

Information and Communication Technology policies in Education: An urgent need to Contextualize

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Abstract:

The influence of ICT in all the fields and its potential to revolutionize human life is remarkable. Be it knowledge sharing, communication, accessibility, expressing views etc. had a great impact in all walks of life and specifically education. As the coming generations grow up to be predominantly techno - savvy citizens, the policies designed by the digital immigrants may not resonate with digital natives and therefore cannot foresee the possibilities. This paper envisages to lay emphasis on understanding the emotional, socio-cultural and economic context of designing futuristic ICT based policy for better dissemination. The basis of the paper is ICT in education: UNESCO, National Policy on ICT in School Education (2012) and the draft National Educational Policy (2019). It is an attempt to analyse national, technological and educational situation and feasible ICT enhanced programs for human requirements and suggest a plan to monitor its impact.

Key words: ICT, National policy, contextualize, digital natives, digital immigrants.

The formulation of any futuristic ICT policy will require not only analysis of planning, infrastructure, language and content, capacity and financing but also the socio-cultural ethos and emotional aspects from learners' perspective. Therefore, while framing objectives, guidelines and time-bound targets, the mobilization of required resources, and the political commitment at all levels to see the initiative through below. An analysis of the present state of the education system clearly indicate that there is a huge gap in the policy implementation. The institutional practices are greatly focused on grades rather than learning. Students are exposed bare minimum in best of the institutions. The barriers include teaching within the classroom rather than working and experimenting with systems. The curriculum and pedagogy are both out dated. The objectives of capacity-building is rarely achieved. Language is another barrier as most of the content is not available in local languages.

The goals and modalities at different levels of education are specified at state and national level which resonate with that given by UNESCO but lack implementation. It is important to understand the potential of different ICT to be applied in different context for different purpose. It is important to pilot test different models to understand the effectiveness and design accordingly. This is context specific and requires continuous feedback and improvement at application level. Identifying the financial resources to be trapped and the human resources to

networked from industrial sector to educational institution.

The ICT based modules developed for online courses are being developed by professionals with minimum pedagogical principles and therefore fail to capture and sustain students' attention. Another emerging model is gamification of concepts which is interactive but gamification without effective pedagogical input may not achieve required level of standards.

The framework on which the ICT framework is designed takes into consideration ICT environment, ICT policy framework and the implementation and institutional framework. These aspects are interdependent and the context of the policy formulation and implementation need to be analysed. The three aspects that have been focused in this paper are the socio cultural context, emotional context and economic context.

Socio-cultural perspective: Lim (2002) suggests a socio-cultural approach towards the study of technologies in education. A more holistic approach of studying ICT in schools by adopting a socio-cultural perspective was proposed. As technologies enter the socio-cultural setting of the school, it "weaves itself into learning in many more ways than its original promoters could possibly have anticipated" (Papert, 1993, p. 53). It may trigger changes in the activities, curriculum and interpersonal relationships in the learning environment, and is reciprocally affected by the very changes in causes (Salomon, 1993). Sensitising on social issues and transmission of culture could be effectively done in relation to content. The hidden curriculum strongly impacts the subtle learning. From this perspective, ICT is a mediational tool, incorporated within learning environments with authentic goals and purposes for students, and settings that are explicitly interpreted with other experiences of knowing and understanding as they get organised (Lim, 2002, p. 412). The digital divide is minimised as learning goes beyond gender and socio status of an individual. The state policy strived for creating an inter-connected clusters of villages with a central hub. Each central hub connected to an urban city with basic health-care facility provided. If implemented will have the potential to inter connect more effectively. professional skills in the 21st century requires ability to adapt to multi-disciplinary work and multi-cultural, multi-lingual, and ICT enhanced environments while soft skills include problem and opportunity oriented thinking, entrepreneurial skills, creativity, collaboration skills, empathy, ethics of responsibility. Meta-skills, on the other hand, would require the ability to manage the self (including concentration and attention management), flexible thinking, resilience, personal health skills, mental management and a disposition for lifelong learning.

