

Digitalization: Shaping the Future of Education

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Abstract

The Indian education system has a great opportunity to go digital, thereby leapfrogging the progress in education that other countries have done. Over the past 8-9 years, Indian schools and students have demonstrated that their ability to adapt to digital technology is no less than anybody else in the world. It is a fact that today many private schools in India which use products like Smart class are way ahead of the technology adoption curve than many other schools in the US, Singapore and even Japan. There is a great opportunity in front of us to take e-education and spread it across the country. The advantages are quite obvious. With one stroke, we will be able to deal with the critical teacher shortage problem and also the teacher quality problem. We will also be able to make education contextualized, localized, relevant and consistent across the country. It has been proven through multiple studies that when kids are exposed to multi sensory and

multimedia education, they absorb better and they are able to retain the learning content. One of the perennial problems in the Indian education has been the huge drop out ratio because students in school do not find education relevant or contextual to their surroundings. Using high quality digital materials will immediately ensure that every learner in the country will find it a joy to go school and immediately cut down the dropout rate. In the past, many proposals have been made to the government regarding e-education and this could be an opportune time to take up digital class room and digital education across the country.

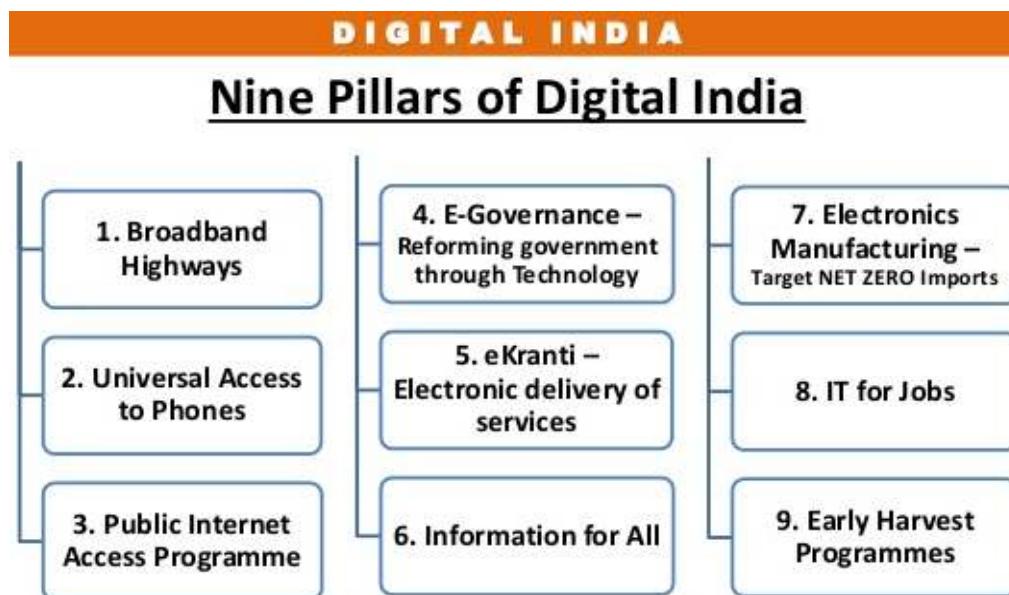
Digitalization

India is already changing fast. With 900 million users, our mobile network is second largest in the world. E-commerce transactions are becoming a rage. Online electronic payments options are available through PayPal, PayTm, Square, Apple Pay, Ezetap and Mobikwik. Technology can help

farmers to buy fertilizers, insurance or compensation money can be deposited in an Aadhaar linked farmer's bank account. A micro ATM can help *kiryana* shop carry out customer verification for providing banking transactions. Telemedicine facilities allow doctors to interact with distant patients. For speedy, cheaper justice, a centralized technology-empowered platform is available, which can store court records, accessible to both judges and litigants.

Similarly nowadays, high-quality education can be provided online at a fraction of cost. *Ek Step* offers self-learning

through entertaining games. Students of various academies listen to the lectures at home and do homework in school with help if required, from teachers. Harvard, Stanford and MIT, all top-class institutions, make videotaped lectures available on Internet. Companies like Coursera, Udacity and edX offer online courses from some of the best universities in the world. Lectures can be viewed and homework submitted from anywhere. Degrees/certificates can be stored in demat form like shares to avoid Vyapam-type scams.



Digital Education: the Mahamantra

Our honorable Prime Minister Shree Narendra Modi has set forth the vision

for Digital India. This vision w.r.t. education has a mission where we need to work towards the dream of a Digital India by 2020 where:

1. High speed Digital Highways will represent One India and will connect 1.2 billion Indians
2. High speed Digital Highways will make Quality Education reach the most inaccessible corners of India
3. Digital Education will become the part and parcel every school in the country

The transition in school education from paper to pixel is rapidly growing across the globe and in India, primarily because there's a strong belief that use of Digital Technology is the way to the future for Digital India. If we see the world around us over 90% of schools in developed countries like the UK, US, Australia and Singapore are using digital technology-enabled solutions for imparting education at schools. In India, too, many schools are experimenting with using Digital Technology for education. Few of the first companies in this space like Educomp, NIIT have already demonstrated the benefits of use of Digital Technology in education.

