Available online at http://www.ijims.com
ISSN: 2348 – 0343

ICT and Digital Divide in Indian School System

Gopal Krishna Thakur
Director - School of Education
Noida International University, Greater Noida, India

Abstract

The education system across the globe has undergone major transformation with the exceptionally fast paced change in technological domain of knowledge. As a result, ICT in its own way has managed to make a permanent place for itself in education sector – specifically in school education. Still, if we look into the situation and assess the pace with which ICT has made its place in school system, we find the situation not so convincing. Our schools, mainly govt. schools are ill-equipped in terms of infrastructure and basic facilities, our teachers are not trained adequately to infuse ICT in education, and execution of many enthusiastic policies are done half-heartedly, thus leaving the less privileged segment of children, who come from lower socio-economic class of society and are largely dependent on govt. school system for their education, with very little or no access to digital learning. This frustrating situation creates a 'digital divide', which refers to the gap between people with effective access to digital and information technology and those with very limited or no access at all. It includes the imbalances in physical access to technology as well as the imbalances in resources and skills needed to effectively participate as a digital citizen. This paper attempts to look in to the status of ICT facilities in the govt. schools of Uttar Pradesh. The paper examines as to how far the govt. policies and efforts have been able to bridge this digital divide.

Key Words: Information and Communication Technology, Digital Divide, ICT Infrastructure, Literacy and Education

Introduction

Information and communication technology (IT) continues to have a significant impact on the lives of people and the global economy and also gives rise to a host of important issues. One major unanswered question at the national and international level is whether the use of information technologies leads to increasing disparities within and among developing countries. A major gap has always existed between affluent people living in developed societies with an access to modern information technology and underprivileged people living in many parts rural communities in underdeveloped countries. Even today, an unequal adoption of technology excludes many from harvesting the fruits of the digital economy. There is a significant divide between those who can effectively use new information and communication tools, such as the Internet, and those who cannot. While a consensus does not exist on the extent of the divide (and whether the divide is growing or narrowing) in developed countries, researchers are nearly unanimous in acknowledging that some form of divide exists at present in developing countries.

Information and communication technology (ICT) can empower people, benefit businesses and individual and virtually link people around the world to share their views, ideas, and innovations. It can enable and assure sustained economic growth, better public welfare, and stronger social cohesion and democratic forms of government. The heightening process of globalization and the emerging IT revolution is rapidly transforming our lives and business practices. As the IT innovation continues to grow, it is important that steps be taken to help bridge the digital divide that has been emerging. There must be some process in place to grant all societies (rich or poor) and individuals equal access to the opportunities that have arisen as a direct result of these technological achievements.

In a developing country like India, advances in ICTs have brought a lot of opportunities and perhaps a whole lot of challenges as well. One of the main challenges is the considerable gap between the information have-s and information have-nots -what we call the digital divide. And, this digital gap starts right from school. We, in our country, have two parallel worlds taking shape in schools broadly divided as Govt. schools and Public Schools, i.e. private schools. The private schools have more or less well maintained infrastructure and better facilities than their counterpart i.e. Govt. schools. Govt. schools, excluding some exceptions, are in miserable conditions. This is despite the fact that these schools are funded with a substantial budget by the Govt. Still, students studying in these schools are deprived from access to better learning environment and modern techniques of teaching-learning that includes ICT. There are so many factors that could be held responsible for this. The fact is that this scenario is not convincing and clearly responsible for the digital divide amongst the future generation of our society. The present paper highlights the concept of digital divide in general and the Indian scenario in particular with special reference to some select areas of the state of Punjab.

Digital divide: Genesis of the Concept

Digital divide, arguably the most intriguing phrase of the present day seems to have its origin in the United States of America. Many considered Andy Grove one of the creators of digital divide network coined the term. Few others say the credit goes to Larry Irvin. According to Benton Foundation, former President Bill Clinton first used the term in the discussions of the National Information Infrastructure in 1993. Though there are controversies existing as to who coined the term, there is a wider acceptance on the increasing gap between information have-s and Information have-nots -what we call the digital divide. Recent report of UN appeared in New York Times lamented the growing digital divide in developing countries. The Indian subcontinent is struggling to stay alive with the growing digital divide, leaving the poor illiterates poorer and the rich people richer. Government at the centre is working on the issue, taskforce on IT and software has been set up, IT policy has been formulated along with the announcement of telecom reforms in 1999 attracting greater participation from private sector, etc. In spite of these achievements, the country faces several challenges. These challenges range from child mortality to access to information and communication technology for the commoners. Above all, lack of a grass-root level initiative and a collective effort in the attitude towards bringing change in the way we operate are some of the main reasons for this disparity.

