

Digital Education in Rural Schools: Issues, Challenges & Suggestions

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ABSTRACT

India has one of the largest populations of children in the world. The future of our nation are these children and therefore they should be provided necessary means to realize their capacities. Smart and modern system of education can play a important role in this direction. Schools situated in rural areas have very less resources such as single teacher schools, improper infrastructure etc. which leads to poor quality of education. To digitize education in rural areas, teachers should be provided multimedia teaching tools such as smart boards, LCD screens, videos etc. which engages students and makes concepts easier for them to understand. By making it possible for one teacher to deliver information remotely across several locations, interactive digital media will also help to cope-up the dearth of teachers in these schools. Limited training in using digital tools is one of the key hurdles faced by teachers in rural areas, therefore, it is necessary to impart essential technology training to teachers. To overcome these challenges, teachers should be made to attend training programmes initiated by the government as well as NGO and corporate social responsibility. Digital education for students in rural schools can bring them at par with students from urban areas and further enhance universalization of education, thus fostering India's national interests.

1. Introduction

India has the largest population of children in the world, with an estimated 43 crore (430 million) children in the age group of 0-18 years in the country. These children are the future of our nation and therefore, it is important that they are provided with everything that is required for them to realize their full potential. A modernized education system can channelize efforts in this direction. In order to achieve this, it is imperative that we address prevailing teaching-related concerns such as outmoded teaching methods, shortage of qualified teachers, highly disproportionate student-teacher ratio, and inadequate teaching materials that affect the quality of education.

2. Issues

2.1. Overview the status of education

Approximately 67% of Indian population resides in villages and so the topic of rural education in India is of utmost importance. A survey named Annual Status of Education Report (ASER), reports that despite the rising number of rural students, the quality of education being imparted is questionable as more than half of the students in fifth grade are unable to read a second grade text book and are not even able to solve simple mathematical problems. Not only this, the level of math and reading is further declining.

2.2. Provision of quality education

Access to education and Quality of education are the major concerns in rural schools as there are very few committed teachers in addition to lack of proper text books and learning material in the schools. Though Government schools exist, but when compared to private schools, the quality becomes a major issue.

2.3. Usage of technology

While technology has become an inseparable part of urban lifestyle, rural India has a different story as there are still millions of adolescents in rural India who have not yet seen a computer. E-Learning is simply a term used to encapsulate 'the use of technology for effective learning', and what could be more effective than deploying this tool for spreading the light of education in the darkest corners of the nation! E-learning's invasion in rural education has emerged as both - a ray of hope as well as a challenge. In a developing country like India, e-learning undoubtedly offers great opportunities to empower the rural areas.

2.4. Provision of Information and Communication Technology enabled solutions

With Information and Communication Technology (ICT) crafting e-learning's path, it can incredibly transform the face of rural learning. Here are some facts that back the bright future of e-Learning in India. Educational technology gives access to a large amount of digital learning material. A good Learning Management System (LMS) not only shapes the information but also adds learnability quotient to it.

2.5. Training of teachers in using technology in teaching-learning process

Challenges faced by teachers in the rural areas include exposure to technology, limited training in using digital tools, and apprehensions regarding new modes of teaching. Therefore, imparting adequate technology training to teachers becomes crucial.

2.6. Motivation among students for using technology in gaining new knowledge

Aim is to bridge the digital gap in education between rural and urban India and provide equal opportunities for quality

education to children from all background. Complicated concepts can be understood easily by students with the help of interactive modules such as videos, and presentations as a medium of learning. It will also help in increasing their interest and curiosity level.

2.7. Major challenges faced in digitization of education

There are several challenges ahead in the journey of providing digital education in rural schools of a developing country like India. Some of these challenges are non-permanence and non-teaching duties of teachers, lack of quality content, high speed internet and proper devices, several problems related to language, etc. These challenges have been discussed in detail in the next section.

