Educational Technology Policies in India and Access

Dr. J. Prabhakar Rao
University of Hyderabad
jandhyalap1@gmail.com
and
Dr. R. Siva Prasad
University of Hyderabad
sivaprasad53@uohyd.ac.in

ABSTRACT:

It is usually understood that policy defines the course of action to attain particular outcomes. Policy outcomes, in turn, are mediated by institutions. Policies deal with multiple arenas and education is one among them. There have been a number of policies that have brought in many changes in the systems of education management, including curricula and use of technology.

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. In 2005 two policies were framed: 1) National Curriculum Framework and 2) Sarva Siksha Abhiyan (SSA) for universal secondary education. The main objective of all these policies is to create an environment for optimal utilisation of ICT in education. In continuation to this, there have been quite a few changes introduced to effectively implement enhanced technology in teaching and learning to increase the access at all levels of education.

The present paper focuses on the analysis of educational technology related policies formulated by the Central and State governments in India. It also deals with the strategies and institutional mechanisms that are available to effectively implement these policies. This would contribute to reflecting and modifying the existing educational policies to address the current needs. This has greater implications for promotion of equity, access, and sustainability in the arena of education

Key Words: Education, Policy, Technology, ICT, Outcomes, Utilisation, Computer Literacy

Introduction:

Reforms in the field of education have been warranted on a continual basis as the changing needs of the nation states and its population required new avenues of thinking and increasing access of the population to the means of education. This can only be done through reforms in educational policy that can address the educational needs of the larger population. It is also important to increase the skill bases of the population in order to make them eligible for not only employability but even to start their own ventures. In a way, the policies have to be vibrant to meet the challenges and larger needs as well as requirements of the diverse population of a nation. Put differently, the policies will have to cater to the growing needs of a population and should respond to the demands of social development in a competing world. Policy process will have to involve all stakeholders. The policy should also focus on and match with the deliverables, increase in expenditure in infrastructure, technological and other resources, new ways of increasing access to education by lowering costs, and wider reach of the population to education and skill development. Therefore, the education technology policy needs to focus on a wide range of issues dealing with quality, access, equity, affordability, issues of delivery, etc.

This paper in Section I discusses budgetary expenditure in order to understand the efforts of the governments to match the policy intent with budgetary allocations and what need to be done. Under Section II, we will be discussing the changes in educational policy that were brought about over the years in order to understand the concurrent changes in pedagogy, infrastructure and teacher training at different levels. This also discusses different policy regimes dealing with OERs, licencing, copyright, etc. Section III attempts to assess the policy outcomes and come out with practical suggestions to improve and accelerate the processes dealing with the use of enhanced technology in education.

Budgetary Expenditures

In order to look into and identify the problems of existing status of educational infrastructure, we need to look into public investments in education. This will provide us the gap between the need and the reality, and the gap between access and reach. Education being in the Concurrent list we need to look into the public investment over years, by both the States and Centre. Many of the efforts and changes in the policy were introduced following Yash Pal Committee of 1993 that reported 'Learning without Burden'. These are visible in the public expenditure patterns in education and for an overview, our study has taken into consideration the budgetary expenditures from the year 1999-2000 to 2012-2013. While there is a considerable increase in the States' expenditure, the percentage of into the GDP is somewhat fluctuating, in fact, it has declined over the years. In the case of Centre, both budgetary expenditure and percentage of expenditure to GDP have been consistently increasing (Table 1). This indicates that while increasing the budgetary allocations, the States need to match the budgetary expenditure to education in relation to GDP with a cumulative increase over years, as is the case with the Centre.

Table 1: Public Expenditure in Education over Years (Rs. In thousands

Year	States	%of GDP	Centre	% of GDP	States + Centre	% of GDP
1999-2000	53948.84	2.92	7332.62	0.40	61281.46	3.32
2004-2005	68169.62	2.29	13111.23	0.44	81280.85	2.73
2009-2010	118386.73	2.23	34435.67	0.65	152822.4	2.88
2012-2013	249810.14	2.66	74039.84	0.79	323849.98	3.45

Source: National Accounts Statistics, 2013, CSO.

