

REVIEW OF ICT POLICIES IN INDIA

***Dr. (Mrs.) Mahashevta**

Abstract

National policies have greater implications for promotion of equity, access, and sustainability in the arena of education. The government of India formulated the first National Policy on Education (NPE) in 1968. The NPE, 1968 focused on promoting national progress, a sense of common citizenship and culture, and on strengthening national integration. It gave importance to a radical reconstruction of the education system, to improve its quality at all stages, and gave special attention to science and technology, the cultivation of moral values and a closer relation between education and the life of the people. The Indian national educational policy of 1986, which was subsequently modified in 1992, stressed the need for using Educational Technology (ET) to improve access, quality and governance of education. Two Central government schemes have emerged out of these policies. They include ET and Computer Literacy and Studies in Schools (CLASS). These two important initiatives led in 2004 to another policy called information and communication technology (ICT) in schools. The ICT role in education continued to get the attention of the Government of India. National Curriculum Framework (2005) and Sarva Siksha Abhiyan (SSA) also recommended to create an environment for optimal utilisation of ICT in education. In continuation to this, many schemes and programmes have been introduced to effectively implement ICT in teaching and learning to increase the access at all levels of education. The present paper attempts to discuss ICT related policies formulated by the Central and State governments in India.

Key Words: Educational Technology (ET), ICT, National Policy

INTRODUCTION

“The most important and urgent reform needed in education is to transform it, to endeavour to relate it to the life, needs and aspirations of the people and thereby make it the powerful instrument of social, economic and cultural transformation necessary for the realization of the national goals. For this purpose, education should be developed so as to increase productivity, achieve social and national integration, accelerate the process of modernization and cultivate social, moral and spiritual values.”

University Education Commission (1948-49)

The fundamental role of education in nation-building, progress, security and social and economic development has been recognized from the outset in the Indian context. Prior to independence, Gandhiji had formulated a vision of basic education in India, seeking to harmonize intellectual and manual work. Afterward, the University Education Commission (Radhakrishnan Commission, 1948-49) and the Secondary Education Commission (1952-53), as well as other Commissions and Committees had dealt with the issues relating to educational reconstruction. It is implicit that policy defines the course of action to reach particular outcomes. Policies deal with multiple sectors for the development of nation and education is one among them. National policies have greater implications for promotion of equity, access, and sustainability in the arena of education. The Resolution on Scientific Policy (1958) emphasized the importance of science, technology and scientific research in education. The government of India formulated the first National Policy on Education (NPE) in 1968. The NPE 1968 focused on promoting national progress, a sense of common citizenship and culture, and on strengthening national integration. It gave importance to a radical reconstruction of the education system, to improve its quality at all stages, and gave special attention to science and technology, the cultivation of moral values and a closer relation between education and the life of the people. Afterwards, the NPE of 1986 as modified in 1992 reiterated the centrality of education for all as a national goal and sine qua non of all-round material and spiritual development, national cohesion and national self-reliance. The NPE 1986, as modified in 1992, stressed the need to employ educational technology to improve the quality of education led to two major centrally sponsored schemes, namely, Educational Technology (ET) and Computer Literacy and Studies in Schools (CLASS). By recognizing the importance of ICT (Interactive Classroom Technique) in education, Indian government introduced the Computer Literacy and Studies in Schools (CLASS) as a pilot project initially with the introduction of BBC micro-computers. Under this project, a total of 12,000 such computers were received and distributed to secondary and senior secondary schools through State governments. The project was subsequently adopted as a centrally-sponsored scheme during the 8th Plan (1993-98). The then Prime Minister constituted National IT Task Force in 1998 which made several recommendations for making available computers, internet and educational software to teachers and students of schools, colleges and polytechnics by the year 2003 and paved the way for a more comprehensive centrally sponsored scheme namely Information and Communication Technology in Schools

in 2004. During the last decade, thousands of computers have been installed in upper primary and secondary/higher secondary schools under various schemes of central and state governments. Some States have introduced computers as an optional subject in SSC Board examinations. Government of India also provides assistance to States for production of audio, video and multimedia programmes through State Institute of Education Technology (SIET) under the overall guidance and support of Central Institute of Education Technology.