3. Challenges

3.1. Non-permanence of teachers

Majority of schools in rural areas are run by the government. The involvement of the private sector in rural education is very limited. The ad hoc teachers appointed by the government, instead of permanent ones, are paid poorly in comparison to the remuneration of a full-time Trained Graduate Teacher (TGT). Moreover, their career prospects of becoming full-time TGT are also quite low which leads to disappointment, eventually creating a dearth of teachers because they move away to more permanent jobs.

3.2. No accountability of teachers

The rate of absenteeism in schools in rural areas is very high due to lack of accountability of teachers and school authorities. The School Development and Management Committees (SDMCs) entrusted with the responsibility of overseeing teachers and their duties comprises parents and members of the local community. However, research points out that the committee has hardly ever seen any success.

3.3. Additional duties

Non-teaching duties like election invigilation often keeps teachers away from schools. Furthermore, teachers are often posted far away from their home, and with a poor transport system in rural India, the distance only adds to their woes and often results in absenteeism.

3.4. Exemption from TET

With a clearing rate of only 20 per cent, several states have had to exempt candidates from Teachers' Eligibility Test (TET). This short-sighted move which is an attempt to quickly fix the issue of dearth of teachers, has only deteriorated the quality of teachers in the states even further. However, this is a major concern not only in the exempted states, but across the entire country.

3.5. Lack of quality content, high-speed connectivity and proper devices

Siddharth Chaturvedi, Director, All India Society for Electronics and Computer Technology (AISECT) says, "Availability of quality content in regional languages ... acts as a barrier for delivering ICT-based education in rural areas." As pointed out in number of surveys, infrastructural shortfalls such as small classroom size, frequent power outages, non-availability or poor quality of hardware, software or e-content,

and insufficient time to integrate ICT with the knowledge dissemination framework. Despite there being many private teacher-training institutes in India, the quality of teachers is not improving as the training they provide is unsatisfactory. More attention is needed for continuous professional development as it is a big motivator for teachers.

3.6. Problems related to language and content

Approximately 85% of the Indian population does not write or speak English. With most web-based resources being in English, it is important to focus on content development in regional languages.

3.7. Tracking and Security

Verifying the examiner and examinee authenticity, as well as tracking the course completion needs implementation of extra mechanisms besides the learning process.

4. Suggestions

The use of technology can help in mitigating aforementioned concerns. Education can be digitized in rural areas by providing multimedia teaching tools to teachers and engaging students through learning methods that utilize digital tools, such as smart-boards, LCD screens, videos, etc., to teach them different concepts. By making it possible for one teacher to deliver information remotely across several locations, interactive digital media will also help address the shortage of teachers in these schools. As of 2016, 9,07,585 posts for teachers are lying vacant in elementary schools and 1,06,906 posts in secondary schools.

New digitized education tools in rural India could solve the problems of mass reach as well as quality and relevance of education. Teachers can be made available via virtual classrooms, given their reluctance to teach at schools in remote rural areas. The government has moved speedily to create the requisite infrastructure for ICT-enabled education.

4.1. Adequate technology training of teachers

Imparting adequate technology training to teachers has become a crucial part. This can be done by means of training programmes initiated by the government as well as by non-governmental organizations (NGOs) and Corporate Social Responsibility (CSR) arms of corporates.

4.2. Necessary infrastructural support

Infrastructural support in schools is one of the most crucial factors that needs to be looked into. A concerted effort in this direction is being made by both the central as well as all state governments. Collaboration with various telecom service providers has been done to empower remote areas of the country with infrastructure set-up for internet services. However, since only 9 percent of rural India has access to internet, more efforts are needed in this direction.

4.3. Allocation of union budget

In the Union Budget for 2018-19, the government allocated Rs. 456 crores for digital education, showing its intent of trying to improve the quality of education by integrating technology. There is a greater emphasis on digital boards rather than the

traditional black boards signifying the role that technology must play in improving the quality of education.