With the recent increasing efforts of the Government of India to take forward the economic and educational reforms, it is hoped that there will be a substantial improvement in the budgetary allocation of the States and Centre in education. There are efforts now to have a new education policy in place in order to expand the access to quality education and to strengthen the infrastructure necessary in this expansion of education at all levels. These efforts are intended to fill the gap between the need and reality. In a way, the efforts are to enhance both the technical and human resources required to take a leap forward in increasing the access, quality and governance of education.

It is important to note that in India radio was used in schools in the early 1950s to add-on to the regular curriculum. Also, television was used right from 1959 when it was introduced in the country under the Satellite Instructional Television Experiment (SITE) to impart primary education on an experimental basis in six states. Through the launching of Indian National Satellite (INSAT) in 1980, the government continued the efforts of SITE (http://www.teindia.nic.in/mhrd/50yrsedu/g/52/4J/524J0D01.htm). In mid-1960s Correspondence Courses were started in secondary and higher secondary levels. The same were extended to the degree level later. 'Open School' was started to help school dropout in 1979 in Delhi and this was upgraded to 'National Open School' in 1989.

In India, since the mid-1970s there were efforts to introduce technology, like the slides, projectors, radio and TV, in education both under conventional as well as in distance learning. Centres for distance education were started in the State Universities during this period in order to provide access to the learners outside the institutional learning. These efforts were coupled with some changes in the needed qualifications to take advantage of distance learning. However, during 1980s exclusive Universities for Distance Learning under 'Open Universities' were established by both the Central and State Governments. In 1982 the first Open University (Andhra Pradesh Open University) was started and in 1985 Indira Gandhi National Open University (IGNOU) was established with the aim of giving equal access to all with lifelong learning. All the Open Universities and Centres of Distance Education being run by the Universities were all brought under IGNOU as a Central Organisation to guide regulate distance mode of education. A wide range of courses is offered through these open Universities.

Table 2: Public Expenditure on University and HE Vs Distance Learning (Rs. in thousands)

Year	University and HE			Distance Learning		
	Plan	Non-Plan	Total	Plan	Non-Plan	Total
2010-2011	44731856 (52.86)*	39898100 (47.14)	84629956 (100)	5531724 (100)	0	5531724 (100)
2011-2012	59520000 (56.96)	44976100 (43.04)	104496100 (100)	9500000 (99.89)	10000 (0.11)	9510000
2012-2013	72928000 (50.58)	71268500 (49.42)	144196500 (100)	9550000 (99.90)	10000 (0.10)	9560000

Source: National Accounts Statistics, 2013, CSO.
* Parentheses indicate the percentages.

The above table indicates that in the case of University and HE, while there is an increase in Plan expenditure in 2011-2012 and in the following year, i.e., 2012-2013, there is a substantial decline. This decline in Plan expenditure is compensated with an increase in non-Plan expenditure during the same period. It is significant to note that while there was no allocation for non-Plan expenditure in distance learning in 2010-2011, in the subsequent years a very marginal allocation was made under non-Plan expenditure. In a way, there is a substantial difference between the two, i.e., the University and HE, and Distance Learning (Table 2).

As mentioned above, there is an increased effort by the State and Central governments to alter the way in which education is carried out in a conventional manner by introduction of technology into education to enhance its access and quality. The Central Government through MHRD initiated several steps, including MOOCs Policy and new Educational Policy. These measures have propelled an increasing investment both by the public and private initiatives in developing infrastructural facilities in a competitive manner to achieve the objectives and goals of implementing the enhanced technology. As part of this, the Universities and institutions have been actively engaged in setting up e-learning centres and framing up OER policies considering the internal strengths and resources of each institution in line with MHRD policy in this regard.

