

ICT in Education: Issues and Challenges

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Abstract: Today we can simply treat Information and Communication Technology (ICT) as a great technology for enhancing the quality of education. Yet here are number of advantages of using ICT in education system, it has some issues and challenges to be considered. As ICT is associated with computer based technologies they also include conventional such as radio, television and telephone techniques. Where the use of such technologies provides ease of using trends, it is also integrated with some sort of issues and challenges. Some major issues such as distance and climate incentive, interactivity, cost effectiveness, equity; sustainability etc. degrades the full utilization of the technology. These needs to be resolved for having the best benefit of ICT in education stream. Some challenges are also there which are the major part for the consideration we normally face, while using the technology of ICT in education, such as educators, infrastructure, education administrators, capacity building, policy makers and planners, language and content. Well ICT is good to use in some cases, it can be better by improving its features, but it can give best result if these issues and challenges are resolved. The primary focus here is to discuss about some major issues and challenges related to ICT in education. With a little effort we can extend the tag of ICT in education from good to better and better to best.

Keywords: ICT, Equity, Sustainability, Policy Makers.

1. Introduction

Information and Communication Technologies are associated with the various technologies such as radio, television, telephone, internet and many more. As, we are well aware, that with the help of internet and such technologies we are able to access any sort of information and even explore the whole world just on our finger tips. ICT can simply be defined as the use of hardware and software for systematic and methodological management of information. It generally refers to the technology used to input, store, create, share, transmit or exchange the particular task. The effectiveness of ICT in education is directly depends on the number of inventions in science and technology, which has also improved the speed of the communication including security. ICT has become the integral part of new era. ICT includes numbers of communication devices such as radio, television, cellular phones, satellite system as well as video conferencing and distance learning. It can be considered in particular context also, such as ICT in education, health care or libraries and thus, it plays different roles in various fields. Now a day's ICTs are upgraded in number of ways and this have created a 'global

village' in which we can communicate with each other across the whole world. Yet, technology is upgrading day by day it do have number of positive factors but it does includes number of issues and challenges even. Just getting succeeded in improving the communication tools or network is not enough, we must also be aware of how to apply it and what is the mean behind ICT literacy.

Stages of Embedding ICT:

- Familiarization
- Utilization
- Integration
- Reorientation
- Evolution

ICT can be considered as the great tool to enhance the quality of education but at the same time it does involve various challenges and issues too. Here in this paper some issues and challenges of ICT in education are discussed.

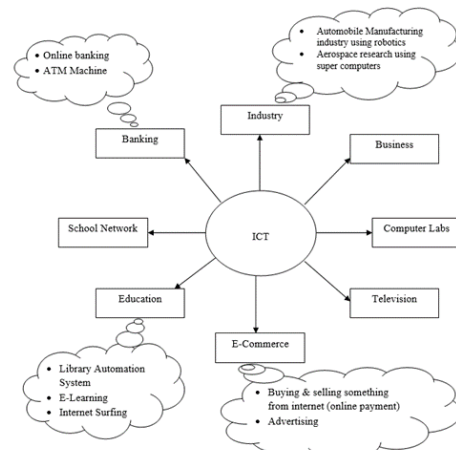


Figure1: Use of ICT in different fields

Fig. 1. ICT

2. Issues of ICT in education

Effectiveness: Generally, effectiveness is the capability of producing a result. Thus, effectiveness of ICT depends on the purpose that how and for what they are used. Working of ICT is different for different areas. Like other number of educational tool, ICTs do not work for everyone and everywhere in the same way.

A. Effectiveness depends up on:

- *Enhancing Access:* Well there are numbers of factors where ICT had helped a lot and it is difficult to quantify the degree to which ICT is not sufficient until the capabilities are enhanced.
- *Raising quality:* Quality is the major factor to affect the effectiveness of ICT. In the field of education, quality can be raised by using various communication devices such as radio and television broadcast, but it is still an issue to have a better result by using such technologies.
- *Cost:* Cost is considered one of the major issues of the ICT in education. It is necessary to implement this technology that is cost effective e.g. educational TV broadcasts, computer based learning like online learning, radio broadcasts etc. Educational TV broadcast and computer based learning e.g. online learning is more expensive than radio broadcast. In the same manner, television broadcast is cheaper than that of computer based and online learning. Generally, the cost depends on the purchasing construction and retrofitting of equipment which includes initial purchase of hardware and software.