4.4. Collective efforts of the Government, NGO, and CSR

The NGOs are also playing an important role in spreading digital education tools across rural India. For instance, Pratham, in partnership with Vodafone Foundation India, has started the digital classroom initiative called "Learn, Out of the Box" to enhance teaching and learning in low-income schools using technology as the primary teaching tool. Similarly, another not-for-profit e-Vidyaloka is trying to improve the quality of education in hinterlands of India with the help of digital classrooms. The passionate teachers include housewives, IT professionals and retired defense personnel. In accordance with the availability of volunteers, e-Vidyaloka team organizes skype sessions in different batches. There is a huge shortage of teachers in our country, even though there are large number of unemployed college pass-outs. The NGO tries to properly channelize the supply in the sector where there is a demand. Though both NGOs and government are making sustained efforts in the field of digital education in rural India, the next step required is bringing in the synergy in their efforts in this field so as to be able to implement these initiatives on a large scale and maximize the impact. A couple of projects in the school education segment have been launched which are in tune with the Modi government's Digital India initiative. E-basta is one such project which aims to make digital education via tablets and computers accessible to students in rural areas. Critical thinking skills can also be developed with the help of digital education. The aim of the project is not only to benefit learners in learning concepts, but also to make them comfortable with technology. Rashtriya Madhyamik Shiksha Abhiyan (RMSA), has partnered with state governments to enhance the capacity of all teachers in Information and Communications Technology (ICT). Through the collective efforts of the government, NGOs and CSR wings of corporates, rural India has started to steer towards achieving better and more effective use of digital tools. Though it is in its initial phase, this development is promising. Students in rural schools can come at par with students from urban areas through the help of digital education and further universalization of education, thus fostering India's national interests.

4.5. Data enabled devices and appropriate internet plans

Through technical workshops, informative sessions, active campaigning and a multi-prolonged by all stakeholders, required awareness can be brought about digital education. Appropriate data plans and data enabled devices can play an important role in accessing the market. But, to maintain the independence and integrity of the education system, a special

emphasis must be given to security features like plagiarism, examinee verification etc.

4.6. Pradhan Mantri Kaushal Vikas Yojana and Sarva Shiksha Abhiyan has Digitalized Education

Over the last 15 years, more than 20 lakh people have been trained, through a widespread network of Skilling and Education Centers which are spread across 3 Union Territories and 29 States covering 388 districts, 1070 blocks and 6000 panchayats. Also, in order to train over 13 lakh people in the coming 10 years, eleven major academies have partnered with the National Skill Development Corporation (NSDC). Most of the beneficiaries belong to the weaker and underprivileged sections of the society such as scavengers, BPL, women, OBCs, SC/ST etc. Various ministries in the state and central governments have supported these trainings. Multiple states like Madhya Pradesh, Haryana, Gujarat, and UP have initiated DDUGKY/Aajeevika, Skill Projects of Ministry of Rural Development, Government of India which has resulted in gainful employment for nearly 60% of those students. Moreover, about 45 lakh people in rural and semi-urban India have been impacted through the various development initiatives of the government such as financial inclusion, e-governance, skilling and vocational training.

5. Conclusion

Availability of web enabled and mobile compatible e-content, speed of broadband penetration and the maturity of consumers in accepting the digital form of education will decide the future of ICT based education. Government is moving rapidly in creating the infrastructure required, and as for the acceptability of it as a learning medium, students in the urban areas have already undergone the initial phase of exposure to digital format of education and are now able to choose the right content to supplement the offline classroom-based learning while students in the rural areas provide a big opportunity as digital format can bring in big gains. Increased collaboration between learners of all segments will be one of the major outcomes of digital education. Also, on-demand and self-paced learning would also gain momentum in the future. Digital education is a win-win situation for all as students can study at their own pace, while teachers can prepare their lesson plans with an innovative mix of animation and elaborate audio-visual effects. "ICT is the greatest tool for India and other developing nations to create their own set of digital immigrants who will drive their country's progress and make it into one of the biggest knowledge economies and a global superpower" (Doshi 2014).

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