachers of different colleges affiliated under NCTE according to Gender

Items	Subject of Study									
	Education Method		History Method		Pol.Sc Method		Philosophy Method		Sociology Method	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Can use different browsers	12 (80%)	18 (72%)	14 (82.35%)	18 (78.26%)	16 (88.9%)	19 (86.4%)	11 (84.61%)	21 (77.8%)	09 (75%)	23 (82.1%)
Can organise favourites	12 (80%)	16 (64%)	13 (76.47%)	17 (73.91%)	17 (94.4%)	18 (81.8%)	10 (76.92%)	22 (77.8%)	08 (66.7%)	24 (85.71%)
Can download and upload files	10 (66.66%)	17 (68%)	15 (88.23%)	16 (69.56%)	17 (94.4%)	15 (68.2%)	10 (76.92%)	20 (74.1%)	10 (83.3%)	22 (78.6%)
Can use platforms like Google Meet, Zoom	13 (86.66%)	21 (84%)	14 (82.35%)	14 (60.86%)	16 (88.8%)	16 (72.7%)	11 (84.61%)	18 (66.7%)	07 (58.3%)	24 (85.7%)
Can search and view a video	13 (86.66%)	16 (64%)	16 (94.11%)	17 (73.91%)	17 (94.4%)	18 (81.8%)	11 (84.61%)	20 (74.1%)	08 (66.7%)	25 (89.28%)

From **Table no-6** it is evident that there are 40 B.Ed. trainee -teachers of different colleges affiliated under NCTE in each discipline viz, Education Method, History Method, Political Science Method, Philosophy Method and Sociology Method. There are 15male and 25 Female B.Ed. Trainee teachers in Education Method, 17 Male and 23 Female in History Method, 18 male and 22 Female in Political Science Method, 13 Male and27 female in Philosophy Method and12 male and28 Female in the Sociology Method who are included in this study. From the responses it is evident that the male and the

female B.Ed. students have enough skill in terms browsing different websites, organising favourites, uploading and downloading files, using Google meet and Zoom Platform and also watching different videos. Thus, the B.Ed. trainee teachers of social science Method are all skilled in using Internet.

Table-7 showing: Nature of Skill in using E- Mail by B.Ed. trainee -teachers of different colleges affiliated under NCTE according to Gender

Items	Subject of Study									
	Education Method		History Method		Pol.Sc Method		Philosophy Method		Sociology Method	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Can open an e-mail	14 (93.3%)	18 (72%)	16 (94.1%)	18 (78.26%)	17 (94.4%)	19 (86.4%)	11 (84.61%)	21 (77.8%)	11 (91.6%)	23 (82.1%)
Can compose message	14 (93.3%)	16 (64%)	13 (76.47%)	16 (69.6%)	17 (94.4%)	18 (81.8%)	12 (92.3%)	22 (77.8%)	08 (66.7%)	24 (85.71%)
Can send message	10 (66.66%)	17 (68%)	15 (88.23%)	20 (86.95%)	17 (94.4%)	20 (90.9%)	12 (92.3%)	24 (88.8%)	11 (91.6%)	26 (92.8%)
Can send attachment	13 (86.66%)	18 (72%)	16 (94.1%)	18 (78.26%)	17 (94.4%)	21 (95.4%)	11 (84.61%)	24 (88.8%)	11 (91.6%)	24 (85.7%)
Can open attachment	14 (93.3%)	16 (64%)	16 (94.11%)	18 (78.26%)	17 (94.4%)	21 (95.4%)	11 (84.61%)	24 (88.8%)	11 (91.6%)	26 (92.8%)

From **Table no-7** it is evident that there are 40 B.Ed. trainee -teachers of different colleges affiliated under NCTE in each discipline viz, Education Method, History Method, Political Science Method, Philosophy Method and Sociology Method. There are 15male and 25 Female B.Ed. trainee teachers in the Education Method, 17 Male and 23 Female in History Method, 18 male and 22 Female in Political science Method, 13 Male and27 female in Philosophy Method and12 male and28 Female in the Sociology Method who are included in this study. From the responses it is evident that the male and the female B.Ed. trainee teachers of different Methods of Social Science are very Skilled in terms of using E- Mail for different purposes.

3. What are the challenges encountered by the B.Ed. trainee teachers of different colleges under NCTE face towards use of ICT?

To find out the challenges faced by the urban and rural B.Ed. students of different social Science Method of different colleges affiliated under NCTE the researcher asked the following questions. The responses of the students were analysed and the following responses were obtained-

Table-7 showing: Constrains faced by urban and rural B.Ed. Trainee teachers in terms of using ICT

Sl.No.	Problems	Urban	Rural
1.	Slow internet Speed	87 (66.92%)	55 (84.61%)
2.	Lack of ICT Skill and training	62 (47.69%)	50 (76.92%)
3.	Lack of proper network for using internet	90 (69.23%)	45 (75.38%)

4.	Difficulty integrating ICT into lesson plans effectively	76 (58.46%)	34 (52.3%)
5.	Limited access to technology	82 (63.07%)	48 (73.8%)
6.	Low technical assistance from supervisors	83 (63.84%)	21(32.30%)
7.	Time constrains for learning and implementing new technologies	34 (26.16%)	12 (18.46%)

From **Table no 8** it is evident that there is a sharp difference in use of ICT among urban and rural B.Ed. trainee teachers of Social Science Method subjects. There were 130 urban B.Ed students and 65 rural B.Ed. students involved in this study. In terms of slow speed of internet 66.92% of the urban B.Ed. Trainee teacher of different Method subjects and 84.61% of the rural B.Ed. students face problems. 47.69% of the urban trainee teachers and 76.92% of the trainee teachers complained they have limited skills to use ICT and thus it stands in the way of use of ICT. 69.23% of the urban trainee teachers and 75.38% of the rural trainee teachers have difficulty integrating ICT into lesson plans effectively. 58.46% of the urban trainee teachers and 52.3% of the trainee have limited access to technology as the ICT resources are very costly. Thus, the B.ED. colleges can improve their ICT infrastructure and the community could also set up ICT laboratories for effective utilization of ICT. In terms of Skill of using ICT it is found that 63.07% of the urban trainee teachers and 73.8% of the rural trainee teachers lack in proper skill for using ICT. 63.84% of the urban trainee teachers and 32.30% of the rural B.Ed. Trainee teachers responded that they receive low technical assistance from supervisors. From the responses given by the B.ED. students it can be seen than the rural students might receive some assistance from their teachers and supervisors. 26.16% of the urban trainee teachers and 18.46% of the rural trainee teachers say that there is very little scope for using ICT in their Social Science Method subjects.

Conclusion

The importance of ICT is seen in every aspect of human life. This is the reason why it is very essential to develop proper ICT skills among the B.Ed. trainee teachers. Awareness about the importance of ICT should also be explained to each B.Ed. trainee for its proper utilization. The students in the current NEP2020 are expected to develop their learning objectives through ICT skill and usage.

From the above study it can be concluded that the B.Ed. students of Social Science Method of different colleges affiliated to NCTE have the skill of using different devices through some students face a challenge in terms of availability due to socio-economic conditions of the family. It is also evident that the students have developed certain skills in working with different applications but the percentage is higher in terms of the male candidates. From the study it is also evident that the female trainee teachers have less skill in using different applications in terms of ICT use. There are also differences noticed in terms of use of ICT in terms of urban rural differences. It is very essential to meet the challenges as it is the need of the hour and the government should play a significant role in terms of developing different policies and establishment of digital resource centres.

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