National Curriculum Framework 2005 (NCF) has also highlighted the 'significant role' ICT can play in school education. It talked about the essential component related to establishment of 'smart schools' designed to become technology demonstrators. ICT use improvement in excellence also figures in Government of India's flagship programme on education, Sarva Shiksha Abhiyan (SSA). Again, Central Advisory Board of Education (CABE) in the norm of schooling figured ICT comprehensively, in its report on Universal Secondary Education, in 2005. The Information and Communication Technology (ICT) in Schools was launched in December, 2004 and revised in 2010 to give opportunities to secondary stage students to mainly construct their competence on ICT skills and make them learn through computer aided learning process. The scheme currently covers both Government and Government aided Secondary and Higher Secondary Schools. Financial assistance is provided for procurement of computers and peripherals, educational software, training of teachers, development of e-contents, Internet connectivity & set up of smart schools. So far, approximately 87033 government and government aided secondary and higher secondary schools have been approved for coverage under ICT in Schools Scheme.

The Scheme is a major catalyst to bridge the digital divide amongst students of various socio-economic and other geographical barriers. The Scheme provides support to States/UTs to set up computer labs on sustainable basis. The Information and Communication Technology (ICT) in schools have been subsumed in the Rashtriya Madhyamik Shiksha Abhiyan (RMSA). Rashtriya Madhyamik Shiksha Abhiyan (RMSA) will become the umbrella programme and ICT@Schools will be integrated with RMSA to provide greater flexibility, enable optimal utilisation of resources and yield better results. Now ICT in Schools is a element of the RMSA.

The thrust had been essentially on familiarizing the student with the use of computers, and teaching basic operations at secondary levels – the deployment of IT as an aid to education,

or as a management tool had not been conceived of or focused on. It has become imperative to take broad look at all possible information and communication technologies for improving school education in the country as the technologies are converging. Information and Communication Technologies is a broader term which includes all devices, tools, content, resources, forums, and services, digital and those that can be changed into or delivered through digital forms, which can be deployed for realizing the goals of teaching learning, enhancing right of entry to and reach of resources, building of capacities, as well as management of the educational system. Core components of ICT are hardware devices connected to computers, and software applications, interactive digital content, internet and other satellite communication devices, radio and television services, web based content repositories, interactive forums, learning management systems, and management information systems. ICT also includes processes for digitization, use and management of content, development and deployment of platforms and processes for capacity development, and creation of forums for interaction and exchange.

Information and Communication Technology (ICT) has made quick 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 various innovative ways has not been harnessed. Many experiments have taken place in the country, 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 implemented.

The National Policy of ICT for School Education defines ICT Literacy in terms of levels of competence. Student or teacher may progress to different levels on the basis of their introductory level of ICT. The levels are irrespective of specific classes (for eg, sixth or seventh standard) and competencies are organized into three broad levels, basic, intermediate and advanced. The time duration must count local factors, based on the strength of the school. The three levels of competencies are briefly described below.

Stage 1: Basic-

It deals with basics of computers and basic use of tools and techniques –to operate a computer, store, retrieve and manage data, use a computer to achieve basic word and data

processing tasks; connect, disconnect and troubleshoot basic storage, input and output devices connect to the internet, use e-mail and web surfing, use search engines, keep the computer modernized and secure, operate and manage content from external devices (sound recorders, digital cameras, scanners etc.); connect, disconnect, operate and troubleshoot digital devices.

Stage 2: Intermediate-

It is aimed at creating and managing content using a array of software applications and digital devices; using web sites and search engines to locate, retrieve and manage content, tools and resources; install, uninstall and troubleshoot uncomplicated software applications etc.

Stage 3: Advanced-

It deals with the use of different software applications to enhance one's own learning – database applications, analysis of data and problem solving, computing, design, graphical and audio-visual communication; undertake research and carry out projects using web resources; use ICT for documentation and presentation; create and participate in web based networks for cooperative and collaborative learning; become aware of issues of cyber security, copyright and safe use of ICT and take necessary steps to protect oneself and ICT resources.

As each stage is defined by the competencies, the time duration needed for each stage is subjective to local situation and frequency of access to the ICT facilities and may be shorten. Different parts of each stage can also run concurrently to make it ensure that every student completes to be achieved, the pace is the advanced stage before completing schooling. Thus, ICT Policy in School Education aims at preparing youth to participate creatively in the establishment, sustenance and growth of a knowledge society leading to global competitiveness and all round socio-economic development of the nation. The ICT Policy in School Education will encourage universal, equitable, open and free access to a state of the art ICT and ICT enabled tools and resources to all students and teachers. It will promote development of local and localized quality content and to enable students and teachers to be partner in the development and critical use of shared digital resources. It will promote the development of professional networks of teachers, resource persons and schools to catalyse and support resource sharing, up gradation, and continuing education of teachers; guidance, counseling and academic support to students; and resource sharing, management and

networking of school managers and administrators, resulting in improved efficiencies in the schooling process. Government and Government aided Secondary and Higher Secondary Schools has provision for instituting the National Award for innovative use of ICT to motivate the Teachers and Teacher Educators for innovative use of ICT in teaching-learning. Thus, an ICT literate community contributing to nation building can be developed by constructing an environment of collaboration, cooperation and sharing, creating a demand for optimal utilisation and optimum returns on the potentials of ICT in education.

