



Digitalized Teaching-Learning Environment through ICTs: Its Challenges and Government Initiatives on ICT in India

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Abstract: *The main objectives of the present article is to analyse the initiation of digital mode in teaching-learning transaction through ICTs and how digital lab, internet, slide projector, overhead projector, web etc. are dominating the present educational setting. At the same time this paper tries to know the challenges that, has been coming across and initiation has taken by the Indian government towards implementation of ICT equipments in teaching-learning process in Indian context. All the relevant data has been collected from secondary sources and analysed descriptively with quotation of some familiar persons.*

Keywords: *Digital native, teaching-learning transaction, ICTs, virtual learning, i-learning.*

I. INTRODUCTION

Gone are the days of rote learning and chalk and talk. Today there are a variety of ICT solutions available to make the teaching-learning process fun and dynamic. One of the most popular tools is digital labs. Dynamics of this emerging industry and its growing popularity directly influenced in our education system also. India boasts of the largest higher education system in the world. There are over 610 universities (including about 130 deemed universities) set up under central and state legislation, 36,000 colleges affiliated to these universities, and a very large number of institutes of technical education; medical, legal, dental, nursing teaching and polytechnics. The school education sector is even bigger with more than 1.4 million private and government schools in various states of India. As per IDFC's India Infrastructure Report 2012, the Gross Enrolment Ratio (GER) at elementary level is 119 percent, at secondary level 63 percent, higher secondary level 36 percent, and in higher education 15 percent which is much lower than the world average of 26 percent. According to Planning Commission paper, Approach to Twelfth Five Year Plan (2012-2017), the effort to expand educational access is severely constrained by the lack of suitably-qualified, appropriately-trained human resources in adequate numbers. There are half a million vacancies of teachers in the country and another half a million teachers are required to meet the RTE norms on pupil-teacher ratio. There is acute shortage of high quality teachers. There are many problems plaguing our education system, one of the biggest is the skewed teacher-student ratio in the country. Contrary to this scenario is, IIT professors taking virtual classes in 100 engineering colleges across India, more than 20,000 colleges connected to each other through video-conferencing system designed for online classes that enables whiteboard collaboration and content sharing, more than 15,000 teachers being virtually trained at the same time in far flung areas of the country.

II. ROLE OF ICT TO BE INTERACTIVE FOR “DIGITAL NATIVE” LEARNER

This is the virtual age where distance hardly matters. Information and Communication Technology (ICT) has transformed the education sector in every sense. E-learning is the latest buzzword. The use of ICT in schools and colleges has not only become a parameter of quality education but has also helped in bridging the gap between students and access to quality education. This is the age of smart kids or e-kids, where computers, internet and use of technology in every sphere of life is a given for them. This generation has always been exposed to gadgets and latest technology hence it only makes sense to teach them the way they want to learn. Consequently, schools and colleges have incorporated latest technological tools to enhance the teaching-learning process. Today, most of the schools have smart classes, a complete multimedia based classroom that has revolutionized teaching and learning of subjects like Mathematics, Science, Social Sciences elements. Incorporating ICT boards into the classrooms have made learning fun as the students are able to use their kinesthetic skills to drag and drop items where they belong. ICT allowed learning to make interactive and engaging for the 'digital native' students. Introduction of ICT into education as an instructional tool has taken a new meaning by facilitating a new paradigm into education for higher order thinking skills and strengthening instruction information sources, data collection, and data analysis strategies. Digital labs in various subjects are very popular in



teaching-learning process. It fosters individualized and peer learning. Teachers can easily explain and demonstrate many abstract concepts making it more comprehensive for students.

The complete model of teaching-learning is up for change. The traditional chalk and board method will give away to various models of “blended learning”. The new model will involve equal effort from both teachers and students in a making teaching-learning a dynamic process. These days language labs are the most popular amongst schools and colleges. Mathematics, Science and Robotic labs are also gradually finding takers in the market. Use of ICT can prove to be a big boon to distance learning education. It can change the entire set up by bringing in much required quality, transparency and repute in distance learning education. Digital labs can prove to be an enriching instructing tool in Massive Open Online Course (MOOC), an online course aimed at unlimited participation and open access via the web. The stigma associated with distance education is changed; it has become huge and available to anyone, anywhere at affordable cost in diverse subjects, in various formats. Universities are not only providing traditional teaching but also initiating online teaching as well.