The Way Ahead: Challenges and Measures

The rapid and constant pace of change in technology is creating both

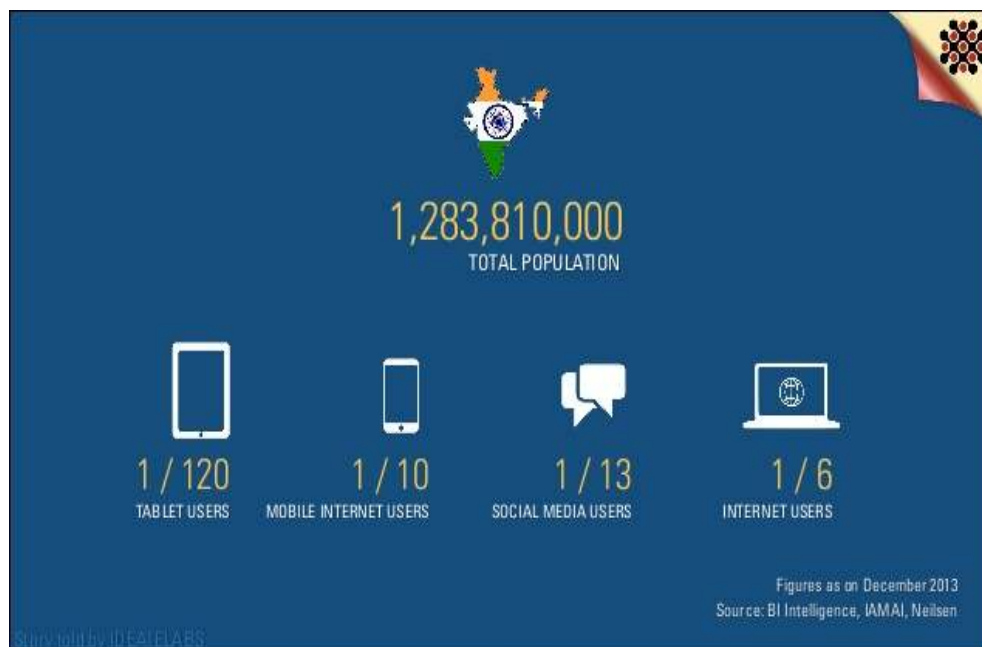
opportunities and challenges for schools. Digital innovations require upgrading schools' technological infrastructure and building new professional development programs. Some schools have been adept at keeping up with those changes, while many others are falling far behind, creating a digital divide based largely on the quality of educational technology, rather than just simple access to the Internet. Yet, there is a long way to tread before realizing the actual potential of Digital Education in India. Some of the prominent hurdles are Digital Literacy & Infrastructure. The majority of the Indian population still does not have the required internet bandwidth and many are illiterate in digital terminologies and devices.

The opportunities include greater access to rich, multimedia content, the increasing use of online course taking to offer classes not otherwise available, the widespread availability of mobile computing devices that can access the Internet, the expanding role of social networking tools for learning and professional development, and the growing interest in the power of digital games for more personalized learning. Innovation should also be poured into making digital education more interactive and robust. Limitation in

teaching numerical analytics and empirical subjects like Mathematics can be overcome by appropriate classification of content and tutors trained and specialized in responding to dynamic and spontaneous queries of students.

Almost 85% of the Indian population does not speak or write English. Creation of a Hindi (other supported local languages) internet to tap the sub urban or rural market potential can prove to be a key element to penetrate deeper. Also, affordable internet

access, data enabled devices and appropriate internet plans can play a significant role in tapping the market. Here, a special emphasis must be laid on Security features like examinee verification, plagiarism etc. to uphold the independence and integrity of the education system. Active campaigning, informative sessions, technical workshops and a multi-pronged approach by all stakeholders is needed to bring about Digital awareness and change trends like Distance Education to Digital Education.



Digitalization in Rural India

Lots of efforts are needed to bring the revolution in learning process in rural areas of India. Lack of easy access, lack of

teachers, lack of interest, poverty, gender differentiation, lack of infrastructure, common curricula are few of the reasons which are holding back the progress in rural education. But with the use of technology,

mass education can be given and situation can be changed. To reach rural areas first of all study material can be distributed to the students, then online interaction and online videos can be made with teachers. Online teaching creates extended classroom communities for discussions, virtual classrooms and for interaction. There is another option in which classroom courses can be recorded in a real time and used for teaching the students who cannot attend these classes. This creates an expanded access to education. Rural education needs e-learning technologies. Audio conferencing and video conferencing should be made part of the education system in rural India. Teachers at the schools are not well equipped with the gadgets. So teachers should be given printers, laptops, for giving notes and notices to the students. By using technology the problem of unqualified teachers can also be solved.