Changes in Education Policy

Immediately after independence, Government of India established University Education Commission (1948-1949) and Secondary Education Commission (1952-1953) to modernise India's education system. Institutes of Technology were started and in 1961 National Council of Educational Research and Training was started as an autonomous institution to advise the Central and State governments on the formulation and implementing educational policies. During the 1960s the main emphasis was to get the Indian masses educated to develop the country and to achieve equality among all the sections of the society. During this period, traditional methods of learning were given importance, and there were efforts to introduce radio and television in expanding the base of imparting education to the wider population. One of the goals of education was to achieve national integration and imbibe notions of democracy, secularism, equality, etc. National Policy of Education (NPE) of 1986 envisaged free and compulsory education up to 14 years, improve the quality of the teachers through training and offering better emoluments. The emphasis of the NPE was equalisation of educational opportunities, recognition of talent, widening technological and science education and research, linking it with industry. It expanded scholarships for the deprived sections, emphasised on adult education to remove illiteracy, vocationalising secondary education, recruitment of more teachers from the SCs and STs, training and retraining of rural youth for wage and self-employment, incentives to poor families to send their children to school regularly, development of new institutions, etc. It emphasised on child-cantered approach' in child education and started 'Operation Blackboard' to improve primary schools in the country. Besides emphasising on expanding the Open University system in the country, it also called for the creation of 'rural University' model based on the philosophy of Mahatma Gandhi, father of the nation, to promote economic and social development in rural India. In 1992 the NPE of 1986 was modified in order to streamline, promote and maintain professional standards. As part of this, it introduced common entrance examination on an all-India basis for professional and technical education to lessen the physical, mental and financial burden of students and parents due to the multiplicity of examinations. It also emphasised on transforming teaching methods through the introduction of 'audio-visual aids and electronic equipment' in higher education. Organisation of computer literacy programmes right from the school stage was also emphasised in this policy. The emphasis was on the introduction of new technology is to improve access, quality and governance of higher education, and distance learning programmes. Many Central government programmes like the Computer Literacy and Studies in Schools (CLASS), adoption of information and communication technology (ICT) in schools were evolved as a part of the educational policy. The Central government in 2005 evolved two policies to address 1) National Curriculum Framework, and 2) Sarva Siksha Abhiyan (SSA) for universal secondary education.

Right to Education (RTE) Act, 2009 came into operation in 2010 that ensures free and compulsory education to the children between 6 and 14 years as a fundamental right under Article 21A of the Constitution of India. All these only emphasise on the attempts of the Government of India to ensure equity in access and quality education to improve the conditions of the poor and deprived, including the lot of minorities. This Act specified the duties and responsibility of the governments (Central and State in sharing financial and other responsibilities), local authorities, and parents in providing free and compulsory education to children. It also clearly laid out the pupil-teacher ratio (PTR) for each school, the school and teacher working days, and buildings and infrastructure. It also states that appropriately qualified and trained teachers to be appointed and they should not be entrusted with non-educational related tasks. The Act specifically prohibits physical punishment and mental harassment, screening procedures for students' admission, capitation fee, private tuition by teachers, etc. Its basic aim is to evolve a child-friendly and child-centred education that can ensure a child's all-round development by working on the knowledge, potential, and talent of the child. This is envisaged to enable a child to learn in an environment free from fear, trauma, and anxiety. In this regard, educational technology (ET) is expected to play an important role right from elementary level to higher education.

Since 2000, the emphasis was on modernisation, upscaling curricula, digitalising and networking of libraries of institutes of higher learning, strengthening research and development, and internationalizing higher education through national and international collaborations. In order to train and upgrade the skills of college and University teachers, Academic Staff Colleges (now called as Human Resource Development Centres) were started. These centres have been attempting to promote the use of technology in college and University teaching. These centres also have been imparting training in new pedagogies, student-centric learning, and teaching, methods of evaluation and assessments, etc.

In continuation of the earlier policies, the Government of India has initiated discussions on evolving an Education Policy in light of the changing educational scenario globally to cater to the socio-cultural and educational needs of the vast majority of the populace. In order to provide access to most of the people, Government of India has recently formulated MOOCs guidelines for developing and implementing OERs. While the general guidelines are provided by the government, there is a need to frame OER policies by every institution of higher learning keeping in view infrastructure and human resource. We need to differentiate between the institutions that have centres for distance learning and those who do not have in order to orient the MOOCs policy. For example, the MOOCs policy envisages that the online courses developed under the policy will be kept on the national portal SWAYAM, where learners can have free access to the educational materials. But, a minimum fee will be charged for assessment, evaluation, and certification. If the online materials will be developed by the Centres for Distance Education of the University, the University retains the copyright and the courses will be offered on payment of a fee. There is a variation to this when some of the regular courses of the University are made online providing free access to the enrolled students.

