Consultation on 'National Policy on ICTs in School Education'

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WORKSHOP REPORT

Organised by
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Digantar
Educational Resource Unit
Eklavya
IT for Change
Quest Alliance
SRF Foundation
Vidya Bhawan Society
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Workshop Report

The 2-day Consultation held on the 'National Policy on ICTs in School Education' (NPISE) centred on the Indian education context, critical challenges faced, and how ICTs could be adapted to meet education goals. The Consultation aimed to generate a set of policy directives based on educational perspectives and policies, as an input into the NPISE being formulated by the Ministry of Human Resource Development (MHRD).

ICTs within the current educational system context

The first two sessions of the Consultation discussed critical challenges in the education system and learnings from experiences and policies in this area to provide an overall context to the discussions.

In his opening remarks, Professor Krishna Kumar (Director of NCERT) suggested that ICTs being a fast growing and important sector, ought to form an important consideration within the National Curriculum Framework (NCF), a guiding principle for curricular design in India. Institutions are shaped by technologies and administrators need policy for every aspect, hence a policy for ICTs in education is indeed required. Such a policy can guide decisions on issues such as *"Computers to be used for classes above specified grades, or that DIET students (future teachers) must first have computers and learn how to use ICTs in their work, before any large scale deployment for students in schools"*. An ICT in school education policy needs to be consistent with the broader education policy, including the National Policy on Education (NPE) and the NCF 2005.

The public education system has tended to look at technology as a magic wand and failed to use it for systemic reform and consequently, investments in technology have merely resulted in graveyards of wasted infrastructure due to lack of adequate supporting processes. Professor Kumar urged educationists to take a contemplative, long-term and systemic view regarding ICTs appropriation in education.

There is an excessive focus on the 'end-point' (in our case, the school) in any reform process, neglecting the 'mid-points' (teacher education and teacher education institutions), this results in directly seeking to use computers in schools without putting effort for their use in teacher education and education administration. Teachers historically have not little voice in shaping education policy and the subservience of the teacher is reflected the non-conducive environments in classrooms resulting in child dropout rates as well as largest number of suicides amongst Indian high school students in the world. Teacher and teacher education is the weakest section of the education system and the policy should prioritise use of ICTs in CTEs, DIETs, IASEs and the 6000-odd teacher education institutions.

Likewise, new ICTs can be an opportunity to discuss and redefine the mystical word of 'content' and bring this within the existing discourse relating to learning resources within education. **He highlighted that the increased funding available in India for investment into the education sector was an opportunity, and suggested the participants should aim to reduce rhetoric surrounding ICTs and engage with ground level issues that have potential to generate real outcomes for policy**.

Mr. Rohit Dhankar (Digantar) began by asking whether an ICT in Education policy was an ICT policy or an education policy? The former would aim to push use of computers in schools to spread ICT literacy, while the latter would try to use ICTs to fulfill education goals. He listed the major challenges faced by the Indian public education system, ranging from providing equal educational opportunities to all, answering the fundamental pedagogical question of how education can give meaning to life, as well as revitalising government school systems. The education system is already stratified with different sections of society accessing schools with varying levels of investment and resource support, and feared that privatisation and use of ICTs could further this divide. He therefore suggested that appropriating ICTs to address these challenges will require nuancing the scope and potential contribution of ICTs. Mr. Dhankar focussed on the need to have clarity in the distinctions between computer literacy, computers as a vocational skill, and the use of computers as a tool for pedagogically rooted learning, and suggested that the NPISE should focus on the latter two, rather than the first. There is a need to align the use of computers with the education perspectives discussed in the NCF, merely pushing existing practices can result in greater harm (such as using computers as a 'drill sergeant' to promote rote learning). **This requires an in depth understanding of education philosophies by those attempting to use ICTs in education.** He also advocated for a policy focus on generating conclusive literature on the role of computers in education through research.

A call for foregrounding of the NPISE within the key challenges of education was made by Dr. Padma Sarangapani (Tata Institute of Social Sciences), who stressed on teacher professional development, curriculum, and classroom processes as the core areas through which policy could serve educational aims. She also argued for the distinction between the technology that enters the classroom, and the technology that remains in the support arenas of teacher education and education administration, the former needing to be proceeded with greater caution since education processes by nature are slow and intensive and hence 'quick fixes' can be problematic especially when they are centralised. Mostly, the spokespersons for using computers in schools come from business and technology backgrounds, but this group is naive about education, and governed more by technocratic rationalities, which treat the child and the teacher as objects for passive receival of technology.