Initiatives- Public private partnerships are playing wonderful role in making rural India tech savvy and in providing education NGOs are playing an important role in technology assisted rural education. A not-for-profit organization, Azim Premji Foundation, run by Wipro group has been working towards this issue since 2001. It is

helping 2 million children in 16,000 schools from 14 state governments. This foundation works by assisting computer-aided learning. For children computer is a very exciting machine. Schools in the states like Andhra Pradesh, Assam, Chhattisgarh, Himachal Pradesh, Karnataka, Madhya Pradesh, Meghalaya, Tamil Nadu, Tripura and West Bengal have received computer-assisted education through collective efforts by NIIT and government. This has given positive results. Dropout rates have reduced to a great extent through computer-aided education.

Edusat – Provided video education in rural India. Edusat was launched by ISRO.

Vidya Gyan – Works with an aim to uplift the exceptional rural students from economically disadvantage background. They are given world-class education free of cost at VidyaGyan which is a residential institute. It is an initiative of the Shiv Nadar Foundation founded by Shiv Nadar. He is the founder of HCL. VidyaGyan has taken 200 students who scored the highest in the UP state board examinations. From sixth grade onwards these students will be taught at VidyaGyan.

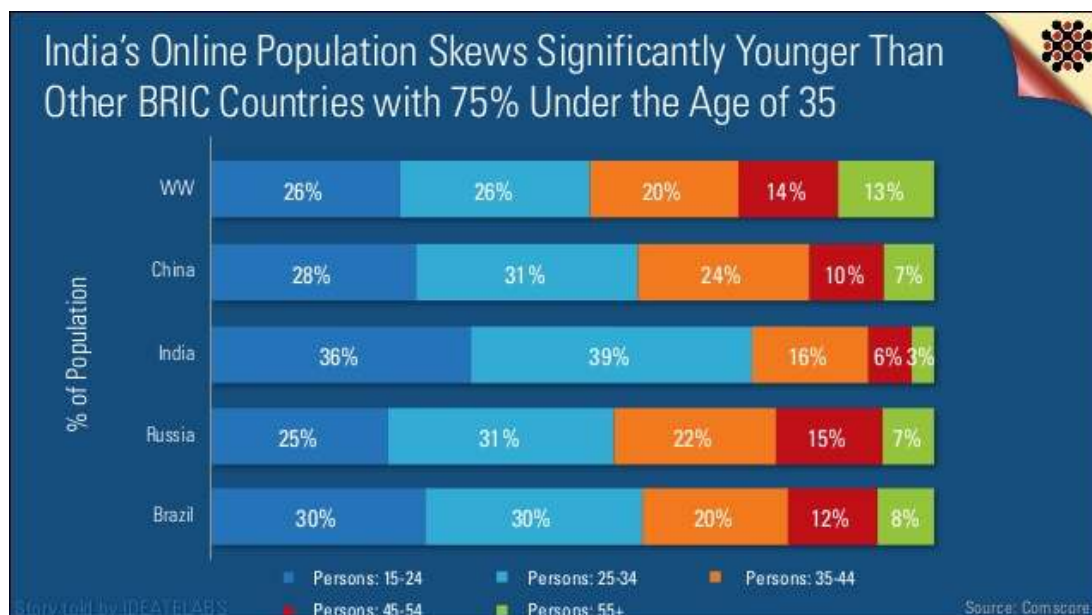
Samudaya- Under this programme 2000 children were taught English, social science,

science and mathematics through technology. Using same method 250 teachers were also trained and the outcome was really positive. It tremendously reduced the school dropout rates and absenteeism and at the same time improved the level of confidence.

E-Learning Centers - Government has to create more e-learning centers to educate students living in rural areas. Such e-learning systems will surely improve the society both economically as well as socially. Technology attracts the rural children. Their wish to attend school increases with the word computer. Even parents show more willingness in this case. Computer education builds up the required

confidence and narrows down the gap between urban and rural education. So rural India needs great investment in this sector.

Infrastructure - Rural India is deficit in technology. Along with this rural India severely suffers from the shortage of water, infrastructure, power, health facilities etc. Discontinuation of electricity is the major problem out of all. There is an option for the same. Solar energy is available in abundance that can be used in many cases. Access to education is second major issue. Students have to cover miles for education. For this more schools are required to be built. Schools should open on the basis of population, and distance.



Conclusion

Digitalization of education in India aims at inclusive growth in areas of electronic services, education and job opportunities etc. This will generate huge number of IT, Telecom and Electronics jobs, both directly and indirectly. Success of this programme will make India Digitally empowered and the leader in usage of IT in delivery of services related to various domains such as health, education, agriculture, banking, etc. With technology as a catalyst, education is moving from a knowledge-transfer model to a collaborative, active, self-directed, and engaging model. This change couldn't have come at a better time for India.

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