

## Role of ICT in Primary and Secondary Education of Remote Area

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### ABSTRACT

#### Article Info

Volume 9, Issue 5

Page Number: 27-29

#### Publication Issue :

July-August-2021

#### Article History

Accepted : 02 July 2021

Published: 25 July, 2021

ICT (Information and communication Technology) is playing important role in the development of areas like education, health, business, entertainment, manufacturing industries, etc. Use of ICT various areas gets different types of opportunities such as creating more opportunities for an effective and efficient way of handling their businesses, facilitating knowledge in the education, Various ways for Communication, Artistic ways of written communication, growth of Electronics, Entertainment, Medicine, providing lifelong learning. Since education play role in the economic development and improvements in human welfare, ICT's in the education sector to promote the education quality in teaching-learning to assessment and evaluation and accessibility is unquestionably becoming indispensable. This paper attempts to discuss the role of effective integration of ICT in education, particularly in primary and secondary schools, pointing out current challenges and opportunities. Finally, what are major precaution taken by each stakeholders and also contribute for the effective integration of ICT in education in primary and secondary schools.

**Keywords :** ICT, education, lifelong learning

### I. INTRODUCTION

ICT: Information and communication technology is the tool for computing and communicating. Using computers, networks, software and related systems, people can access, create, exchange, analyze and use data, information and knowledge in very good manner.

Electronic tools, systems and resources are generating for the storage and process the data in this Digital Technologies. Which include multimedia, PowerPoint presentation, social media, online games and mobile devices.

In all these tools and techniques of ICT are used to became the effective and efficient. Also ICT gets main role in the aspects of human life such as education, health, transport, business, entertainment etc, thereby creating more opportunities for enhancement of the education.

As per the Literature, ICT is used in communities for sharing and facilitating knowledge which is helps to enhance the quality of life. ICT develops the ares like economic, social services, arts, culture, governance etc, it means it helps to **enhance the Quality of Life through** all above area development. ICT produces formal and informal skill among the people. ICT is

used in the training which is technical and vocational as formal and non-formal at all places and all times. ICT will improve quality, leaning pathways and further groups including rural youth and adults, out-of-school youth and also people with disabilities. It means it play the overall role in the fulfillment of human life well.

Development in the areas like economic and human welfare takes places because of Education. The Economic growth will be attract jobs and investment for the countries. with this countries see raising education and tackling poverty and deprivation. The main thing is the ICT in education reduce the costs, improve the quality, efficiency in the administration, teaching and learning etc.

This review presentation focuses on the effective integration of ICT in education with an emphasis on primary and secondary schools which learning Mathematics. It attempts to point out how ICT's can effectively be integrated in the teaching learning, the challenges and issues that need to be addressed by the various stakeholders to overcome from these challenges in achieving the benefits which ICT's can offer.

## II. ROLE IN PRIMARY AND SECONDARY EDUCATION OF THE ICT

ICTs is emerging new things and increasing the adoption and acceptance by the society will increase level of education on a large scale "There is general consensus among practitioners and academics that integration of ICTs in education as a positive impact on the learning environment" (Prince Waterhouse coopers, 2010). Increase in the use of ICTs in education is large scale which will be greater impact in this education sector.

Teacher provided the digital tools such as Computers, Laptops, LCD projectors, smart boards etc. the use of such things in education in the teaching learning process gives higher benefits. "Research shows that ICTs can contribute to enhancing education in

development context in a number of ways." (Julian M. Bass (2007)).

1. By making teaching learning more interesting it reduce the drop-out rates.
2. Distance education remove the big obstacles of Geographical area.
3. Accelerating Teacher training which increases the more qualified teachers.
4. Removal of adverse factors like poor physical infrastructure, less basic teaching materials and high ratio of student-teacher by ICT.
5. One can access material from Experts in their fields of interest among the world only because of ICT. Before this they are only dependent on physical printed textbooks.
6. Teacher can adopt new technique in the teaching using reliable educational contents to enhance teaching methods.
7. The use of various Digital tools, computer application, videos, television, text, images will increase learner motivation towards learning and also facilitate the all age student in engaging learning environment.

ICT put the impact in the primary and secondary schools in the developing countries. While in traditional education systems has less resources, not qualify teacher etc,. Every Government has first priority as the quality of education because is the base of each country development in the future.