The ICT literacy programme was implemented in all secondary schools in the states including government and private schools during the period of Eleventh Five Year Plan period. Under the programme states were to develop the curriculum for ICT literacy only with course materials according to the stages discussed above in order to achieve uniformity. These were to be in the form of self-instructional materials so as to enable the teachers and students to process them by themselves. This programme was expected to provide a set of generic skills along with conceptual knowledge. The boards of secondary education were to develop a scheme for evaluation. ICT was to be an additional subject, with separate listing of marks / grades with the award of a certificate of proficiency.

The ICT literacy programme was to be extended to the upper primary stage by the end of the twelfth Five year Plan. The states having appropriate qualifications were to be engaged in various schools. These teachers were to function as the ICT coordinators of the schools. As the necessary infrastructure will develop, qualified technical assistants were to be appointed. A curriculum framework for ICT in Education (CFICT) was to be developed at national level so as to provide the basis for states to develop their curriculum. Regarding the scope of ICT enabled teaching and learning process, it was to include a variety of techniques, tools, content and resources aiming at improving the quality and efficiency of the teaching-learning process -ranging from projecting media to support a lesson, to multimedia self learning modules, to stimulations to virtual learning environments, there are various options available to the teacher to utilize various modes ICT tools for effective pedagogy including digital resource creation. Thus, attempts were to be made to use ICT tools to transform usual classrooms into ICT-Enabled classrooms. All teachers having basic competency to handle these resources were to be encouraged to adopt ICT enabled practices in teaching-learning process. In order to serve this purpose appropriate software applications, digital content, tools and resources were to be made available. Teachers were to participate in selection and critical evaluation of

digital content and resources. They were to be encouraged to develop their own digital resources, sharing them with colleagues through the digital repositories. The schools equipped with EDUSAT terminals, DTH and other media devices relevant activities were to be planned and incorporated into the time schedule of the school. Initially teachers were to use computer lab for the purpose of teaching learning process and later on to develop more classrooms progressively by equipping them with appropriate ICTs so as to make way for ICT enabled classes. ICTs have helped in convergence of a wide range of technology based and technology mediated resources for the purpose of learning. Hence, ICT is the medium providing opportunities for collaboration, sharing and peer learning and constructing digital learning resources at the various levels in the educational system. The process can result into extensive use of digital learning resources in the educational system. This will provide critical requirements of an educational system, namely reducing isolation by way of connecting teachers, schools, teacher educators and creating digital resources on very large scale in different languages.

On the use of technology in education it is detailed in Twelfth Five Year Plan of MHRD that most of the secondary schools have limited availability of computer facilities. This constrains the students from acquiring ICT-related skills essential in the knowledge economy and limits teachers' ability to upgrade their subject-matter knowledge and students' ability to access essential learning materials. ICT can potentially make significant difference in improving quality in teaching learning. The National Policy of ICT in School Education envisions and provides for the development of a holistic framework of ICT support in the school system. Mission Mode Project (MMP) on School Education is now under the National e-Governance Plan (NeGP). This would enable comprehensive technology adoption at school level education. Particularly this would cover the following aspects of school education sector: 1. Developing ICT skills of all heads of schools, teachers, non-teaching staff and students; 2. Creating a repository of quality-assured digital contents in English, Hindi and regional languages in all subjects especially in science and mathematics; 3. Training and encouraging teachers to develop and use e-content; 4. Creating provisions for ICT in classrooms or portable facilities like a netbook/laptop/iPad and a projector with rechargeable battery, and implement ICT-integrated education; 5. Enabling provision of ICT-integrated examination and e-governance at the institutional and systemic level including setting up of education portal(s). The MMP also envisions comprehensive use of technology to ensure delivery of

services to students, teachers, autonomous institutions and partners on an 'anytime-anywhere' basis by leveraging the Common Service Centers (CSC) established up to the village level across the country. This along with the policy on ICT in School Education will enable a holistic and coordinated attempt to optimally use and influence technology to achieve quality and efficiency in all of the interventions under various schemes.

