

# **Role of ICT in Quality Learning**

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## **Abstract**

Teacher's quality is a vital factor and strength of teachers' effectiveness which is recognized as the greatest determinants of educational success. Teacher is considered to be the architect of the nation. In other words the future of any nation lies in the hands of teacher. Although effective education is the result of multiple factors, the most important of them is the teacher, more so when they are technically equipped to apply their competence in the classroom teaching. India is such a vast country, rich with diversity in language, culture, traditions and belief and education is the potential tool to address all such diversities. Quality of teacher plays a dominant role in the whole process of schooling.

However, equally important is teacher preparation process, responsibility of which lies with the teacher education institutions. Teacher education is an area which is a combination of all the disciplines and may be considered as interdisciplinary as it accommodates all the disciplines be it science, language or social sciences, through the pedagogical discourse. However an effective teacher is one who may do justice with all the disciplines while transacting the curriculum with the varied background with all diversities. For this a teacher needs to be well equipped with skills of technology integration in the classroom transaction.

## **Integration of ICT with teacher education**

Use of ICT is much ahead of conventional teaching-learning where teaching was more teacher centric but now the focus has shifted from being teacher centric to more student friendly where the focus of the teacher is on much involvement of student in the teacher learning process rather

than prevailing teacher dominance. Teacher in this process has to provide an opportunity to the students go out of box. This is possible when the teacher is using educational technology to facilitate their students develop higher order learning. ICTs can work as an effective tool in enhancing teaching and learning. ICTs can transform the traditional authoritative learning into more transparent learning, with the teacher becoming a facilitator rather than the expert. Information communication technology will transform learning from traditional formal schooling to lifelong learning.

### **Benefits of using ICT in Education**

ICTs can be used as a potential tool for enhancing teaching learning.

**Access of students to Digital Information** ICT is used as a tool for students to discover learning topics, solve problems, and provide solutions to the problems in the learning process (Brush, Glazewski and Hew (2008). ICT may help the students to search / develop study material themselves. This way ICT not only enable the students to ascertain the learning material but also develop among them a critical thinking. They will be, thus able to solve their day today problem in education and find out more innovative ways to learning. (Watts-Taffe et al .2003, Reid 2002)

### **Enabling Students Self Directed Learning**

“Teachers can guide students that how they can frequently be engaged into meaningful use of computers (Castro Sánchez and Alemán 2011)”. With the help of teachers the students may access various Apps for their learning. The learners may construct their own knowledge following constructivism in practice. The students may also learn how to access, select, organize, classify and interpret the information for various purposes.

### **Developing Creative Learning Environment**

Today is an era of creating a learning environment which is possible through the use of ICT. The learner can develop different learning activities games and vocabulary. The ICT helps to develop a very conducive environment in the classroom for the students. In turn teacher helps develop creative learning environment. ICT involves purpose designed applications which provide innovative ways to meet variety of learning needs.( Chai, Koh and Tsai 2010)

### **Promoting Collaborative Learning**

There was a time when merely teacher was the knowledge provider. But the use of ICT has made it possible that the services of the teacher are utilized by the student merely as a facilitator. The ICT can promote collaborating learning. The students can learn better through the collaborative efforts of the student and teachers. Even collaboration among students is also encouraged through use of ICT. ICT may help each student to search and share the knowledge which is available online and on other resources. The use of ICT enables teacher to develop various qualities and abilities such as reaching the new learning resources and acquire skills for self-

organization and in turn enable them prepared for self-learning and enabling them to solve problems.

### **Opportunities to Developing Critical Thinking Skills**

Use of ICT also develops an ability to transform them into a self-evaluators, so that they know that what is appropriate for the students. Now the teacher has a responsibility to develop among students a skill to make learners independent. The autonomy among learners will enable the learners to become more capable to organize and classify the material as per the need of the subjects concern and use the ICT helps in developing critical thinking. If the stakeholders, i.e. teachers and students have been using ICT continuously for long time may foster critical thinking of higher order (Levin and Wadman 2006). McMahan's (2009) study showed "that there were statistically significant correlations between studying with ICT and the acquisition of critical thinking skills. A longer exposure in the ICT environment can foster students' higher critical thinking skills". The ICT policy on school education 2013 has emphasized integration of ICT into classroom teaching in all disciplines at all levels. If ICT is applied into all teaching components it may ensure higher level of cognition material accordingly either in group or as an individual.