Many countries having the national agenda as the good education. the country like Ethiopia running the Programme EFA (Education For All). In India Government run the Program (ESDP) in 1997 with the Education Training Policy. They introduce the following goals:

1. Ensuing that adults are not use equipments in learning and life skills so, learning needs for young people
2. Gender equality in education with a focus on girl's

- education will be increase level of education quality.
- Expanding and enhancing comprehensive early childhood care.
  - In 2015 girl have access to get free and compulsory good quality of primary education then they expands this free education up to secondary school this is particularly for minorities.
  - By achieving a 50% adult literary level in 2015 for women then the equal access to basic and continuing education for adults.
  - The measuring level of literacy by numeracy and basic life skills are improved by all aspects of quality of education.

Expenses made by Government on two component is as follows

### 1. ICT infrastructure

<b>On an average, 20 devices for high school and 10 devices for higher primary schools and 3 devices for lower primary schools</b>			
<b>ICT Infrastructure – India</b>			
<b>Institution</b>	<b>Number</b>	<b>Initial Investment</b>	<b>Recurring</b>
Schools – ‘Only LPS’ (Government and aided)	677,648	186,353,250,930	54,211,854,816
Schools – Only HPS and Only HPS + LPS (Government and aided)	346,363	161,058,733,992	48,490,801,632
Schools – HS (Government and aided) – all other than above two	198,907	198,907,276,400	59,672,182,920
Cluster Resource Centres (CRC)	76,333	76,333,000,000	22,899,900,000
Block Resource Centres + BEO	13,500	13,500,000,000	4,050,000,000
No. of DIETs/DRCs + DEO	1,280	1,280,000,000	384,000,000
IASEs, CTEs (excludes private teacher education institutions)	135	135,000,000	40,500,000
SCERTs and state level institutions	40	40,000,000	12,000,000
National level institutions	10	10,000,000	3,000,000
Source - (MHRD annual report 2015-16, 12 Plan TE guidelines for number of institutions)			
Private (unaided) schools have been excluded from the school count in the table.			
Only government institutions have been considered in the count of teacher support institutions.			
<b>Grand Total</b>	<b>0</b>	<b>637,617,261,322</b>	

### 2. TPD

<b>INDIA - Teacher Professional Development</b>			
<b>Institution</b>	<b>Number</b>	<b>Initial year</b>	<b>Subsequent years</b>
Teachers – Only LPS (Government and aided)	1,804,738	9,023,690,500	4,511,845,250
Teachers - HPS, HS (Government and aided – non Only LPS)	4,214,418	21,072,089,425	10,536,044,713
Cluster Resource Centres (CRC)	76,333	381,665,000	190,832,500
Block Resource Centres + BEO	13,500	303,750,000	151,875,000
No. of DIETs/DRCs + DEO	1,280	160,000,000	80,000,000

IASEs, CTEs (excludes private teacher education institutions)	135	27,000,000	13,500,000
SCERTs and state level institutions	40	20,000,000	10,000,000
National level institutions	10	5,000,000	2,500,000
<b>Grand Total</b>		<b>30,993,194,925</b>	<b>15,496,597,463</b>
<b>in crores</b>		<b>3,099</b>	<b>1,550</b>

(Source : ICT implementation in school education in India- a report by Tata Trusts and IT for Change)

After 2015 many countries Government has adopted Universal access to basic education by reducing the adult illiteracy.

Following are ten key strategies.

1. To connect hospitals from villages, town, and city with each other with ICTs.
2. To connect all the Research Centre working in different area with ICTs.
3. To connect Post Offices, public libraries, cultural centers, banks, insurance traders for sharing information with ICTs.
4. To connect primary, secondary schools, colleges, universities, educational hubs, technical institutes with ICTs.
5. To connect every village, with community access point by using the ICTs.
6. To connect by e-mails and web address the all local and central Government Departments.
7. Change the curricula of primary and secondary schools in consideration of challenges of society, considering national circumstances.
8. To ensure that more than 50 % population of the world using ICTs very frequently.
9. To ensure that all world's population have habit to use Radio and television for getting the information.
10. To encourage the development of content in all languages mainly used by more people and put this material at place from which it facilitate the other people which want.

Every nation has to decide that it operate using their own economic strengths and made action plan considering a global information society.

Stakeholders expecting more gain and benefits from ICT as compare to the any educational policy in the education.

