# Role of ICT in School Education

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***Abstract***

*ICT at present is acting as a catalyst for transferring the knowledge across the globe that is it is like a digital highway. ICT improves teaching and learning thus improving the high order thinking skills. ICT provides the flexibility in teaching learning environment. ICT based pedagogical methods offers various interactive methods which can be incorporated in daily classroom routines like simulation, videos, internet etc. ICT inclines to inflate access to education. Technological changes globally have accelerated and have created a new form of education-Education Powered by Technology.*

## Introduction

21st century is the digital era, where we have access to huge amount of infinite access to the information. ICT is the revised term for Information technology. ICT had become the knowledge transfer digital-highway across the globe. With the working and integration of different digital devices, ICT can excellently and resourcefully manage the information. We can say that ICT acts as a facilitator for the overall evolution and expansion of knowledge in the form of information across the globe. The growth in ICT is also influencing the education sector. It's becoming essential for the schools to groom students for the current digital period. That is why ICT has become the integral part of the daily classroom process and is providing dynamic and quality enriched teaching-learning. The introduction of ICT in the education domain is bringing qualitative changes and amplified output. ICT when used as an augmented tool to the existing teaching methods will definitely bring positive and significant learning outcomes. Therefore it's vital to integrate ICT with traditional teaching-learning methods or pedagogical

aspects. ICT is a revolutionary force which can bridge the digital divide that separates the privileged and the deprived students.

ICT based pedagogical methods offers various interactive methods which can be incorporated in daily classroom routines like simulation, videos, internet etc. Such types of integration provide unlimited curriculum, resources, hands-on activities, inventive approach and active learning. Simple example of ICT in curriculum is MS PowerPoint which can be used to present the topic in the creative and novel way. The subject matter can be presented by integrating graphics to provide structure and animations to form storyline. Such methods definitely aids student's learning. The scope of ICT is not only PowerPoint presentations or pdf's but integration of technologies like Cloud Computing, Virtual Reality, Smart Devices, IoT, Smart Classrooms, Digital Libraries etc. which accelerate the growth in education system.

**Initiatives taken by Indian Government to promote ICT in education**

In India MHRD manages education system at the center level and DoE manages education system at the state level. Under the able guidance of respective departments of the government IT sector of India has made significant development in the field of ICT. The importance of ICT in education was formulated in NEP-1992 to improve the standard of education by incorporating technology. Government of India is taking large number of Initiatives of integrating ICT in education. Some of the initiatives take-up by the government are as discussed below:

| Project Name | Explanation |
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| **ICT @ Schools Scheme** | This scheme was started by the government in 2004 to promote ICT based teaching-learning among students and teachers. This scheme targeted all states and union territories |
| **Sarva Shiksha Abhiyan** | This scheme motivated the states to use ICT based learning and EDUSAT in distance learning. |
| **Chalta-Phirta Mobile Bus"** | This initiative was taken by the government for the children of slums in New Delhi. A bus equipped with multimedia facilities to exhibits films, library, blackboard, |

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| | and computers go around the slum area with the motive to educate children. |
| **Eklavya computer-aided self-learning** | This initiative was taken by the Chhatishgarh government for the classes 6th grade to 8th grade. The scheme provided animated software based on the textbooks and was installed on touch- screen computers for easy access by school-children. |
| **EDUSAT—Education Satellite** | This project was taken up by ISRO and it's the first Indian education satellite based education system. Its main objective is to augment distance education program in the country. |
| **IT @ School** | The Kerala State-Government under EDUSAT started the project named "IT @ School" in order to provide training to teachers and high-speed internet connection to schools. |
| **RGPEEE Project** | Another collaborative project with IGNOU which connects to EDUSAT and promotes the integration of ICT in fundamental education. |
| **Gyan Darshan/Gyan Vani** | This project is based on educational FM radio channel in collaboration with NCERT, IGNOU, IIT, Open Universities and IITs for local education level. |
| **Sakshat Portal** | It's a single-window portal launched by MHRD in 2006 to cater the educational needs of students and teachers. This project works in collaboration for content development with IGNOU, Delhi University, NIOS, NVS, KVS and NCERT. |
| **Media Lab Asia** | DoIT India set up the project MLAsia and it works in collaboration with R&D, NGOs, industries to develop technology for education, healthcare, rural connectivity etc. Gyanpedia is one of the project under MLAsia which tragets e-learning and e-education. |