The discussions that followed highlighted key substantive considerations for NPISE drafting, juxtaposing the broader perspective on Educational Technology, as defined in the NCF position paper, against a narrower reading of ICTs as only computers. Since education aims to shape and reshape society, the manner in which we determine the role of ICTs is imperative, and the positioning of ICTs only as tools cannot abstract away the systemic change opportunities they present. Participants noted that the engagement of educationists with techno-social systems and models was missing, and the NPISE presented an opportunity for educationists to influence how technologies could get shaped in the education system for progressive goals of education.

Experiences and insights from use of ICTs in education

The second session discussed experiences and insights from use of ICTs in school Education in India and elsewhere, and relevance to NPISE

Dr. Utpal Mallick (NCERT) referred to empirical research on ICTs in education from other developing countries, indicating an absence of adequate engagement with best practices and

programmes. This has restricted policy to rhetoric and limited implementation to infrastrucure creation. The rhetoric of 'content' is often an excuse to retrench existing practices into the classroom and needs to be debunked; ICTs need to be used as tools to promote problem solving, rather than as pre-packaged content. In many cases, projects are analysed by people who sell the applications, hence a problem of biased views results. Policy should support creation and maintenance of a database of best practices of use of technology, which are assessed for realism. He suggested that good sources for insights from current experiences include SITES, Becta UK, UNESCO Bangkok study and InfoDev. Different countries had divergent policies (e.g. Malaysia wants each classroom to have a computer while Japan has prohibited computers in primary schools) and India would need to let local context drive adaptation, rather than blindly ape 'global practices'

Ms. Zakiya Kurrien (Centre for Learning Resources: CLR) and Mr. Sajan Venniyoor (Prasar Bharati) reflected on their respective engagements with the programming and policy aspects of radio technologies and relevance for school education. CLR explored radio not just a tool for improved access, but to improve teaching-learning process and achieving curricular objectives. The interactive radio programme (IRI) started for rural and urban school children assumes the classroom teacher as integral to pedagogy, provides concurrent teacher development through radio lessons, while allowing for equitable and cost-effective access. The class room and radio teacher worked as partners and teacher education was happening in a subtle manner. IRI can be useful in areas such as second language learning. Radio has potential for equity, since a fine piece of curriculum would have a far reach and cover not only the urban school but also the rural remote school. She stressed on need for critical pedagogy; ICT literacy was not adequate, we need to interpret words and deconstruct images since they are loaded with values and meanings.

The community radio policy in the country presents an opportunity for improving access to radio waves, but Mr. Venniyoor pointed out that other than a few exceptions, core programming for education continues to be bureaucratised and centralised. Building on the positive CLR experience, he advocated separating the purposes of community and campus radio in the CR policy, and potentially reflecting these concepts in the NPISE as well, while encouraging the deregulation of rural spectrum and allocation of funds for rural telecommunications investment. He stressed on the enormous potential for decentralised radio in educational institutions and the need to exploit the 'public' nature of spectrum for common good rather than only private profit.

Subsequent discussions stressed on the decentralisation potential of ICTs. The potential of digital publishing changes enables teachers to create resources and enable the local curricular possibilities discussed in NCF, and policy should build in component for this. While centralised approaches can be problematic, e.g. Edusat video conferencing reproduces the same poor quality training and material as classroom training. Changes required are more fundamental than merely in technology. It was mentioned that recent policy document of Kerala must be considered, which stressed local knowledge, local language, free software, and community involvement aspects.

The subsequent sessions centred on specific education themes of teacher education, elementary and secondary education and education administration, and sought to move toward a shared understanding of how ICTs can address the critical challenges faced by the education system, focussing on:
a) possibilities for appropriation of ICTs towards educational goals
b) limitations and challenges in this and how to address these
c) broad considerations for design of policy and programme.

Appropriating ICTs for teacher education

This session highlighted key issues in the structures and processes of teacher education, and presented entry points for appropriating ICTs for systemic change. Dr. Poonam Batra (University of Delhi) argued that teacher education in the country continues to be insular at the training level and intellectually lacking, resulting in teachers who do not actively seek learning and professional growth. In this landscape, ICTs can enable re-establishment of connections between teachers and their roles. She asserted however, that mere technological fluency cannot make teachers co-constructors of knowledge - the power of ICTs lies in taking knowledge bases and potentialities for engagement directly to the teachers, to connect them to the community and reduce their isolation. Teachers teach as they are taught. Hence teacher training needs to be constructivist itself. Teachers need access to multiple sources of information to enable critical engagement, and this is possible through use of ICTs in aspects/areas such as creating communities and networks of practice, knowledge resource centres, distance education, standards creation, and improvements in communication through portals and digitised resources.