Digital Divide in India

India, amongst one of the leading developing countries in the world, is loaded with 16% of the world's population, 30% people in India live below the poverty line (people (family of five members) who live with less than INR 50/day). This means that these people have no proper electricity, no proper drinking water supply, no proper sanitary facilities and well over 40% are illiterates. More than 65% live in the alienated rural area and 60% earn their livelihood from agriculture. Only a meagre 3.63% of over 1 billion populations have access to telephone and less than 1% of population have a PC and this constitute even the business houses as well. What more is required to present the dismal state of our country? In order to have an equitable access, for the major portion of our population, to resources of the country, we need to provide timely access to the right information at the right time at the right place to the right people. Obviously we need to connect the rural population and hence it is classified as the most challenging assignment of the nation today. One such concern of this paper is about those from the low-economic family background. The next few sections will delineate the major issues and problems of digital alienation in India, major successful attempts, and the major challenges ahead along with possible solutions. In terms of ICT and digital facilities in our education system, there is a great divide between haves and have nots; between govt. schools and private schools. Lately, Govt. of India has tried to

bridge this gap by introducing some schemes for govt. schools and for masses in general. The Information and Communication Technology (ICT) in School Scheme was launched in December 2004 to provide opportunities to secondary stage students to mainly build their capacity of ICT skills and make them learn through computer aided learning process. The Scheme provides support to States/Union Territories to establish enabling ICT infrastructure in Government and Government aided secondary and higher secondary schools. It also aims to set up Smart schools in KVs and Navodaya Vidyalayas which are pace setting institutions of the Government of India to act as "Technology Demonstrators" and to lead in propagating ICT skills among students of neighbourhood schools. The Govt. of India has made a provision of Rs. 315 Crore exclusively for ICT in school education in its budget allocation of year 2013-14.

Status of Schooling in Uttar Pradesh

Spread over an approximate area of 240000 Sq. km and with its 19.98 Crore population, the state tops the list of Indian states in terms of population. As per 2011 Census, the state has a literacy rate of 67.68 % which includes male and female literacy rate of 77.28% and 51.36 % respectively. Uttar Pradesh houses some of the best schools and prestigious higher learning institutions in India. The state provides free and compulsory primary education to students between six to fourteen years of age in tune with the Sarv Shiksha Abhiyan of Government of India. Besides, some of the initiatives having been taken by the state government are – (i) 'Hamari Beti Uska Kal Yojna' for 10^{th} passed minority girls, (ii) 'Padhe Betia Badhe Betia' for 10^{th} passed BPL (below poverty line) category girls, (iii) 'Kanya Vidya Dhan Yojna' for 12^{th} passed girls, (iv) Tablet and Laptop distribution scheme for 12^{th} passed students. Special initiatives have also been claimed to be taken by the state government to strengthen and increase the number of schools and other academic institutions in the state.

The Present Study

The Government of Uttar Pradesh has recently announced its new programmes for school education. The policy aims to increase the literacy rate further, by strengthening 'Sarav Sikhshya Abhiyan' to cover all children of the State. In a recent announcement, the govt. of Uttar Pradesh announced that a substantial amount to be spent on promoting Information and Communication Technology (ICT) in schools and higher education institutions that included the famous laptop distribution scheme. Yet it has to been seen as to what extent these desired goals are achieved as, there are lots of dilution that take place between policy formulation and execution of any programme. A survey of the status of ICT education in govt. schools seemed pertinent to find out the role ICT in bridging the digital gap that presumably exists in between students of govt. school system and those of private school system. A survey of govt. schools of Gautam Buddha Nagar district and adjoining areas reveal that in govt. schools, status of computer facilities is not satisfactory. Though some of the corporate houses have provided computer facilities in some of the schools of the district under CSR (Corporate Social Responsibility) scheme; however, the govt. schools lack basic support system to make effective use of the computers and ICT facilities. Contrary to the scenario in private schools, where situation is somewhat better, the govt. schools are in a pathetic state. Children of these govt. schools are far away from having access to ICT. Children are still engaged in traditional learning process. In fact, they are deprived from the basic facilities such as seating arrangement and toilets. ICT facility is a farfetched dream in such schools. Later come barriers like electricity crisis and internet connectivity, etc. Shortage of teachers with ICT training is also there. And the most important – will power of the stake holders in the educational process of govt. school system seems missing.

Barriers to digital opportunity in Indian Govt. schools

There are many factors coming in the way of the ICT movement in schools. Considering the present scenario in perspective, an attempt has been made to analyze the more fundamental problems and issues involved in the path towards digital opportunity in India.

Lack of availability of ICT Infrastructure in govt. schools

With respect to the network infrastructure, India does have a good network infrastructure in place, the railway reservation systems, the stock exchange transaction systems; NICNET connecting the centre and the state Government, etc. are highly reliable networks. In total, India spends about 28% for ICT only. In spite of these initiatives the ICT infrastructure required for the govt. schools is still not in the priority. At least from the survey, one can assume. Almost all or a majority of schools have been provided with a computer system, these are seldom used. Also, lack of proper power supply and internet connectivity adds to the problem.