III. BARRIERS OF DIGITALIZED TEACHING-LEARNING TRANSACTION

Dr Haresh Tank, Director, Station-e Language Lab clearly motioned that “IT initiatives in educational institutes are more of an exception rather than the rule, unlike the west where IT seamlessly transforms systems. India is far behind the curve in terms of use of ICT in education. We seem to have narrowed down the definition of ICT. It not only refers to the latest computer and internet based technologies, but also to simple audio visual aids such as the transparency and slides, tape and cassette recorders, radio, video cassettes and television and film. But currently, there is more focus on using computer and internet aided-learning in schools and colleges. One of the biggest challenges faced during implementation of IT solutions in schools and colleges is resistance from teachers. Talking about the misconception that technology is substituting teachers in a classroom. Technology solutions are designed to provide the teacher with adequate tools to make the class more interesting and interactive. The usage of these resources depends upon the teacher and thus their role remains paramount. Another problem faced is that teachers do not use the ICT platforms very effectively in classrooms. Vivek Gupta opined “In developed countries, the teachers are really motivated and are eager to use the platform but this lacks in India. The full capability of the platform is not explored. Teachers usually stick to what we offer, they don’t experiment with the platform. It would be ideal if teachers can develop their own content rather than depending on companies to provide the content”. Bharathy Bharadwaj also feels the same, “we see a lot more technology awareness and enthusiasm from teachers in US, UK, Australia and Japan compared to teachers in India at this point of time.” But Steve McKee, President, Labtech International Ltd feels that resistance from teachers in adapting to new technology is a universal problem. “It is a global problem that teachers are not very encouraging initially but a lot can be improved with proper training and awareness.” Labtech is almost 30 year old company but has recently opened its India office. Talking about his experience of operating in India, Steve says, “India is a unique market. One-model-fits-all theory does not work here. We have to really personalize our products in India. The major problem in India is low internet connectivity, poor infrastructure, low literacy levels and its diverse market.” Steve further adds that on a global level, the scope of ICT is immense, nearly 40 percent of global population has access to internet and there is nearly 90 percent mobile penetration in the world. Even in India, the internet penetration and mobile network is growing at a fast rate and this will open up huge possibilities for use of ICT in education sector in India. India ratings and Research Pvt Ltd, a rating agency, estimated the Indian education market to be worth `5.9 trillion in 2014-15 as against `3.33 trillion in the 2011-12 financial year. India has at least 250 million students in schools and some 27 million in higher education. The agency further said that the education expenditure in both urban and rural India has grown steadily.

IV. GOVERNMENT INITIATIVES TOWARDS ICT ENVIRONMENT IN TEACHING-LEARNING PROCESS

Government has always shown a lot of interest in use of ICT in education. It sees ICT as a great enabler in education that can bridge the gap between urban and rural education sectors and help in tackling the issue of access and quality in India. Consequently, the government has taken many initiatives to improve IT infrastructure and promote use of ICT in education. The National Curriculum Framework 2005 (NCF 2005) highlights the importance of ICT in school education. It states that “judicious use of technology (multimedia and ICT) can increase the reach of educational programmes, facilitate management of the system, as well as help address specific learning needs and requirements of young learners, teachers and teacher educators. Possibilities of teaching and learning at varied paces, self-learning, dual modes of study, etc. could all benefit from the use of technology, particularly ICT.” The scheme, Information and Communication Technology in Schools was also launched in 2004 to provide opportunities to secondary stage students to develop ICT skills and to promote ICT aided learning process. The scheme is a major catalyst to bridge the digital divide amongst students of various socio-economic and other geographical barriers. The Central Board of Secondary Education (CBSE) has adopted Continuous and Comprehensive Evaluation (CCE), an education system that aims to move away from the traditional chalk and talk method of teaching. Taking onto digitization in a big way, CBSE has also recommended online labs to its affiliated schools for helping students understand experiments better. It has also advised schools to experiment with Mathematic lab. This has actually shot up the demand for labs in schools, making the industry more sustainable. “CBSE and KVS have allocated a lot of budget to schools for setting up language labs. CBSE schools focus on assessment on spoken and listening skills and that has increased the demand. It has gone up in last in last three to four years,” says Vivek Gupta,



Country Manager, Sanako Corporation. Even All India Council for Technical Education (AICTE) has made language lab as part of essential and desired requirements for technical campus. It is an essential need to be made available at the time of the expert committee visit. Government has also come out with a National Mission on Education on ICT. The content portion of this mission has an ambitious vision of catering to the learning needs of more than 50 crore Indians and of providing a one stop solution to all the requirements of the learning community. A budget allocation of `502 crores has been made in 2008- 09 for the National Mission on Education through ICT. Professor Kamal Bijlani, appreciating the constructive and encouraging role played by the government in this sector says, “There has been a huge push by the government in this sector. National Mission on Education on ICT has several programmes funded by government. Government plays a huge role in bringing inclusiveness through use of ICT in education.” Anil Goyal sums up the crucial role played by the government in providing the much required financial aid in the sector, saying, “With the National Policy on Education emphasizing the increasing use of computer-related technology for the betterment of education, government spending on ICT has correspondingly increased, by 53.2 percent to `340 crore in the 2013-14 Union Budget. It is expected to grow five times by 2020 due to the current low level of penetration in government schools”.

REFERENCES

1. “Asian Journal of Distance Education” ISSN 1347-9008 Asian J D E 2004 vol. 2
2. Madhavan, K., & Roy, M. (2000). Role of distance education in developing countries. Punjab, India: Ambala Publishing.
3. Ramanujam, P.R. (2002). Distance open learning Challenges to developing countries, (p. 31).New Delhi: Shipra Publications