B. Types of cost effectiveness in ICT

- *Fixed cost:* This type of cost is at-least required to establish the ICT connection such as retrofitting of facilities. It includes:
 - Hardware and software.
 - Up-gradation and replacement etc.
- *Variable cost:* This is the type of cost which is may or may not be required to establish the ICT connection. It depends on the quality that has to be provided.e.g. professional development. It includes:
 - Connectivity that include internet access etc.
 - Maintenance and support including utilities and supplies.
 - Normally cost increase when it is to conduct professional training for teachers, when to buy ICT tools and so on.
- *Equity:* In general equity is the quality of being fair and impractical. There are disparities in accessing the ICT between rich and poor countries, as, there are numbers of divisions that includes economic, geographic, social, and cultural or gender lines. Ideally, everyone wishes the equal opportunity. So, equity varies on the basis of the divisions that are drawn along with various countries and within the country.
- *Sustainability:* It deals with the ability to be maintained at a certain rate or level.

C. Types of sustainability

- *Economic sustainability:* It is an ability of a

community to finance the ICT enabled program over a long term. Cost affects such sort of sustainability, as investment is required to establish ICT program and number of other funds too.

- *Social sustainability:* An effective ICT program requires being social capable that can include parents for school programs, political leaders, business leaders and even other stock-holders.
- *Political sustainability:* It generally refers to the various issues of policy and leadership. Normally, once the ICT program is established one wishes to not to change it for a long period of time because it is cost effective as new program again requires the investment cost, professional trainings etc.
- *Technological sustainability:* As technology is upgrading day by day, thus one wishes to choose that technology which will be effective and provides services for long term. It involves the acquisition of the latest technology.

3. Challenges of ICT in education

Education with the help of ICT actually requires some clear and specific objectives, guidelines and time bound targets, mobile resources and even the political commitments. It includes:

- *Educational policy and planning:* It is required to choose the best ICT based model. The chosen model must have proven to work in specific conditions and it is even need to be tested. Existing resources must be specified and must develop the strategies for resources to support ICT over the long term.
- *Infrastructure related challenges:* Firstly, it requires appropriate place such as rooms or buildings for implementing the technology. Secondly, very basic requirement is availability of electricity and other things.
- *Policy makers and planners:* It is required for policy makers to have a look at various types of ICT in the country. It can be general in education system. Very basic requirement for computer based systems or online learning is to access the computer in institutes, schools, communities and households and even internet services.
- *Challenges with respect to capacity building:* It includes:
 - *Professionals:* Professionals are the trained teachers who teach the use and access of technology. They must have Skills with particular application Changes with respect to technology up-gradation. Integration into existing curriculum
 - *Education administrators:* A good leadership quality is required in ICT programs as it plays a key role in integration of ICT in education. Today lack of such

qualities (e.g. good leadership) affects the quality of ICT. The integration of ICT program will be effective and sustainable if administrators have broad understanding of such technology and they make the use of such programs efficiently.

- *Technical support specialists:* Technical support requirements are actually depends upon the factor of what and how the technology is used and general requirements such as installation process, maintenance of equipment, various operations, network administration, network security etc.
- *Content developers:* The content in ICT program should be in understandable language, generally English and further the educational development should be generated such as radio programs, CD, DVDs etc.

4. Other challenges

- *Lack of computer:* It is not possible for each and every one to afford the system individually.
- *Lack of Professionals:* To work on ICT programs after the implementation, some professional are required to teach the curriculum.
- *Lack of electricity:* There are still some places where electricity cut is very normal and electricity is the basic requirement for the use of system.
- *Computers are still expensive:* There are still some countries where computer is still not affordable to common person.
- *Broken down computer:* In some cases, it happens that hardware or system broke down. As computer is

expensive and there is always a threat of broken down the system.

- *Burglary:* As the computers are expensive there always a threat of burglary.
- *Lack of internet connection or slow connection:* Sometime due to weather condition or some other factors the connection may be slow down and in such cases the ICT program will not provide the good result.

5. Conclusion

Yet there are number of positive factors of ICT to use in education there are negative factors also. ICT in education can plays number of roles, it can give positive results if issues and challenges are sort down. This technology has number of advantages but in some specific conditions. If some conditions e.g. implementation criteria, professionals, administration etc. are considered then ICT is the best future scope for us in many ways. As the technology has number of advantages it does have number of issues and challenges too. If focused on such issues this technology can be the future tool in education and other fields too.

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