e-Basta- An Innovative Steps towards Digital India

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ABSTRACT
The Digital India initiative is spreading its wings in every area possible. The Government of India has launched the Digital India programme with the vision to transform India into a digitally empowered society and knowledge economy. Digital India is an umbrella programme that covers multiple Government Ministries and Departments. It weaves together a large number of ideas and thoughts into a single, comprehensive vision so that each of them can be implemented as part of a larger goal. Digital India is to be implemented by the entire Government with overall coordination being done by the Department of Electronics and Information Technology (DeitY). Digital India aims to provide the much needed thrust to the nine pillars of growth areas, namely Broadband Highways, Universal Access to Mobile Connectivity, Public Internet Access Programme, e-Governance: Reforming Government through Technology, e-Kranti - Electronic Delivery of Services, Information for All, Electronics Manufacturing, IT for Jobs and Early Harvest programme. Each of these areas is a complex programme in itself and cuts across multiple Ministries and Departments. This paper addresses the government `s Digital India Initiative for imparting education to its students. Digital Literacy is the ability of individuals and communities to understand and use digital technologies for meaningful actions within life situations. Through eBasta, the government plans to empower both society and increase knowledge through digital mode, eBasta project that provides a framework to digitize the school books. The entire initiative would be managed and run by Center for Development of Advanced Computing (C-DAC), the government backed organization which is responsible for research and development under DeitY.

Keywords
eBasta,CDAC,ICT,RMSA

1. INTRODUCTION
In line with the government's Digital India initiative, this project “e-Basta” has created a framework to make school books accessible in digital form as e-books to be read and used on tablets and laptops. The main idea is to bring various publishers (free as well as commercial) and schools together on one platform. In addition to the portal, a back-end framework to facilitate the organization and easy management of such resources has also been made, along with the web based applications that can be installed on tablets for navigating the framework. The framework, implemented as a portal, brings together three categories of stakeholders: the publisher, the school and the student. Through eBasta, the

government plans to empower both society and increase knowledge through digital mode. Through e-Basta, the publishers of books can upload the e-Content and view comments given by the users. The authorized school teachers, can access the portal to compile resources for each class as per their preference. After browsing through the e-Contents uploaded by various publishers and searching for the right contents, the school may organize them into a hierarchical e-Basta. Every e-Basta is assigned a unique name, which may be given to students so that they may download the e-Basta on their own. So to facilitate use of these e-books, the Centre for Development of Advanced Computing (C-DAC), who helped develop the portal, has also designed an application, which can run on any Android device. Resources on the portal may be free to use or have a price tag on it. [1].

2. INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN SCHOOLS
The Information and Communication Technology (ICT) in Schools was launched in December, 2004 and revised in July 2010 to provide opportunities to secondary stage students to mainly build their capacity on ICT skills and make them learn through computer aided learning process. The Information and Communication Technology (ICT) in schools have been subsumed in the Rashtriya Madhyamik Shiksha Abhiyan (RMSA). Now ICT in Schools is a component of the RMSA.The Scheme is a major catalyst to bridge the digital divide among-st students of various socio economic and other geographical barriers. The Scheme provides support to States/UTs to establish computer labs on sustainable basis. It also aims to set up smart schools in KendriyaVidyalayas and NavodayaVidyalayas which are pace setting institutions of the Government of India to act as “Technology Demonstrators” and lead in propagating ICT skills among students of neighborhood schools. [2]

2.1The scheme essentially has four components:-

2.1.1 Partnership with state governments and UT Administrations for providing computer aided education to secondary and higher secondary government and government aided schools.

2.1.2 Establishment of smart schools, which shall be technology demonstrators.

2.1.3 Teacher related interventions, such as provision for engagement of an exclusive teacher, capacity enhancement of all teachers in ICT and a scheme for national ICT award as means of motivation.

2.1.4 Development of e-content, mainly through Central Institute of Education Technology (CIET), six State Institutes of Education Technologies (SIETs) and 5 Regional Institutes of Education (RIEs), as also through outsourcing.