### **Need for the Study**

The use of ICT and its integration has resulted into meaningful learning outcome in all almost all the disciplines. The ICT helps learners to access all the required information and thus enable the learners organize and classify the said information and convert the same information into knowledge to solve their problems. The classroom scenario has changed from being teacher controlled to learners' control and thus makes learning easier as well as convenient through developing a collaborative environment. Moreover, the ICT has removed the barriers of time and distance.

Meaning hereby that learner at any point of time and place may utilize the advantages of latest educational technologies to improve the quality of learning. However the researchers have certain apprehensions that in spite of all efforts of the governments to take all advantages of ICT the situation in most of the schools in India seems to be very disappointing. The researchers, therefore, have conducted a study on some private colleges of teacher education imparting teacher training programme of secondary level i.e. Bachelor of Education, to establish whether these colleges are making all efficient and effective use of various educational technologies and whether it (ICT) is enabling the teacher educators to enhance their own learning as well as of students of teacher training institutes. Before any attempt is made to link use the of ICT with quality learning of pupil teachers (prospective school teachers), it is necessary to ascertain whether the teacher educators (teachers teaching in the teacher training institutions) are aware and are well versed with the use of ICTs as a tool of learning. The researchers attempted to achieve the following objectives:

1. To study the level of awareness of the teacher educators about the various tools, techniques and devices of educational technologies.
2. To study the level of usage of various technologies in the teaching learning process
3. To study the perception of teacher educators about the role of technologies in enhancing the quality of learning among their students (prospective teachers).

**Research Methodology**

The researcher selected 10 private colleges of Delhi choosing 10 teachers from each college on convenience basis. Total 100 teachers ( Teacher Educators) were selected.

A detailed questionnaire was developed to be administered upon the selected sample. The questionnaire has closed ended items only.

**Analysis of Data**

Data could be collected only from 88 teachers as the remaining did not return the filled up questionnaire despite of several reminders. The data were classified and arranged in the tabular form. The analysis and interpretation of data is given below:

**Table 1. Awareness of teacher educators about various Educational Technologies**

	YES ( %)	NO( % )	Can't say
Awareness of the term educational technology	100	-	-
Know the difference of lap top, tablet PC, mini notebook	75	25	-
Awareness about various soft wares	75	10	15
Know technicalities (licensing etc.) involved in the			
Use of Educational Technologies (ET)	50	10	40
Awareness about the use of mobile technology in teaching	90	10	-

The above table states 100% awareness of the sampled teacher educators about the tools and techniques used in educational technology in teaching learning process. Similarly about the difference between lap top, tablet PC and mini notebook 75% were found to be aware but 25% showed un awareness. Nearly 50% teacher educators showed their awareness about the technicalities i.e. requirement of licensing etc. in the use of ET while 40% said that they are not sure about it. This implies teacher educators are themselves not quite well aware about technologies, licensing options available so they need to be sensitized about the same.

**Table 2 Usage of various technologies in teaching learning**

	Yes	No	Can't say
Confident in searching tools / techniques	90	10	10
Comfortable in using spreadsheet and Ms office etc.	60	20	20
Comfortable to search material through internet	100	-	-
Can use smart class comfortably	80	20	-
Can create clips or animation	30	70	-
Can create blog or website	30	70	-
Can create software	50	50	-

On the question about their confidence in searching those tools and techniques for different purposes 90% responded 'Yes', while asking about their level of comfort in using spreadsheet and MS Office etc. the response was positive by 60% but negative by 20% respondents. A very positive sign on the question on their comfort in searching learning material through internet was noticed where 100% showed replied in affirmation. The table shows that merely 80% teachers replied 'Yes' while replying to the use of smart class, 20% replied in negative. On the components such as; creating clips or animation, blog or website and creating a software merely 30%, 30% and 50% responded 'Yes' respectively. It seems that these teacher educators need to be developed in the area of creation of educational material. There need to be capacity building programmes for the same.