Importance of ICT in Higher Education is also equally emphasised in National Mission on Use of ICT in Higher Education. During the Twelfth Plan various initiatives of the Eleventh Plan would be carried forward with an objective to make these programmes more effective, efficient and sustainable. These include: Digital Infrastructure Initiatives: (i) upgrade connectivity for universities and colleges to 10GBPS and 1 GBPS, respectively; (ii) build computer labs in all institutions as required and increase availability of laptops and low-cost access devices for faculty and students; (iii) provide smart classrooms; (iv) set up classrooms with interactive video-conference facilities linking Meta-universities and affiliating universities; (v) set up 100 server farms for cloud computing. 2. Content Initiatives: (i) develop virtual labs, to promote creation of user-generated content; (ii) establish a single national-level consortium for propriety content; (iii) create open access content repositories including interoperable institutional repositories; (iv) create platforms to facilitate user-generated content and related networks; (v) create a single portal for access to all content; (vi) continue current initiatives of DTH channels to telecast digital educational videos. 3. Governance Initiatives: (i) rollout institutional Enterprise Resource Planning (ERP); (ii) computerise examination wings of all universities; (iii) provide robust online linkage of all affiliating universities with their affiliated colleges; (iv) create online data collection system; (v) library automation; (vi) automation of grants management. 4. Training and Capacity-Building Initiatives: (i) train faculty in instructional design content creation; (ii) implement massive capacity-building efforts for adopting technology-mediated pedagogy in classrooms.

The Government of India has launched several social and developmental initiatives such as Swachh Bharat Abhiyan, Digital India, Skill India, Make in India and Smart Cities. All these initiatives have major backward and forward linkages with the education sector which need to be taken into account in the new NPE. For example, the induction of ICT also underlines the vital need of providing electricity and connectivity, and making computer hardware, software and technical support available in every school, especially in rural areas. Similarly, Skill India and Make in India require the mainstreaming of vocational education, practical

knowledge, hands-on projects and courses oriented towards meeting the needs of industry and employment. Only a sound ICT policy can work for holistic development of education. Increasing tremendous potential of ICT for enhancing outreach and improving quality of education requires the inclusion of ICT Policy at all levels of Education. A national policy framework provides guidelines to assist the States in optimizing the use of ICT in education. ICT should be made an integral part of school education where it can be used as an interactive technology aid to teachers and students. The innovative teaching through interactive technology is a step taken by the government to incorporate interactive classroom technique in existing teaching scenario. In recent years the pairing of short throw projectors with interactive whiteboards facilitated the group interaction of classroom process. The interactivity of the blackboard to be merged with the content of the PC to form a powerful learning and teaching platform has come to existence. Teachers have to take initiative to use this ICT resource as a strategy. Unless teachers show a positive attitude towards using this interactive technology, they will find it difficult to use it as a teaching aid, or to guide students on its use, Teachers have to gradually become facilitators of ICT and encourage self-learning by students. In this way, ICT can no longer be treated as a school subject; it has to become a way of learning process.

Fortunately, India is at the verge of major transformation. Due to steps taken over the last few decades, the disparities between urban and rural India in terms of infrastructure and facilities have reduced. Even more appreciably, Digital India is being rolled out, and could be soon a reality- every village panchayat will be digitally connected and the phenomenon of 'remote' schools will shrink rapidly. This is a supreme opportunity which needs to be fully harnessed. ICT field is to be explored seriously and rolled out, in an appropriate manner, synchronizing with the Digital India Programme. Such a judicious use of Information Communication Technology (ICT) will yield major dividends in a relatively short time and can greatly benefit the education sector, both school and higher education.

REFERENCES:

- Report on *A Model Curriculum for ICT in Education (2012)* Retrieved from http://mhrd.gov.in/sites/upload_files/mhrd/files/upload_document/ICT_curricula_Oct_2012.pdf

- Bajwa S. B., (2003) *ICT Policy in India in the Era of Liberalisation: Its Impact and Consequences GBER* Vol. 3 No.2. pp 49 – 61 ISSN 1474-6824 (Online) ISSN 1474-6832 (Print)
- Report on *Core Scope Document for School Education MMP National Institute for Smart Government* (n.d.) Retrieved from website <http://mhrd.gov.in/>
- Report on *National Policy on Information and Communication Technology (ICT) In School Education* (2012) Retrieved from website mhrd.gov.in/
- Rao J., Prabhakar and Prasad, R. Siva., (2016) *Educational Technology Policies in India and Access* Retrieved from website oasis.col.org/bitstream/handle/11599/2569
- Report on *The National Policy on Information and Communication Technology (ICT) in School Education* (n.d.) Retrieved from website <http://shodhganga.inflibnet.ac.in/>
- Report on *Twelfth Five Year Plan(2012–2017) Social Sectors Volume3* (2013) Retrieved from website <http://mhrd.gov.in/>