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Bridging the digital divide in education

The starkest digital divide probably is evident in education, which is fundamental to any transformation. The availability of hardware, software, network equipment, connectivity, and 24X7 reliable information are keys to bridging the digital divide in education.

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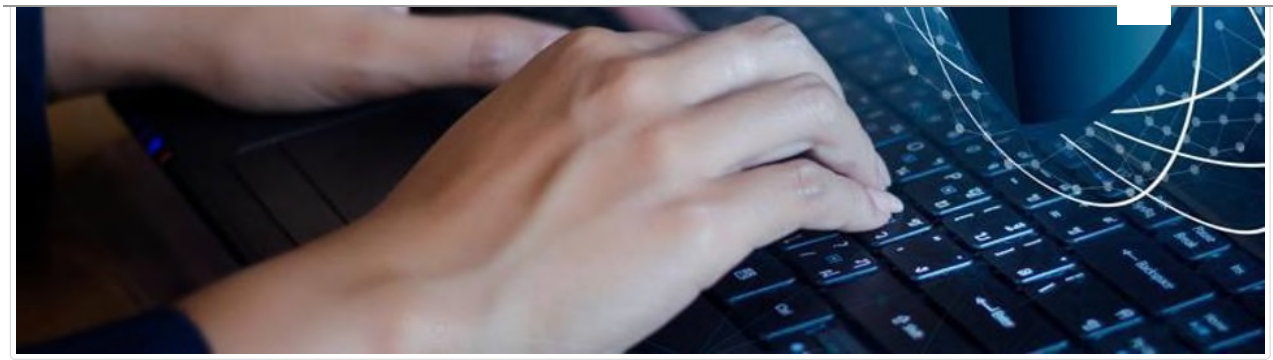

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As of March 2019, there are about 4.4 billion Internet users globally, of which only 56Cr are in India. On a population coverage ratio, India's 41% is way below the global 57%. Even in the developed nations of North America and Europe, the digital divide is stark, and there is a wider divide in India. Compound that with our other drawbacks such as bureaucracy, corruption, network quality, tech infrastructure and affordability.

For all our tall claims of digital advancement, we have over 700 million people who don't have access to, or ability to surf, the world-wide-web. Those who have had access to ICT have been transforming their lives over the last few years. Others have got marginalised with lack of new ideas and opportunities. The huge number of youngsters not having access to ICT will be detrimental to the developmental agenda.

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24X7 reliable information are keys to bridging the digital divide in education.

Our analysis of the digital divide in education threw up a three-dimensional problem with sub-segments of all types.

The first dimensional gap is between those who have access to hardware, network, software, authentic information, etc and those who don't. This is not necessarily a rich/poor divide. Students in remote rural areas and peripheral urban areas where connectivity is either too slow or intermittent are not necessarily poor. Or, there may not be curated sources of content. Let's call it the Accessibility divide. Bureaucracy, corruption, tech support, and infrastructure are some of the causes.

The second dimension is the gap between generations – that is, between teachers and parents vs. students. Call this the Generational divide. Parents are wary of giving devices to kids because of misuse. They also don't know how to guide in the effective use of the digital media. Teachers are hesitant to change their pedagogy for fear of losing their relevance. As such they struggle to complete the syllabus in time. Even if they desire to become a coach in shaping the young minds, it is not easy with pressures on syllabus requirements, the obsession with marks, and other commitments. I remember the experience of a colleague from Microsoft when he was teaching visual programming to a batch of young girls and how quickly he reached his level of inefficiency. By the third class, the students moved on beyond the scope of his curriculum.

The third dimension, call it the Behavioural divide, is the gap between those who can learn on their own, with or without social setting, vs. those who can't. Many women, girls, minorities and migrants shun digital access for learning because it is either too boring to learn on their own or too antisocial. Many are incapable of learning on their own. This probably explains why only 2% of the millions who enroll for MOOCs complete the courses. In this divide, the academic aspirations and self-directed learning need handholding. This dimension is somewhat akin to the Techno-Readiness research that my colleague at the University of Miami had done across five nations, pointing to no correlation between one's education, income or social status to technology adaption. In 2016, we had proposed the techno-readiness segmentation study to GoI to accelerate the digitisation drive more effectively but the execution initiative was found missing at both the bureaucracy and NITI Aayog levels.

The digital divide widens the rich-poor gap in academic performance and earning potential. The rich, having access to the latest ICT facilities and best available learning materials, do well in academics while the poor, having access to only old ideas and pedagogy will fall back. The rich also have the advantage of getting into schools that are pioneers in ICT adaption and are pricier.

Education should liberate us to scale life and help us find solutions to the problems of the world. The digital divide impedes performance in academics, creates undue competitive advantages to some, and reduces the productivity for others. As an example, take most of our students – they know mostly theory or copy/paste from the Internet whenever they have access to specific topics.

So how do we go about reducing the divide? Anyone looking to bridge the digital divide will do

well to address the pain points of sub-segments within the three dimensions.

Different approaches will be needed for each dimension and sub-segments. For instance in remote rural areas and poor urban areas, access can be improved with community technology centres, or as former US President Clinton had done, internet-enable religious places, schools and libraries across the country. Introducing satellite-based access where fibre optic is not yet laid, enable mobile networks, speed-up Google balloons and so on. Lower cost and reasonable speed of access are critical.

Schools and governments should assess current and future infrastructure requirements for digital age and bridge the gap. Kids carry multiple devices and on an average may have 3-4 soon. The projection is that there will be 1.5 handheld devices per person by 2019. Globally, around 11.5 billion devices! Institutions may look to charge a small fee for multiple device access or higher speeds just like Texas A&M does.

Different states and districts will need different approach not much different from the techno-readiness approach. For instance, Kerala will need to address the behavioural and generational divide instead of the Accessibility one.

For correcting the behavioural divide, teachers and parents need to bridge the generational divide partly and mentor students to self-learning. They should also appeal to policy makers to shift the focus from current examination patterns and even push for open book exams. The assignments and questions given to students should encourage learning the fundamentals and acquiring the ability to apply them rather than reproducing from memory. Content providers should make the learning more fun and probably allow for peer learning as well as group-learning in an adaptive format.

A group of teachers was asked what they would do when students started learning without them. Only a few said they could move onto a higher role of mentoring them and helping students to do more. The rest were worried about becoming redundant. Teachers must be trained in the latest technology, curriculum and the use of digital media in pedagogy. Azim Premji University has been reforming teachers for some time now.

Students should look at digital learning not as a way to disconnect from teachers and peers but to make those interactions more meaningful in transforming to what they want to achieve. In this age, jobs will come to where expertise is and not the other way. They should look at education not as a means to just getting a job but creating new avenues for growth.

We can stop our brain drain by improving our educational standards and it is imperative that the policy makers revamp the education sector “outside-in” and facilitate private sector to build Stanford-like institutions. Granting an eminence status to a handful of favoured institutes – and freeing them up from AICTE/UGC/regulatory control – is not a solution. Licence Raj should be abandoned for all and bring in other certification forms that will promote self-regulation. We need over 50 plus multi-discipline research institutions with world-class standards. They should be allowed to develop their own curriculum, pedagogy and

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