### **Challenges, Opportunities and Expectation of Stakeholders Form ICT in Primary and Secondary Schools**

Following are some challenges in the way of effective use of ICT in education in primary and secondary education consideration.

The main challenges are Digital divide, insufficient infrastructure, competences of the student and teachers in using ICT. Other factors like cultural and social change to each other.

1. The major challenges in India is the existing infrastructure for implementation of ICT. In India urban areas have good infrastructure like Modern computer, good connectivity but most of the schools are from Rural areas which are facing this problem. So demand for increased development of infrastructure must have first priority. for such thing school management must have financial plans to fulfill the requirements of improvement of ICT tools like Software, hardware and networks etc.,
2. The problem is digital divide in the development of ICT in school. It means the disparity between the peoples having and also using the tools and techniques verses those who are fail to se these tools and techniques because of many reasons. One of the characterized to the Digital divide is unequal access to ICT. National Policy Makers

addressed that if ICT grows then educational quality will be increased. the digital divide can be poverty and narrowed reduction through focused utilization of ICT in education. Competition, trust and security will be open by adoption of ICT in business environment.

3. ICT requires electricity supply to run but in many developing countries there is problem basically in rural and remote areas. So, this is big challenges to overcome as point of view the effective use of ICT in schools.
4. Competences and confidence in teacher is the big challenges to increase use of ICT in school on large scale as the teaching aid. To come out from this problem the organization of large scale teacher training program. Teacher must be aware of potential and scope of pedagogical used of ICT. teacher also participate certain training technical program to acquire honors-on-skill to increase pedagogical project and use of ICT into their curriculum.
5. The last challenge is the se of ICT application for morally and ethically is the questionable as per Literatures this is one risk.

These are various challenges in the development of ICT in schools. Now following are number of opportunities that stake holders take from the ICTs

1. Provide teachers with new sources of information and knowledge.
2. Prepare learner for the real world.
3. Provide distance learners country-wide with online educational materials.
4. Provide learners with additional resources to assist resource-based learning.
5. Specific and target to help classify and categorize the different development levels of using ICT in education.
6. Offers the opportunity for more student centered teaching.

7. Provide greater opportunity for teacher-to-teacher and student-to-student communication and collaboration.
8. Give greater exposure to vocational and workforce skills for studnets.
9. Enables self-paced learning.
10. Enriches learning through a combination of audio, video, images, text and animation.

To enrich the ICTs success in the development of country firstly effective use of ICTs in primary and secondary schools is needed. For this every stakeholders i.e. school bodies, Government bodies, Industry partners, political leaders and all other educational stakeholders need to join forces and share resources to create dynamic, accountable, equitable and sustainable teaching learning ecosystems.

The use of ICT in education is nothing but a content designed and delivered with this is collaborative practices and teamwork. For the update ongoing training is necessary for all the trainers belonging to any educational organization who are going to participate in the design of curriculum, teaching materials and also delivery of ICT in the classrooms. Not only taken into consideration of making good National Policies but Government need to assist in the building the capacity of every organization to handle ICTs effectively in the school education. But fact is that investment of ICTs infrastructure, integrate ICT in curriculum and also deliver the widespread diffusion of materials is very critical.

Another harder is the main i.e. school administrators, the community must be support for the use of ICT as effective manner. The strong sustainable partnership between Government, Civil society and Private sector need to be build of the integration of ICT in school education system from which is overcome the problem like Digital divide and equal access.

Any physical tool cannot bring benefits to teachers, students and all the stakeholders at larges because ICT is also look like physical tools in the education. So, more involvement of NGO, Industry and

Stakeholders play an important role in the effective use of ICTs in the school education. Also positive mind setup of each one teacher, student and others gives fruitful success of ICT in education.

### III. CONCLUSION

The study found that implementation of ICT base learning in school education are not directly application to real classroom because of unfavorable environment of school. School has in-service training opportunities and flexible time table are needed to consider for future improvements. A good framework of the teacher education program ensures that learning and transfer of ICT enhanced activity based learning. The study recommends that the faculty has to strengthen and enforce policies regarding the practical use of ICT for educational practices in the curriculum to introduce more subject specific application.

These are some outcomes from this study.

1. Potential of education through ICT largely unrealized.
2. ICT literacy gap between countries.
3. Limited educational software solutions.
4. Lack of a global vision for the implementation of ICT.
5. Early days, development of web technologies open sources, changing the face of education globally.

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