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| **NIIT** | The objective of the National Institute of Information Technology is to use ICT for education. There are more than 300 learning centers of NIIT to provide training for ICT. 170 |
| **Azim Premji Foundation's Computer-Aided Learning Program** | It's a not -profit organization and aims to provide benefits of ICT in rural schools of India. Under this scheme Computer-Aided Learning Centers has been established across the country. |
| **Intel Education Initiative** | Working in collaboration with Government, it has provided training to more than 570,000 teachers, so that IT skills can be provided to the youths in rural areas. |
| **Project "Shiksha," Microsoft** | This project is the initiative taken by Microsoft in association with government to provide IT literacy for government schools. This project targeted both teachers and students. |
| **Educomp Solutions Limited** | Educomp project in association with government bodies, MoIT, HRD provides ICT literacy across the country with the aim to lessen the digital divide. It offers a broad spectrum of services from multimedia teaching content in regional languages, SMART classrooms to vocational education and training in both government and private schools. |
| **NIOS** | The project started by the government aims to provide distance learning program for underprivileged, rural and urban domains of the country. |
| **eBasta** | This is an online framework/portal developed to make books available digitally in the form of e-books. This portal helps to choose best eContent from various sources. |
| **PM e VIDYA** | This project aims to benefit 25 crore school-children by providing online digital education. The portal also |

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| | provides links to the other projects like DIKSHA, Swayam Portal, Swayam Prabha TV Channels, Special e-Content for CWSN, Online Coaching for Competitive Exams started by the the government. |
| **ePathshala** | Besides providing e-resources like text-books of all classes, audio/video, it's also available in the form of App. It's the joint effort of MoE and NCERT. |
| **GYANKUNJ - SMART Classroom** | The project was taken up by Gujrat government to make all rural schools equipped with digital infrastructure. |

All the initiatives discussed above is definitely going to reshape the Indian education structure and will definitely benefit the rural sectors of the country. It has been observed in various studies that students who are involved in ICT teaching-learning methods are able to communicate more effectively and involve creatively. Also teachers are able to provide quality education by incorporating ICT in their traditional teaching methods. Many teachers in rural sector prefer mobile-based technology, Goggle forms to make test, WhatsApp group to share information. A teacher from Solapur, Maharashtra developed QR coded textbooks, so that link can be shared with students.

**Challenges of Using ICT in the Classroom**

There is no agreed way of incorporating the ICT tools in teaching-learning process. But it's always desirable to blend technology in the traditional teaching-learning process. In our country where we don't get electricity 24X7, how can we get access to high-speed/ high-quality broadband connections to access eContent. This is the chief issue which our government is facing at local level. Also providing training to teachers who belong to rural areas is difficult as they show less enthusiasm towards adopting technology. There is less technical maturity seen in teachers form rural area then teachers who belong to urban areas. Also most of the educators misunderstand that their jobs are threatened by the ICT tools. Rather they should take ICT tools as the facilitators to provide better learning outcomes.

## Conclusion

The ICT tools are able to provide inclusive aid to traditional teaching-learning methods which can raise the teaching standards. The only objective to incorporate ICT in teaching is to provide academic support, building confidence in both educators and learners and to make stakeholders aware about the choices in future learning. But as discussed absence of high bandwidth-internet facilities in slum or backward areas most of the projects are facing lot of challenges. Also there is need to coordinate the ICT initiatives taken by our government and NEP in education under the defined framework and guidance in order to integrate ICT seamlessly.

## Links to the Initiatives

### Government Links

- National knowledge Commission: www.knowledgecommission.gov.in/
- Sarva Siksha Abhiyaan: www.ssa.nic.in/
- Sakshat Portal: www.sakshat.ac.in/
- Media Lab Asia: www.medialabasia.in/

### Schools and Education Institutions

- National Institute Of Open Schooling (NIOS): www.nios.ac.in/
- Indira Gandhi National Open University(IGNOU): www.ignou.ac.in/
- Kendriya Vidyalaya Sangathan (KVS): www. kvsangathan.nic.in/
- Navodaya Vidyalaya Samiti: www.navodaya.nic.in

### Private Companies

- Microsoft: www.microsoft.com/india/education/pil/shiksha
- Oracle: www.oracle.com/global/in/pressroom/think_project.html
- National Institute of Information Technology (NIIT): www.niit.com
- Intel Education Initiative: www.intel.com/education/in/
- Cisco Education Initiative: www.cisco.com/web/IN/
- Educomp Solutions Limited: www.educomp.com

**Non Government Organizations**

- Azim Premji Foundation: www.azimpremjifoundation.org/html/
- Digital Empowerment Foundation (DEF): www.defindia.net/
- Centre for Science, Development and Media Studies: www.csdms.in

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