3. HIGHLIGHTS OF THE REVISED SCHEME
The objective of the scheme is to cover all government and government aided secondary and higher secondary schools by giving priority for early coverage of schools in educationally backward blocks and in areas having concentration of SC/ST/minority/weaker sections.

Under the revised scheme, there is a provision of a suitably qualified full time computer teacher in each secondary and higher secondary school. In case of higher secondary school having computer related subjects as elective, there is a need for a post graduate computer teacher.

There are provisions for in-service (induction and refresher) training for all teachers in secondary and higher secondary schools to equip them to impart ICT enabled teaching.

150 smart schools would be set up by the state governments and UTs at the district level using a grant of Rs. 25 lakh per school and a recurring grant of Rs. 2.5 lakh per year. This would enable provision of at least 40 computers in each of such school.

There is a provision to strengthen SIETs to contribute to e-content development. Management, monitoring and evaluation will be strengthened. Convergence with the existing program-me would be essential especially in teacher training and ensuring reliable power supply and internet connectivity.

The scheme includes National Award for teachers using ICT in schools for teaching learning process.

The sharing pattern will be 75.25 between the Centre and the State except for the north eastern States including Sikkim where the ration would on 90.10.[5]

3.1 Coverage

The scheme currently covers both government and government aided secondary and higher secondary schools. Financial assistance is provided for procurement of computers and peripherals, educational software, training of teachers, development of e-contents, Internet connectivity and setting up of smart schools.

4. C-DAC E-LEARNING

C-DAC has developed a number of indigenous solutions for content management, evaluation and assessment, virtual classroom, collaboration for eLearning domain. Some of the solutions are listed below [3].

I. e-Shikshak is a learning management system with rich support for Indian languages.

II. National Online Examination System (NOES) is an examination system primarily aimed at conducting recruitment.

III. Online Labs (Olabs) for school lab experiments provides students with the ease and convenience of conducting experiments over the Internet.

IV. Veda is a general purpose online testing and question banking system, primarily supporting multiple choice questions (including its variant forms such as match the following).

V. Video conferencing solutions for building virtual classrooms supporting synchronous lectures are also available from C-DAC.

VI. e-Saadhya (SaralAnukulaneyAdhyayan) an Adaptable and Accessible e-Learning framework for the children with mild mental retardation and Autism, is being developed with the domain support from National Institute for the Mentally Handicapped (NIMH) with local language support in three Indian languages Hindi, Telugu and Kannada.

VII. An Academic Networking portal for the faculty members, students, and academic institutions to network and share information about courses, academic events, projects, etc. has been created through aportal called SEEKHA (www.seekha.in)

5. E-BASTA

e-Basta is a portal where authorized school teachers can compile course material and textbooks and e-books as per a school's preferences, for each class. e-Basta has 329 textbooks, in e-book format, from the National Council of Educational Research and Training (NCERT), for classes 1 to 12, and these are available in Hindi, English, Urdu, and Sanskrit. Few schools have started posting syllabus and course material on the website, for students to download onto tablets/phones/PC [1].

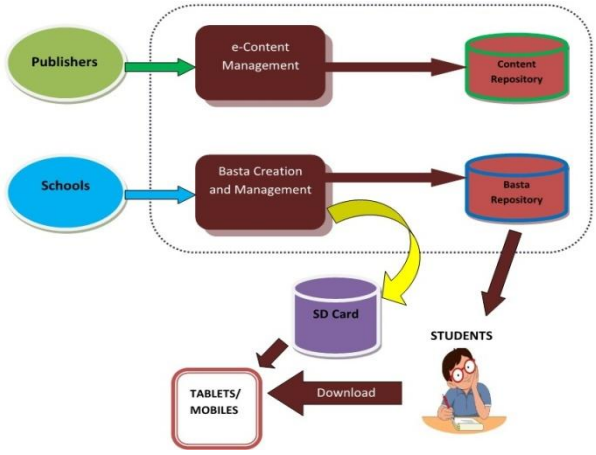

Fig. 1. E-Basta Framework [1]

5.1 The eBasta Portal

The web-based eBasta portal as shown in Fig, 2 is provided to bring the various publishers - free as well as commercial - and the schools together on one platform. In addition, a structure to facilitate organization and easy management of digital resources has also been made, an app that can be installed on the tablet is also available for navigating such a structure [http://www.ebasta.in] brings together three classes of stakeholders: the publishers, the schools, and the students.

