



Technology in Education in Rural India

Zahoor Ahmad Lone

Assistant Professor

Department of Computer Science

Government Degree College Kulgam, Kashmir, India

Abstract:

The education system of a super-power aspiring India needs to go through tremendous amount of change to keep pace with the education system of developed nations where digital education is the norm for the day. The present government's Digital India programme shall lay special emphasis on the development of teachers to enhance pedagogies and ensure uniform quality of teaching across the country. We know that technology cannot replace teachers, but only complement them. The key lies in using digital platforms and solutions to deliver secure and quality content and more importantly provide access to quality teachers. The educational technology shall change education for better – make it more affordable and accessible. This more important in Indian context because we have a massive deficit of access to high quality education till college level due to a number of seemingly insurmountable challenges, ranging from geographical distribution to socio-economic condition of the learners who attend a majority of Indian educational institutions. Also, the cost of educating one of the world's greatest populations has been steadily increasing and there is expectation that technology may make education affordable for those who are so far unable to benefit from the same.

Keywords: Education Technology, e-learning, hardware technology, software technology, educational apps, multimedia, audio visual

I. INTRODUCTION

Educational technology will be employed in the spread of useful information, the training and retraining of teachers, to improve quality education, sharpen awareness of art and culture and inculcate abiding values etc. both in the formal and non-formal sectors. (NPE-1986). Technology in education is defined as an array of tools and technologies that help in better understanding of the teaching-learning process. Educational technology is the study and ethical practice of facilitating e-learning, which is the learning and improving performance by creating, using and managing appropriate technological processes and resources. The earliest innovations and successful educational technology business models were created around providing software and hardware to make the classroom experience better. A lot of this is about making multimedia based study material, and having computers and screens in classrooms where audio-visual material can be used to teach. Providing hardware and multimedia content to make classrooms more lively, more interactive and to reduce dependency on quality of teachers as finding good teachers is one the biggest challenges especially in rural areas. India has a lack of content creators working on creating multimedia learning material in regional languages while there are some content creators when it comes to English and Hindi language although limited. The new government at the center has been emphasizing on e-learning to be introduced in all schools, but the biggest challenge is of sourcing suitable multimedia content which is regularly revised and updated. If a number of high-quality content creators cannot be found to work on study material on a sustainable basis, e-learning will remain only a pipe dream in India.

Educational Technology Projects in India: The Government of India in the Ministry of Education and Social Welfare realized

the importance of Education Technology for Qualitative improvement of education and included the Education Technology Project in its Fifth Five Year Plan in 1971.

This project had four sub-schemes as follows:

- Setting up an Education Technology Unit in the Ministry of Education and Social Welfare.
- Establishing a Centre for Education Technology (CET) in the NCERT.
- Assisting States for setting up Education Technology Cells and their programmes on 100% basis.
- Strengthening a few education institutions for undertaking Education Technology Programmes.

Accordingly, unit was started in the Ministry since 1971 and a CET in the NCERT was set-up during 1973.

Education Technology Cells come into being different states from 1972-73 onwards. [4] The Unit in the Ministry made all planning, policy-making and providing funds for implementation of the Educational project and the CET in the NCERT started

Functioning in the following areas:

- Systems designing and implementation.
- Prototype production of suitable hardware and software.
- Training in different areas of Education Technology.
- Research and Evaluation
- Collection and dissemination of information, data and consultancy services.

The Education Technology project was conceived as a broad-based and collaborative effort among the Ministry of Education and Social Welfare, the Ministry of Information and Broadcasting, the Indian Space Research Organisation and other concerned organisations. It is underlined the importance of inter-agency co-ordination, systematic planning, scientific evaluation and effective utilization. Operationally the scheme sought to

extend, the benefits of technology to large groups, particularly those in rural areas. It aimed at improving the quality of education at all levels, to reduce wastage and stagnation and to introduce new methods of teaching and innovation. [5] Recently, Information and Communication Technology (ICT) for education, initiative by UNESCO, conducted an extensive consultation to identify the competencies that teachers should develop to use technology effectively in the classroom. It is basically an umbrella term that encompasses all communication technologies such as internet, wireless networks, cell-phones, satellite communications, digital television computer and network hardware and software; as well as the equipment and services associated with these technologies, such as videoconferencing, e-mail and blogs etc. that provide access to information. [6]

How is technology being used in schools in India?