While asking questions on the perception of the teacher educators about role of ICT in quality learning, the following responses were obtained.

**Table 3 Perception about the role of ICT in Quality learning**

	Great Extent	Some extent	Can' say(%)
Do you think ICT develops reflective thinking?	40	40	20
Do you think ICT develops creative thinking?	40	40	20
Do you think ICT develops independent learning skills?	60	40	-

Do you think ICT develops collaborative learning skills?	75	25	-
Do you think ICT develops innovative learning ?	25	-	75
Do you think ICT develops self- directed learning?	60	40	-

The above table highlights the perception of teacher educators about the role of ICT in the enhancement of the quality of teacher education. The study is delimited to six dimensions of quality through the use of ICT technologies. It was reported by 40% respondents each who consider that ICT develops reflective and critical thinking among the learners to great extent while similar percentage considers that these qualities are developed to some extent. Regarding developing independent learning skills 60% perceived, it is developed up to great extent while 40% consider to some extent.

Regarding the perception about collaborative learning skills 75% consider that ICT develops this skill to great extent while only 25% perceive it develops to some extent. On asking about to what extent IC T develops innovativeness among learners, only 25% said up to 25% , while 75% said they are not sure about it. Regarding the dimension of self- directed learning skill 60% perceive to great extent while 40% perceived ICT develops it to 40% only. Highest response is about collaborative learning, followed by self-directed and independent learning skills. Teacher education Institutions should organize capacity building programmes for teacher educators to demonstrate how ICT can be used for developing reflection, creative and innovative learning.

## **Discussion and Conclusion**

The data given above is the empirical evidence of the awareness about and the use of ICT among teacher educators. Teacher education which assumes the responsibility of preparing teachers for various levels, has the responsibility to make sure that prospective teachers acquire and learn appropriate educational technology so that in turn they use this training to prepare their students to face the challenges of life ahead. It is these pre service teachers who would soon become school teachers and would prepare the foundation for the students to become professionals, technocrats and good citizens who will shape the future of the nation. Quality education is the pre requisite to achieve such goals. Here these teachers while teaching to these school students have to train them for varied professions by developing numerous skills. One of the most cited reasons for quality education is through the use of ICT. Institutions of teachers' training have a larger role to train these teachers in the skills of using Information and Communication Technology. Data presented above clearly show that the teacher educators are by and large aware about the tools and techniques of educational technology. They are also comfortable in using various tools and are able to develop appropriate software to use in the teaching process. If the pupil teachers are trained rigorously to integrate ICT in their day to day use, there is no reason not to achieve higher quality learning outcome. These students (pupil teachers) may use appropriate technologies in solving their learning problems, preparing their assignments, its

presentation and discussion. The use of ICT also provides ample opportunities to the learners develop self- directed learning. The students may also create their own knowledge in group using the directions of the teacher educator as a facilitator, resulting into collaborative learning. By using different soft wares/ Apps the learners may think out of the box and may develop innovative or creative learning.

It is well recognised that information technology has now come of age to be used effectively in order to reach out to students anywhere and anytime thus virtually abolishing all national and international boundaries. (Bhatia, H.K.) It is therefore necessary that all the teacher preparing institutions should ensure that ICT integration becomes part and parcel of the curriculum of such institutions so that during the course of the study pupil teachers learn and acquire all necessary but latest technologies. A lot number of capacity building programmes are required to help teachers develop in the area of ICT integration in teaching-learning. On the other hand the schools should also make arrangements to procure all necessary tools, equipment, devices, soft- ware and hard ware etc. so that the teachers make take best advantage of such technologies for meaningful learning outcome among their students.

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