This new policy has opened up opportunities for the Universities to enter into collaborations with national and international educational institutions, industry and NGOs engaged in the development sector. This also has widened the scope of imparting knowledge as well as skill based courses. This is in line with the Government of India policy with regard to Make in India and Skill Development. In such cases, the development of course material, as well as its implementation, depends on the agreements reached between the stakeholders.

In order to effectively implement the MOOCs policy, Government of India provides support for infrastructure development. As a part of Digital India Policy, public institutions are expected to implement e-governance at the administrative level and e-technology in pedagogy. All these policy initiatives will facilitate to narrow the gap of the digital divide as well providing access to education on a massive scale. This will also enable people to become entrepreneurs, and self-employed through acquiring skills. To support persons in this regard, start-up assistance is being provided through programmes of incubation. Several programmes are being simultaneously launched to realise the objectives and goals set for the policies that are interlinked with the skills and knowledge development.

Policy Outcomes and Implications

As noted earlier, the investments made by the Government of India and also by the private sector in higher education have enhanced substantially not only infrastructure but also coverage by way of increased number of higher education institutions and colleges in different states of the country. This has considerably increased the access to higher education to different populace. Added to this, the Government of India as well as the State Governments have introduced number of scholarships and allocated a certain proportion of seats to different deprived sections, including the minorities and women. Despite these efforts, there is still a lot is needed to be done to address the educational needs of the people.

What is significantly emerging today is the role of ET in all levels of education to enable everyone to be a lifelong learner to upgrade one's knowledge and skills. It would also enable one to be a more thinking person than a mechanical-learner by rote. The ET would dynamically alter the process of teaching and learning by challenging the hierarchical relationship between the teacher and the taught; changes the methods and pace of learning thereby democratising the process of learning; and increases the access to quality education at much lower costs by ensuring equity. ET is a medium to deliver and also a way to enhance the quality and level of learning by making learning enjoyable.

The Government of India right from independence has been making efforts to change the pace and path of educating the Indian population at large, especially the poor and the underprivileged. It had tried to introduce right from the mid-1960s and 1970s both radio and television into primary and secondary education as well as village education through SITE and later through INSAT. These were coordinated through the Centre for Educational Technology (CET) of the Ministry of Education and Development and Educational Communication Unit (DESU) of the Space Application Centre (SAC), Ahmedabad. CET launched a successful multimedia programme for in-service teacher training during the mid-1970s (NCERT, 2006). There are quite a few successful experiments that are worth emulating. The Khan Academy is a successful effort involving private initiative.

Conclusion:

What is stated in the Position Paper of NCERT in 2006 still holds good and is more appropriate today. According to it, 'Alternative models of education such as distance and open-learning, on-demand education, and other such flexible models of learning, will have to be tried and tested. Flexible systems, futuristic curricula, and a twenty-first-century career orientation have become a necessity for today's young people. There is an urgent need to convince the educational system, which should play an important role in engineering the teaching-learning situation and to make it a more meaningful experience for both teachers and their pupils' (p. ix).

ET offers an opportunity as well as a challenge. It opens new vistas of learning media and also offers the opportunity to visualise and think through the innovative way to use technology for a better delivery of educational contents to the learners. One can open different channels of communication between the teacher and learner such as discussion boards, social media, blogs, etc. In order to reach the learners even in faraway places, mobile technologies can also be utilised. What we gain from our broader analysis of the ET and educational policies over the years is the power of ET in revolutionising the system and power of education. It also indicates to us how technology can help us in bridging the gap between the demand and supply in different levels of education. What is needed today is to review the impediments in implementing ET in the delivery of education to the learners, and how to remove the gatekeepers impeding the process. Investigation and a better appreciation of educational policies require a comparative analysis of the other policies related to social and economic development. This will provide us opportunities to review the strategies and institutional mechanisms for effectively implementing the policies. This would actually assist us to reflect on the performance of policies in addressing the current needs of stakeholders. The success of a well thought out policy has greater implication for the promotion of equity, access, and sustainability in the educational arena.

References:

Retrieved from http://www.teindia.nic.in/mhrd/50yrsedu/g/52/4J/524J0D01.htm. Accessed on September 03, 2016.

NCERT. 2006. *Position Paper: National Focus Group on Educational Technology*. Retrieved from http://epathshala.nic.in/wp-content/doc/NCF/Pdf/educational_technology.pdf. Accessed on August 26, 2016.