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Role of ICT in Educational Planning in India

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ABSRACT

This paper basically related with role and trends of ICT in education sector like primary, elementary, secondary and higher education. The main purpose of ICT is to develop human mental resources, which allow people apply the existing knowledge and produce new knowledge. This paper examined the historical perspective of ICT and uses of computer and its relevance to teaching and learning. in Indian education system. The need for computer education and its objectives in all education level persistently from primary education to higher education. ICT plays a significance role in the development of all sectors like, economy, education and health also. There are certain challenge comes in the way of ICT development. Paper also describes the importance of ICT in inclusive education or for the children with special needs.

Keywords-- ICT, (Information Communication Technology), Education Planning, Teaching and Learning

I. INTRODUCTION

The most striking innovation in the field of education is the integration of information and communication technology in education. The educational institutions should cope with the suddenly increasing demand for information and skills. One cannot depends on only the same big blackboards, an overhead projector and video graphed concept as either because the transaction of curriculum is poor or the tools used in its transaction lack application and skill (Arulsamy & Sivakumar, 2009). In recent times, the world has witnessed a rapid increase in technological innovations. This era ushered in the advent of the electronic computer system among other modern technologies. At present the computer technology has permeated nearly all aspects of human organizational roles and education (Toyo, Ajibade, Ojedokun, 2009).

In India, use of electronic media technologies in classroom has a short history. However, it has helped to shift the focus from teacher to learner, and teaching to self learning. Now blending of technology and its application in the delivery of education promises to increase productivity, quality of curriculum transaction and learning experiences. It is possible to have greater access to quality education because integration of ICTs makes amazing range of media: audio visual, radio, television, computer, telephone, internet and satellite available to us for quick, effective and reliable communication, data storage and retrieval (Chaudhary, Garg & Gupta, 2011)

Lal Bahadur Shastri, the former Prime Minister of India once said ,"Jai Jawan, Jai Kisan", but after some time when Atal Bihari Vajpayee became Prime Minister of India ,then he added " Jai Jawan, Jai Kisan, Jai Vigyan". The statement as given by Atal Bihari Vajpayee highlights the importance of Science and Technological Tools in all walks of life. So, no one can deny the importance of Sciences and Technology Tool in our daily life (Bansal & Sexena, 2016)

India is second largest democracy and the second most populous country in the word (Panigrahi, 2010). As we enter the twenty-first century, there has been considerable international attention given to the role that ICT can play in economic, social, and educational change. It is believed that the use of ICT in education can increase access to learning opportunities. It can help to enhance the quality of education with advanced teaching methods, improve learning outcomes and enable reform or better management of education systems. ICTs focus so much on information and learning from text. The 1998, UNESO World Education Report, Teacher and teaching both are in a Changing World, describe the radical implication the new ICT has for conventional teaching and learning; to improve learning (Panigrahi, 2010).

II. WHAT IS ICT?

Information and communication technology is a term that describes types of technology that are used specifically for technology. It is like information technology, but ICT more focus on technologies that deals with communication, like cell phone, the internet, and wireless network, among other things.

ICTs are an expanding assembly of technologies that can be used to collect, stores and share information between people using multiple devices and multiple media. In the study the term ICTs refers to Internet, mobile phone and satellite/dish television which are also known as new ICTs. The role of ICTs in educational development depends on factors like infrastructure, teacher training and education and technical support assigned to technical staff. It is mandatory for ICT development that proper infrastructure for example rooms and computer labs, power supply, hardware and software expert, internet connectivity etc.

Factors influencing ICT adoption have been studied at various levels: macro level (regions and countries), mezzo level (organizations) and micro level (individuals and households). Sharafat & Lehr argued that education is the sine qua non for both the development of information and communication technologies (ICTs), and also for their effective utilization to achieve sustainable development. Without education, both the development of the ICT sector and its role in achieving sustainable development would be almost inconceivable (Sharafat & Lehr, 2017).

III. HISTORICAL PERSPECTIVE OF ICT IN INDIA

Number of policies has been initiated since independence for becoming qualitative and quantitative development of education. In 1984, the then Prime Minister stated "Informatization of Indian society as an effective route to development". As a result, massive programs of computerization launched in public sectors as well as in the commercial undertakings, and administrative departments.

First generation of information and communication technology was written and printed material which was distributed through the postal system, which developed in every country from the end of the nineteenth century onwards known as correspondence courses, students generally were provided with study, guides and textbooks. In June 1923 the Radio Club of Bombay made the first ever broadcast in the country. This was followed by the setting up of the Calcutta Radio Club five months later. Prior to the development and wide-spread deployment of television, radio was the first electronic mass medium. Educational programmes by AIR were broadcast in 1937. Further, Educational Television (ETV) was introduced in the secondary schools in Delhi in 1961.

The scheme of Educational Technology (ET) was started in 1972 during the 4"' Five Year Plan (FYP). Under the scheme, 100 percent assistance was given to six State Institutes of Educational Technology (SIET) and the States/UTs were assisted for procurement of radio cum cassette players and colour TVs.