The open discussions were insightful, resulting in a shared understanding that teachers' roles could be impacted through the introduction of ICTs, and hence the imperative for educationists to steer the course of this change to promote teacher autonomy and development. A note of caution was issued against viewing ICTs as an alternative to problems of human systems, where, rather than working towards developing better teacher educators and spending time on developing possibilities of human interaction through ICTs, they get relegated for closed directives and trivial solutions at the level of teacher development. ICTs are the means for achieving education goals and not an end in itself.

On the other hand, participants alluded to the role ICTs can play in connecting teachers including to increase their participation in actual process of curriculum development and policy drafting as well. ICTs also have a role to play in state education institutions for facilitating ongoing teacher development plans. Their possible role in self assessment and self critique as a part of inservice teacher training needs to be explored.

Aspects that policy should promote include teacher to teacher communication as a way of learning. ICTs should enable teacher education in a better manner, in relinking society and school, it should take knowledge of frontier disciplines to teachers, create communities of practice, link teachers to society. ICTs can support both homogenous as well as heterogeneous communities of teachers and learners. Video record lessons of good texts could be made available to large number of teachers to discuss (and not wait for teachers to come to cluster). Radio is a very crucial tool a structured space during the day for exchange of ideas questions (even across the states using interpreters). Handycams at a cluster level for teachers and students to create local video programmes and support community video could be useful. Viewing and discussing inspiring films made on education is very useful.

Dr. Sarangpani explained the use of ICTs in the District Quality Education project in Chamrajanagar (Karnataka), where teachers were allowed free access to audio visual materials, printer, and the Internet, which they enjoyed using. Policy makers need to be persuaded that signifcant investment in mid-points (teacher education) is critical.

The current policy concern seems to restrict itself to 'education delivery' which is problematic. Teacher should have the legitimate space for active participation but is being reduced to an object of reform by which ICTs becomes another burden for the teacher and the school. There was also the warning that ICTs can further disempower the teacher, software can reduce the role of teacher to button pushing only. Hence ICTs in school education need to be understood within the larger context of the education system, including basic issues such as para teachers (technology as substitute for teachers) etc.

Appropriating ICTs for elementary education

A key point of debate in this session centred on the validity of using ICTs, especially computers, at the elementary schooling level. Children have better capabilities to sift through information and learn in secondary education, which a child's interpersonal and social skills need to be developed at the elementary level which requires privileging physical over virtual interactions. Participants emphasised that research in psychology and age of the learner is needed before any large-scale deployments of ICTs, and this is an important consideration to be factored in for the NPISE. Specific instances of ICT use in elementary education were discussed in this light, and enabled the visualisation of significant scenarios for the NPISE.

Mr. Stalin K. (Dhristi) and Ms. Deepika Singh (Udaan) reflected on their experiences with the Videoshala, an endeavour to apply the model of community videos for improving the quality of elementary education. The democratic nature of ICTs can enable contextual, decentralised and locally interpreted community created content. The objectives include subverting the hegemony of content creation, allowing for student-centric institutional strategies, creation and sharing content that inspires democratic values and an active citizenry. Rather than negating the role of the teacher, the AV medium can be appropriated to enhance the facilitative and guiding capacities, while providing a space for children to begin to experience creation of knowledge. Through Videoshala, they highlighted the potentialities of ICTs for strengthening school-community relationships and mutual support structures, which enables greater community ownership over education. Integrating these potentialities into the mainstream schooling systems was an area highlighted for further exploration and analysis.

Drawing from the extensive experiences of the Computer Aided Learning Programme (CALP), Mr. Dileep Ranjekar (Azim Premji Foundation) suggested that technology is being used across the country in schools often in an unplanned and *ad hoc* manner. ICT-based content creation is centralised, and often businesses are keen on pushing content on schools without understanding ground realities. The process of creating education content in an *ad hoc* manner that does not help education goals is a problem and so is the gap between educationists and technologists. The process of implementing technology is critical – policy should have the required guidelines for this. All work needs research – kind of technologies, usage, creation processes, planning should form part of policy. Pilot projects must start small to provide learning before any scaling is planned.

Participants suggested that ICTs should be used to supplement and enrich the learning process, not substitute traditional modes of teaching and learning. The issue of security was discussed – we can not let children loose on the Internet without appropriate scaffolding/protection.