Lack of coordinated Government initiatives

India has inherited a bureaucratic administrative system, which has convincingly proved its inefficiency to interact with 1 billion people. The famous "red-thread" reveals the incredibly slow, inefficient, highly complex and inaccessible system of operation. Therefore reforms shouldn't stop just by establishing a centre for e-governance, it should rather get started here. However there are challenges ahead, major ones are: bringing in a positive attitude towards moving to e-governance, educating the bureaucratic staff about the need for change and imparting training to use the technology effectively. Creating a viable coordination between the centre, state and various departments, that have a role in it.

Low literacy and education

Despite having goal set to increase the educational investment to 6% of the GDP, India spent only half of it, i.e. 3.8% of its GNP on education, when the world average on education spending is 4.9%. India has 46% of its population aged 15 years and above as illiterates. On the contrary China spends only 2.6% of its GNP and has only 22% of its population aged 15 years and above as illiterates. Education and literacy rate in India varies hugely from one part of the country to the other. As per the 2011 census, the overall literacy rate in India stood at 74%.

Socio-economic factors

It is seen that in govt. school system, those students go who come from a low economic background. It is very difficult for those students to have access to ICT own their own. As this has monitory implications involved with it. In rural areas, despite having varied social background, students studying in govt. schools are generally from such background that their connectivity with the modern world is quite remote. Generally if the ICT access costs were brought down a vast majority would be able to connect to the ICT. Therefore we need to develop and encourage the R&D community to innovate better and affordable ICTs considering local requirements in perspective.

Conclusion

Even though computer education was introduced twenty to twenty-five years back in some urban schools in the country, most schools in rural and sub-urban India, especially govt. schools still do not have adequate teachers, let alone a computer laboratory. In short, an enormous digital divide prevails in India. In order to bridge the digital divide, we need to train teachers, provide schools and students with the right IT tools and evaluate and strengthen students on a regular basis. The costs for bridging this digital divide can be prohibitive. Even though PCs, laptops and Internet connectivity have become cheaper, they remain unaffordable for a majority of schools in India. In order to take ICT to every school, we need to keep the total cost of ownership low. We need to develop models of collaboration among researchers, social

scientists, technologists, etc. so that local requirements are met in a technology innovation. We need stable and corrupt free government that can inculcate the much- needed change in the bureaucratic set up.

Though we have to go a long way in accomplishing this challenging task, there are some projects giving some hope for improvement. Nevertheless no project can sustain without adequate financial support and willpower of the people involved in the process, so there should be a mechanism to sustain these projects with the support of government industry-community participation. Sufficient ICT trained teachers should be appointed in the schools and the existing teachers must undergo ICT training and efforts should be made towards their attitudinal change. Then only the far-fetched dream of ICT enriched govt. schools can be realized.

References

Free and Compulsory Education Bill And Other Issues Related to Elementary Education, Report of the Central Advisory Board of Education (CABE) Committee, June 2005, www.education.nic.in/cabe/Fcebill.pdf

https://www.itschool.gov.in/pdf/Study_by_IT4Change_Bangalore1307.10.pdf Last accessed on Oct. 04, 2013.

ICTs in School Education - Outsourced versus Integrated Approach, Gurumurthy Kasinathan, 2009.

Jacobsen, M., Clifford, P., & Friesen, S. Preparing teachers for technology integration: Creating a culture of inquiry in the context of use. Contemporary Issues in Technology and Teacher Education. 2002; 2(3), 363–388.

Kraut, R., Olson, J., Banaji, M., Bruckman, A., Cohen, J., & Couper, M. Psychological research online: Report of board of scientific affairs' advisory group on the conduct of research on the internet. American Psychologist, 2004; 59, 105-117.

Mishra, P., & Koehler, M. Technological pedagogical content knowledge: A framework for teacher knowledge. Teachers College Record, 2006; 108(6), 1017-1054.

Mitchem, K., Wells, D., & Wells, J. Effective integration of instructional technologies (IT): Evaluating professional development and instructional change. Journal of Technology and Teacher Education, 2003; 11(3), 397-414.

Murphy, C. Effective use of ICT by student teachers: Is it improving? Society for Information Technology & Teacher Education International Conference. Proceedings of SITE 2000, San Diego, Ca, USA, 2000; 1656-1661.

National Policy on Information and Communication Technology (ICT) in School Education Ministry of Human Resource Development, Government of India, 2009.

Paul, Anthony. Can India catch up. Fortune, 2002; 145, 9; 33-40

Qureshi, E. Investigation of factors affecting students' satisfaction with online course components. Unpublished doctoral dissertation, University of Windsor, ON, Canada 2004.

Toomey, R., & Ketterer, K. Using multimedia as a cognitive tool. Journal of Computing in Education, 1995; 27, 472-482.

Towards A National Policy on ICT in School Education in India, a Multi-Stakeholder Perspective. http://www.csdms.in/gesci/Information and Communication Technology for Education in India and South Asia, Infodev, 2010; http://www.infodev.org/en/Document.890.pdf Last accessed on Oct 04, 2013.

Yasmin Ghahremani. Heroes of the digital divide, Asia Week, June 29, 2001