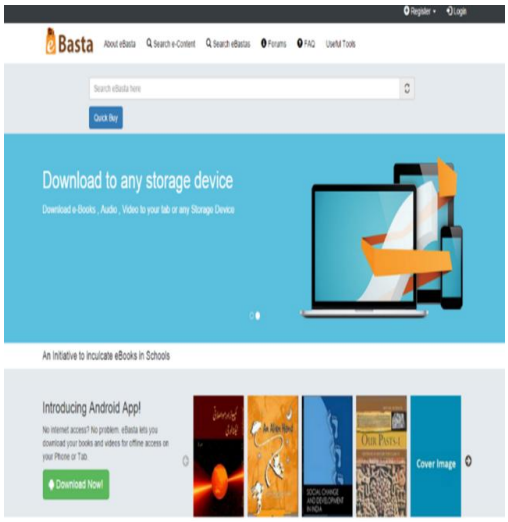

Fig. 2. E-Basta Portal [1]

5.2 eBasta Mobile Application

Students can access the e-basta using the eBasta App. The eBasta App renders it for easy navigation by the student. The content rendered by the app is as defined by the teacher/school in the eBasta structure, irrespective of file-names and the location of the actual files. The eBasta App, freely download-able from the portal, runs on a Android device (version 3.0 or higher). The logo can be customized through the portal.

Fig. 3. eBasta Mobile Application [1]

5.3 Who can use eBasta?

There are broadly three stakeholders of eBasta, who would be brought together on eBasta portal, i.e. students, the schools and the publishers.

Publishers: Publishers, through eBasta would be able to publish their study materials for schools and students by uploading the e-content of the study material. School and teachers would decide what books and chapters would be accessible to their school students. The teachers and school would have all these features within their control panel.

Schools: Respective schools can browse through the available content and select and compile the required study material in electronic format for their students of different classes. This is how they can organize an eBasta for each class of their school and provide access to their students for them to download and use the electronic content.

Students: In order to download the curriculum books from eBasta Portal, students just need to download the eBasta app on their tablets or laptops and continue to download their e-Books. The download and selection of books would already be preset by the school and the publishers.

5.4 Advantages of eBasta

The advantage of using eBasta by the three stakeholders is shown in the table 1.

Table I. Advantage of stakeholders

Schools	Students	Publishers
Teachers can choose and bundle content according to their teaching methods. Facility to add variety of resources – animations, audio books, videos, etc. to eBasta. Faster access to updated editions of contents. Help schools with lesser teaching resources to gain from the resources of better schools.	Reduces the burden of books. Easy Access to structured resources created by School. Long-term reduction in cost. Access to richer resources – animations, audio, videos, etc. Access to eBasta of other schools.	Single point interface for reaching out to thousands of schools, across the country. Overcome the logistical problems of book printing, transport and delivery, especially at remote locations. Significantly shortens the cycle of content editing /changes and facilitates faster release of updates. Support for DRM where needed.

5.5 Technologies used

The portal has been built by using Drupal CMS version 7.33. It has been customized for handling eBasta framework.

The eBasta App has been developed on Java Platform on Android 5.0 API [1].

6. CONCLUSION

E-Learning is the utilization of information and communication technologies to mediate asynchronous as well as synchronous learning and teaching activities. E-Learning facilitates flexibility of time, place and pace of study. Today in this busy, modern, technology based world, people want to continue their work and studies from different places.

Most of the previous Digital India initiatives have been geared towards offering various government services. With eBasta, the Government is now showing that they want Digital India initiative to spread to all walks of life! The e-Basta can be made to suit the prescribed books/resources of schools, as per the syllabus of their school board or school specific requirements.

7. REFERENCES

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