Dr. S.C. Behar concluded the session by pointing out that the elementary education system currently in place is colonial, but can be modified to develop a pluralistic and accountable system through the

engagement with ICTs. The huge investments into computerisation of education system that are currently underway are often in contrast to this ideal, and the NPISE document should outline the vision for education in using ICTs before implementing specific programmes.

Appropriating ICTs for secondary education

In contrast to the discussions on ICTs in elementary education, there was a greater shared understanding that ICTs are potentially more appropriate for use at the secondary level. However, here too debate centred on giving precedence to real world experiences, rather than relying instead on virtual realities constructed by digital experiences, that may undermine the value of cognitive development through physical experiences. It was recognised that the educationists response to ICTs have thus far been largely reactive, avoiding active framework building. Participants stressed that at the secondary level, the fundamental approach to ICTs would have to be experiential, collaborative and integrated, rather than following a "*seductive augmentation"* of pre-existing content and curriculum with multimedia content and applications.

This session highlighted issues that undermine the goals of secondary education, offering possible scenarios for systemic improvements through ICTs. Ms. Shuchi Grover (Independent Education Technologist) pointed to the dual problems of rigid examination systems coupled with centrally defined curriculum, which need to be addressed first at the secondary level. Concept mapping, generating spatial and temporal imagery, digital documentation and sharing, are some of the constructivist possibilities available for secondary classrooms. Programming can enable an algorithmic way of thinking, and the Internet, when adequately regulated and mediated can support learning processes, while supporting multiple intelligences and constructionism. Manas Chakrabarti (Independent Educationist) discussed several examples for applying ICTs in secondary education, applying the NCF framework, leveraging its versatility as a learning tool, in areas including modelling, programming, communicating, publishing, spaces for articulation etc. However the whole idea of ICTs in secondary schools has been actively promoted by hardware, software and e-Learning companies. As a result, there has been little evaluation, especially at the secondary level, of the effectiveness of having computers in school. Unfortunately, human learning is more complex than replacing poorly produced textbooks with bright, attractive screens of information. The biggest weakness, and perhaps the hardest to change, is the "information access" model of education that most ICT-in-school programmes use today.

Leading from the reflections on context and potentialities of ICTs, the open discussion resulted in several pointers for policy in the secondary education theme. Inclusion of ICTs in curriculum should not be limited to the utilitarian literacy component, but engaged with for interpretation and adaptation potentialities. ICT literacy is only a starting point to enable students to access multiple information resources, co-construct knowledge resources, and build communities of learning. Mr. Rajaram Sharma (NCERT) highlighted the different categories of students at the secondary education level – those within the formal schooling system, dropouts, 'failures', and vocational students - all of whom should be considered for ICT policy interventions. Dr. Vinod Raina (Bharat Gyan Vigyan Samithi) reiterated the principles mooted in earlier sessions that policy making in this area must necessarily reflect pedagogical as well as constitutional principles.

Appropriating ICTs for education administration

This session reflected on existing initiatives and possibilities on using ICTs for educational administration. Mr. T.M.Vijay Bhaskar (Secretary, Primary and Secondary Education, Government of Karnataka) spoke about the use of ICTs for educational administration and also about administering programmes for ICTs in school education in Karnataka. He explained how ICT use in educational administration improved efficiency and responsiveness and released time from routine administrative tasks to core educational concerns of access, attendance and learning levels. E.g. that earlier Block Education Officers (BEO) had to spend a lot of time on signing and preparing salary slips and now with the state wide Human Resource management system, salaries were despatched through the central system, and the BEOs are saved the time spent on the administrative task.

Some of the other initiatives he mentioned include usage of databases and WAN to ensure ease of information access, use of e-mail for reporting and information dissemination resulting in faster communication, audio and video conferencing (although this holds promise, this is still to be widely accepted), use of an examination technology system which processes examination data and leads to quick and efficient declaration of results, training of staff through Microsoft academies (he also pointed out that Microsoft had a commercial interest in the initiative) etc. The overall e-governance plans and policy of the state are an essential scaffolding for the use of ICTs in educational administration and national policy should also draw from state experiences. Mr. Vijay Bhaskar emphasised that ICTs in schools programmes need to be routed through SCERTs to ensure that the emphasis is on education and not technology. He stressed that ICTs in education should be more than just computer-aided learning programmes or picking up computer skills.