In 1998, a High Power National Task Force on Information Technology and Software Development was set up. In 1999, the Ministry of Information Technology was established by bringing together Government agencies involved in different Social, economical and technological changes of the past decades have made education and training more crucial resources than ever. Computer technology and communication Technology are the two main pillars of ICT and their role in information storage, retrieval and dissemination cannot be underestimated (Aich, 2012). For the ICT development there is a need of good infrastructure or smart school. Smart schools were recommended on a pilot basis in each state for demonstration purposes. It was also stipulated that 1 to 3 percent of the total budget was to be spent on provision of computers to all educational institutions up to secondary and higher secondary level during the next five years.

Gyan Darshan was launched in January 2000, with three completely digital and round the clock TV channels dedicated to education. In November 2001, an FM radio channel, Gyan Vani was launched through different IM stations in the country. Shiksha India (Dec. 2001), a non-profit organization was set up by the Confederation of Indian Industry (CII) created a teacher portal using open source tools and technologies. A programme called Vidya Vahini was launched by Indian Government in 2002 with a focus to provide IT and IT enabled education. The target was to cover 60,000 schools (out of total 1.1 million schools) in India over 3 years. The pilot project proposed covering 150 schools to equip each school with a computer lab, internet, intranet and television to facilitate video conferencing, web broadcasting and e-learning. A project T4 was launched in September 2002 in four states of India: Karnataka, Chhattisgarh, Jharkhand and Madhya Pradesh. Under this programme, interactive radio instruction (IRI) and educational television were provided even in remote areas to reach populations. The material was designed for subjects like Mathematics, Science and English. This programme was funded by USAID and was a collaborative effort of state governments and local organizations.

India's first dedicated education satellite was launched in 2004. It needed low-cost infrastructure like television set and receiver which were provided in all sectors of education. EDUSAT made it possible to receive direct to home quality broadcast of educational programmes. Video films were telecast by the state governments via EDUSAT covering about 885 schools. The National Policy on Education 1986, as modified in 1992, stressed the need to employ educational technology to improve the quality of education. The policy statement led to two major centrally sponsored schemes, namely, Educational Technology (ET) and Computer Literacy and Studies in Schools (CLASS) paving the way for a more comprehensive centrally sponsored scheme - Information and Communication Technology @ Schools in 2004. Educational technology also found a significant place in another scheme on up gradation of science education. The significant role, ICT can play in school education, has also been highlighted in the National Curriculum Framework 2005 (NCF - 2005). ICT for quality improvement also figures in

Government of India's flagship programme on education, Sarva Shiksha Abhiyan (SSA). In December 2004, the ICT in school scheme was launched to open a window of opportunity for secondary stage school students across the country in partnership with States/Union territories while the emphasis had been on computer literacy programme. Intel Learn Programme is a community based programme designed to help learners (8-16 years) to develop 20st century skills (technological literacy, critical thinking, problem solving and collaboration). The programme was launched in 2004 and till date had reached more than 1, 80,000 learners in the centres across 22 states and 5 UT's in collaboration with Navodaya Vidayalya Samiti in Kerala and Chandigarh. In addition to collaboration with NVS, the programme also runs in collaboration with Kerala State IT Mission and SSA respectivsely.

Intel Teach Programme was started in 2005 in over 35 cities to train classroom teachers to use technology. This programme in collaboration with Department of Education trained teachers to enable them to effectively integrate technology to enhance student learning. The programme covered more than 5000 government and private school teachers in 20 districts

Interuniversity network for higher education and research under the name "INDO-US collaboration" was launched in 2005. It collaborated over 20 American universities, Amrita University, Indian Space Research Organization (ISRO) and the Department of Science and Technology (DST). The purpose of INDO - US collaboration programme was to deliver classes taught by US faculty to colleges and universities throughout India making use of EDUSAT e-learning network so as to enhance higher education and research. Provision of digital library of teaching materials and assets of participatory faculty and researchers was also made available to Indian learners under the programme. Mission 2007 was launched with an objective to make 600,000 Village Resource Centres by August 15, 2007. This project involved Bharat Sanchar Nigam Limited (BSNL) so as to provide connectivity to 80000 villages through wireless broadband. Village Knowledge Centres served as information dissemination centres which provided instant access to farmers to latest knowledge available in the field of agriculture. It was a place to render distant services from single window point to rural masses especially in remote areas of the country through modem information and communication technology.

IV. WORLD SCENARIO IN RELATION TO ICT

This role has been most pronounced in the world's developed countries, where technology has permeated businesses, schools, and homes, and changed the way people work, learn, and play. The United Nations and the World Bank both advocate the use of ICT to support the development of the world's poorest countries. Since the introduction of information and communication technologies (ICT), their integration into education and the associated financial investments have been policy concerns in many countries.

Many experiments have taken place in the countries, and a large body of knowledge has accumulated in this regard. ICT now provides a new and potentially highly effective vehicle for advancing the quality of education at all levels; this issue needs to be seriously explored and the alternatives expounded (NPE, 2016).