Technology is often seen as a solution to improving learning and teaching, but what exactly does this look like in Indian schools? Which types of technology are being used? Does technology actually enhance learning in this context, and if so – how? Can technology be successfully used in government and low-income private schools in rural India? To answer these questions, British Council India and Central Square Foundation recently launched a joint publication Teaching and technology: case studies from India edited by Dr Gary Motteram from the University of Manchester, UK. Twenty two case studies were selected from over 430 submissions following an open call.

The selected stories highlight the innovative ways in which teachers, schools and organisations are using technology to improve student learning and teacher development across the length and breadth of India. The collected data highlights a number of interesting features. Technology is frequently used to show their learners videos or images are frequently used to demonstrate concepts more clearly. This is particularly prevalent in science classes, but also used in social sciences and English lessons. Many teachers give their students tasks and projects in which they have to research topics using the internet and then co-create presentations of their findings. Such tasks can also benefit learner autonomy, as learners are required to find things out for themselves rather than rely on the teacher and textbooks. This also helps to develop digital literacy and internet navigation skills. There are several examples of flipped classroom approaches, with teachers asking learners to watch videos or read articles before coming to class, so that class time can be used for going into more depth and clarifying any misunderstandings.

A number of organisations aim to increase the quality of education available to disadvantaged learners by using tablets, videoconferencing, projectors and other technology to support their learning. Many teachers mention how they use technology for their own professional development, such as participating in social media communities of practice, following massive open online courses (MOOCs) and using the internet to deepen their own subject knowledge. This publication studies reveal that there are a lot of enthusiastic teachers and organisations using technology to enhance learning, and aims to inspire further action from others working in similar contexts.

II. WHY TECHNOLOGY IN EDUCATION:

Access to verity of resources:

With the help of technology, it is easy to provide audio visual education. The learning resources are being widens and widen. Now with this vivid and vast technique as part of the IT curriculum, learners are encouraged to regard computers as tools to be used in all aspects of their studies.

Enhancing learning environment:

The entirely new learning environment is changing process of teaching learning by adding elements of vitality to learning environments including virtual environments for the purpose. Critical thinking, research, and evaluation skills are growing in importance as students have increasing volumes of information from a variety of sources.

Anytime & anywhere learning:

With the help of technology the pace of imparting knowledge is very fast. One can study whenever he wills irrespective of whether it is day or night and irrespective of being in any part of the world. Internets support thousands of different kinds of operational and experimental services one of which is online library which can be used to get plenty of data.

Classroom based distance learning:

This kind of technology became very popular in late nineties and remained in use throughout last decade. Satellite beaming of live classes or VSAT, study centers equipped with hardware where students interacted with a teacher teaching remotely became very common for a lot of private sector tutorials. Even Indian government has tried to promote this model in the past with help from IITs and EDUSAT was a venture in this line. However, while low cost and high speed of internet have made this technology more viable and VSAT unnecessary, infrastructure cost of study centers and real estate prices work as a restraint on this model.

Social platform for a classroom to interact online

Peer to peer learning can be very important, and a class should continue to interact and learn collaboratively even after class hours. This idea led many social learning platforms to come up. Many social learning platforms like Grockit, remixlearning.com have achieved tremendous success. In India, pagalguy.com is a good example, but there are not too many other instances of social learning, especially for primary and high school education. The school boards can definitely do a lot in this respect.

Mobile based learning management systems

Typically in India, more people have access to smartphones with internet as opposed to computers with broadband connections. This is a big cause of investing significantly in mobile based learning technology. There is no doubt that putting learning resources in the phone itself turns it into a very useful tool.

Mobile based courses have to be optimized for a smaller screen, lower computing power, and slower internet. This is a difficult task, but several Indian startups have got this right.