Discussions covered possibilities of using ICTs for child-tracking systems, for monitoring of schools and quality of education. Participants also stressed that e-governance budgets to need to cover all the requirements for e-governance including software, capacity building etc. and not just cover the hardware procurement aspects. There was a call for policy to have guidelines on Public Private Partnerships (PPP) and where and how PPPs can be used and when they would be suitable.

Dr. Hriday Kant Dewan (Vidya Bhawan Society) spoke of the need for decentralisation of educational administration and how ICTs can be used towards this. He cautioned that ICTs could easily just as well also be used to further centralisation and that policy should make active choices for ICTs to facilitate decentralisation. Dr. Dewan pointed out that academic and administrative discourse on using ICTs should focus on block, cluster and school levels. E.g. Databases that can help them track a school's own work and support decision making. In the discussions participants warned against the dangers of using ICTs for surveillance and centralised monitoring.

Concluding the session, Prof. Marmar Mukhopadhyay (ETMA) highlighted that ICTs have the potential to bring in a new culture in administration, and everyone in the administration needed to have access to the computers and Internet.

Meta issues including processes of policy formulation

The current process of policy making was discussed and participants expressed concern at its non-transparent and arbitrary nature. The draft policy document was marked as "highly confidential and not for circulation" and not shared with people working in the field of ICTs in education. While those associated with education for a long period were denied participation in the draft policy

processes and structures, several technology vendors with a direct commercial interest in policy were admitted.

Participants questioned the legitimacy of the two institutions asked to facilitate the process. Neither have any background in Indian education and being private organisations, their choices in inviting the people who would participate in the policy structures as well as in preparing the policy draft and also in refusing its circulation could not be engaged with or questioned. Education is a public concern and hence the process requires far wider consultations than has been the case currently. Participatory and transparent mechanism for policy making is a must. Just as NCERT as a government institution working in education for several decades formulated the NCF, should not a similar body coordinating the process of drafting an ICT in education policy was a question raised. Such institutional legitimacy is not enjoyed by the institutions facilitating the current process. Perhaps as a consequence, the policy draft does not betray deep understanding of education contexts and challenges.

The role of the private sector was discussed, the ICT policy current draft seems to be insisting that private sector should be providing content and training to government institutions, appearing to treat schools as a market for their goods and services which can be problematic. Policy needs to be cognizant of commercial pressures and not let NPISE become a means for vendors to profit at the cost of public good.

The need to eliminate vested interests from policy structures was emphasised. Technology vendors cannot be part of policy structures. Any need for their 'technological expertise' is questionable on several grounds; firstly there are public institutions that have extensive experiences in technology and technology appropriation. Secondly, the vendors perspectives on such policy bodies is revealed by their participation through marketing and networking officials instead of any technology experts. More importantly, at a policy level, the decisions are not such that specific technology choices need to be made. Hence vendors can certainly give their inputs to be considered by policy makers, rather than being a part of formal policy bodies. This is clear in other areas; a pharmaceutical company cant be part of a drug policy body or a telecom vendor can not be part of a spectrum allocation policy group. However in the ICTD area (applications of ICTs to development), it is quite common to involve vendors in policy making, which should be stopped.

Free Software and Open Access

The philosophy of the Free/Libre Open Source Software (FLOSS) movement of collaborative construction and freedom needs to be deeply understood by teachers for its educational implications . There would have been no internet without free software (since most components of the Internet run on free software) and no free software without Internet (since the Internet is a powerful medium supporting collaborative working). Free software enables the learner to 'open' up the application and make enhancements and extensions for local use, which proprietary software does not permit.

It was stressed that all publicly funded created resources needs to be in commons and should not be allowed to be privatised. Education is a social concern and hence education resources cannot be allowed to be privatised. Use of proprietary software is tantamount to locking up common cultural resources (our information and knowledge) in private hands (since the code that will unlock the resource is available only with private party and public is kept ignorant of the same). Hence use of proprietary software needs to be clearly justified, especially when free software alternatives exist.

Many countries from both developed and developing world have given primacy to free software in education, as also Kerala in India. Emphasis on free software needs to be part of NPISE.

Role of the government

It was emphasised by many that educationists need to closely engage with government at both central and state levels (A national policy would serve as a guideline for use of ICTs in education, however State governments will continue to engage with ICTs and buy computers independent of NPISE, hence both need to be engaged with) on this issue to support efforts at formulating a progressive policy on ICTs in education. This would prevent a vacuum that would otherwise be filled by organisations that have vested interests or lack understanding.