V. NEED FOR INFORMATION AND COMMUNICATION TECHNOLOGY

There is a worldwide need felt for integrated ICT into education in order to improve the pedagogy to reflect the societal change (Jain, 2012). In the earlier times education was for acquiring knowledge rather than for employment, but in the post-industrial society it has become a major prerequisite for employment. The technological advancements have created new areas of growth and spawned a host of career option. Computer technology has merged to form the new field called information and communication Technology. As technology aids has been reduced substantially now since computers can do all the things to facilitate qualitative learning. Keeping pace with the emerging needs and opportunities, it is needed to incorporate the technological developments in the teaching and learning process.

Advancement in computer technology has contributed to the overall development of people across the world. Now, everybody talks about the revolution of computer technology, the role it is playing and also it is going to play in the future. Computer could replace many of the functions performed by the human being. The emerging computer technology is gradually covering the entire span of human activity. The role of computer in teaching has more than one facet; they perform the vocational and pedagogy roles. As computers are pervading every aspect of life, computer knowledge is essential for various professional including teachers.

Education has been benefited by computer technology in various levels. From both the sociological and economic point of view, computer technology has made an impact on teaching and learning (Arulsamy, sivakumar 2009). It is a need to understanding the needs of Persons with Disabilities is crucial in finding a suitable approach to promoting ICT accessibility

VI. SIGNIFICANCE OF ICT

ICT as a field of computer science has progressed to the point that some of its innovative methods are of practical use for information retrieval system design. ICT informs, educates, persuades and entertains with dazzling effects of colures, animation, and sound. Through its much possible application, some ideas are offered to help the user in focusing on the latest technological developers.

It offers learners more complete and individual control over their learning. Learners may set their own pace through the material and review material as many times as needed for understanding. It will provide a private non-judgmental learning environment to learners. It provides clear and well defined instructional objectives, through preparation of content and offers support for both learners and staff. Abstract concepts can be easily explained with the help for animation and graphic. It ensures self paced learning. More information will be gathered in a short duration of time. So energy and time will be saved. It is also useful for inclusive education. Since the users control the programme, they can learner their own pace, and there is no intervention of the instructor in their learning. Thus, it is more flexible and provides learner centred environment.

VII. CHALLENGES BEFORE ICT IN THE EDUCATION SYSTEM IN INDIA

The challenges of traditional education systems are amplified by the rapidly changing skills in demand in a globalizing labour market. Information and Communication Technology (ICT) has made rapid strides in the past couple of decades. New technologies are now available for information dissemination, enhancement of skills of all sorts, not yet suitably adapted to the needs of the education sector. The immense potential for inducting ICT to come to the aid of Indian education in myriad innovative ways has not been harnessed.

Concerns of reach and access to education continue to attract widespread attention of all segments of society. Following sustained initiatives spread over many decades, the country can today boast of perhaps one of the largest ever schooling systems. With increased throughput, and ever increasing numbers of students aspiring for higher education, concerns of equity in education and issues of quality have also begun to attract attention.

The challenge of developing alternate modes of education, continuing education, teacher capacity building, and information systems for efficient management of the school system are being addressed. With Information and Communication technologies becoming more accessible, reliable and mature, the prospect of leveraging ICT for education is becoming increasingly feasible. Information and Communication Technologies in Schools Information and Communication Technologies have enabled the convergence of a wide array of technology based and technology mediated resources for teaching learning.

It has therefore become possible to employ ICT as an omnibus support system for education. There are different types of challenges comes in front ICT in education system in various ways like infrastructure challenges, teacher related, technical challenges, financial challenges etc. The potential of ICT to respond to the various challenges the Indian education system poses are:

- ICT can be beneficially leveraged to disseminate information about and catalyze adaptation, adoption, translation and distribution of sparse educational resources distributed across various media and forms. This will help promote its widespread availability and extensive use.
- There is an urgent need to digitize and make available educational audio and video resources, which exist in different languages, media standards and formats.
- Given the scarcity of print resources as well as web content in Indian languages, ICT can be very gainfully employed for digitizing and disseminating existing print resources like books, documents, handouts, charts and posters, which have been used extensively in the school system, in order to enhance its reach and use.
- ICT can address teacher capacity building, ongoing teacher support and strengthen the school system's ability to manage and improve efficiencies, which have been difficult to address so far due to the size of the school system and the limited reach of conventional methods of training and support.
- Using computers and the Internet as mere information delivery devices grossly underutilizes its power and capabilities. There is an urgent need to develop and deploy a large variety of applications, software tools, media and interactive devices in order to promote creative, aesthetic, and analytical and problem solving abilities and sensitivities in students and teachers.

VIII. CONCLUSION

In the nutshell, this paper concludes the things which ICT has brought in educational planning in India. Also, how important it has become in today's life. Governments around the world are spending millions each year for information and communication technology in education systems. So the governments should make more effective planning's in the field of ICT. The potentials of ICT, most nations of the world have evolved national information and communication technology policies, to serve as a framework for ICT integration in all facets of the society. The national policy on telecommunication was a key step in the development of infrastructural base for ICT.

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