Emotional perspective: gamification of concepts is great way of implementing interactive strategies in learning process at the same time games when designed effectively help in satisfying the emotional needs such as immediate appreciation, peer to peer interaction, leading and controlling etc. It is instant gratification for all that an individual fail to do in real life. Thus, the games are to be designed in collaboration with strong pedagogical principles. The emotional impact of digitalization is yet to be assessed. Another important aspect is the teachers' beliefs and apprehensions that need to be transformed. The fear of using technology and technology to

replace teachers still persists. Assistive technologies require designing that would not only deliver content but strengthen individuals emotionally. Another important aspect that needs to be addressed is the assessment of screen time, navigation to other sites that can cause emotional shock, social networking and its impact.

Economic perspective: The economic development of the country depends on the extent to which ICT education had seeped down. If a common man is comfortable using a smart phone that invaded the market latter the question arises why ICT usage and equipping the next generation is taking longer time. Education system remained traditional and failed to induce the skill among the students. Lack of facilities and faculty remained the prime cause. Then obviously the basic reason is the economic equation. The national ICT policy 2018 is to focus on availability, affordability and investment. The statistics shows that the initial investment to integrate ICT in school education is 63,762 crores and recurring expenditure of 18,976 crores. The cost of preparing teachers professional development would require 3,099 crores with recurring cost 1,550crores. With an allotment of 12% GDP to the education sector it is far reaching and impossible to effectively meeting the standards in the ICT policy as suggested by UNESCO. This gap in the infrastructural facilities and maintenance confined to teaching only the basics or an easy replacement to audio visual aids in the schools. The programmes were rarely integrated and holistic in nature and remained isolated. The outcome remained underachieved in the school system. Although it is not possible to predict exactly which technical skills will be required, a great deal of recent research indicates that all graduates will need certain core competencies. The core competencies identified by the World Economic Forum (2016) are critical and analytical thinking, social and collaboration skills, computational thinking and respect for diversity have not been incorporated. Thus, our policy implementation fell short of the objectives to be achieved.

Figure 1: Contextual dimensions to ICT policy framework:

	Socio- cultural	Emotional	Economic
Map the National, Technological, and Educational Situation	Social issues & cultural values and ethos	Minimizing on emotional barriers	Budgetary allocation & estimation of returns
Plan for Physical and Human Requirements	Network with IT professionals	Humanistic interventions	Capacity building Army of professionals required
Formulate and Assess ICT-Enhanced programs	Explore basics and introduce coding at early stage	Trust and feedback Learning analytics	ICT based assessment

Plan for ICT-Enhanced Content	Region specific content	Connect aesthetically and value integrated	Expertise input and improved accessibility.
Generate Program Costs	Trap resources from local	Critical role in human development	Financial attractiveness
Create a Master Plan	Professional skills, soft skills and meta-skills	Sustainability & inclusiveness	Knowledge based economy
Monitor Implementation, Effectiveness, and Impact	Acceptance of ICT	Legal and regulatory framework	Uncertainty, Risk & acceptability

Conclusion: India in recent past has seen a number of ICT based applications such as Shala Siddi, e-pathshala, Shala Darpan, Swacch Vidyalaya, Digital gender Atlas, Saransh Portal etc in school education but very little has been explored to improve the pedagogical relevance of ICT to meet the changing skill need of a digital society. Documentation of innovative application and purposeful uses of ICT is lacking. ICT implementation system includes strategic readiness; organizational readiness; pedagogical readiness and technical readiness. Other key factors are operational readiness and learner readiness. The modalities for the same needs to be meticulously chalked out. The policy need to have a review mechanism as it is a fast changing field. There is a need to create an ecosystem of ICT integration build on theoretical basis. A theory building research could probably find solution from an multiple perspective.

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