Learning apps:

Educational apps are very popular with millions of android and iOS device users all over the world. There are apps that can help one to increase reading speed, or reduce the fear of mathematics. The fact that the price of tabs and smartphone is coming down significantly over the years and mobile internet is becoming very cheap – is very significant in this respect. How amazing it will be if Indian kids are able to learn skills and improve their linguistic, mathematical and cognitive abilities effortlessly and get access to world class education at a very low cost through apps. However, what needs attention at the moment is that Indian kids get access to content that is relevant to India, localized in its context and something that Indian children and their parents can connect to and solve their problems with. This is where a significant gap remains and Indian entrepreneurs and teachers must be encouraged to participate in the process of developing such India specific apps and content.

III. CHALLENGES

Despite early implementation of technologies in Education system, India still faces problems for the new technologies in education. Some of them are:

- Not enough or limited access to computer hardware & computer software in education institutes
- Lack of time in school schedule for projects involving use of technologies
- Lack of adequate technical support for education institutes
- Less teacher training opportunities
- Lack of knowledge about ways to integrate technologies to enhance curriculum
- There is also a negative facets of new technologies used in education. Many ethical questions and issues arise with this use of the latest technologies in education. [7]

IV. CONCLUSION

Technology is slowly and steadily making a foray in education. Knowledge is no more limited to books and the use of platforms such as websites, apps, videos, live chats, etc., have taken it to another level. A lot of schools and colleges – mostly in tier 1 and tier 2 cities – have embraced technology to make learning fun and interactive. Education Technology or ‘edtech’ as it has been termed now, is a growing sector. Interweaving technology with education seems to be helping students at all levels. Many educators in the city swear by instructional videos while parents are gradually opening up to the possibility of a platform which may help their wards learn something new in an innovative manner. The use of education technology is not restricted to cities and metros, as one might believe. It is expanding its base to Tier II and Tier III cities as well. The way edtech has evolved is interesting to see. While originally it aimed at providing a fun alternative to learning activities in terms of education-related games and platforms in general, they have now come all the way

to including technologies dedicated to enhancing learning and education itself. Besides aiming to make students adapt better to the rapidly digitising world around them, edtech also helps develop creativity as well as personalising content suited to the needs of each child based on constant evaluation.

V. ACKNOWLEDGEMENT

I would like to show our gratitude to the Prof Bashir Ahmad Rather, Principal, Government Degree College Kulgam for sharing his pearls of wisdom with me during the course of this research, and I thank my fellow colleagues Prof Sajad Ahmad Shah and Prof Shamim Ahmad Hakim for their insights and critics. I am also immensely grateful to Prof KaiserGiri, Head Department of Computer Science, Islamic University of Science and Technology, Awantipora, Srinagar for his comments on an earlier version of the manuscript.

VI. REFERENCE

- [1]. Kessler Sarah, 2010, <http://mashable.com/2010/11/22/technology-in-education/>
- [2]. Richey, R.C., 2008, *Reflections on the 2008 AECT, Definitions of the Field*. TechTrends
- [3]. Durham University News, 2012, [ur.ac.uk/news/newsitem/?itemno=15991](http://www.durham.ac.uk/news/newsitem/?itemno=15991)
- [4]. Jagannath Mohanty, *Modern Trends in Indian Education*, Second Revised & Enlarged Edition, 2004, Deep & Deep Publication Pvt. Ltd.
- [5]. Research Report of NCERT, 2009, http://www.ncert.nic.in/new_ncert/ncert/rightside/links/pdf/focus_group/educational_technology.pdf
- [6]. ICT in Education in India, 2012-13, <http://www.icbse.com/ict-education>
- [7]. Research Findings and Implications for classroom Practice (Texas Instruments), 2005, <http://education.ti.com/sites/US/downloads/pdf/CL2872.pdf>
- [8]. The National Policy on Education (NPE,) 2009, www.ncert.nic.in/oth_anoun/npe86.pdf
- [9]. Teaching with Technology, 2006, http://cte.uwaterloo.ca/teaching_with_technology/
- [10]. The Impact of Media and Technology in Schools, 1998, <http://treeves.coe.uga.edu/edit6900/BertelsmannReeves98.pdf>
- [11]. Knowledge gathering as it changes with new technologies, 2010, www.iicm.tugraz.at/iicm_papers/IADIS_Knowledge_gathering
- [12]. Recent Trends in Education, 2010, <http://education.mapsofindia.com/recent-trends-education.html> <http://startup.nujs.edu>