

ICT Initiatives taken up in India (DSE&L, MHRD-GOI)

Information and Communication Technology (ICT) has become, within a very short time, one of the basic building blocks of modern society. Many countries now regard understanding of ICT and mastering the basic skills as part of the core of education, alongside reading, writing and numeracy. The recent efforts of the Government of India (GOI) seek to deepen the use of ICT in almost every sphere of life. The Digital India Campaign (2015) strives to transform India into a digitally empowered society and knowledge economy by focusing on the three vision areas i. Digital Infrastructure as Core Utility to Every Citizen, ii. e-Governance and Services on Demand and iii. Digital literacy and empowerment of citizens. The three cardinal principle of the draft New National Education Policy (2016) viz., access, equity and quality could be served well by harnessing the huge potential of ICT. Any-time and any-where mode of delivering quality education using ICT is one such implication of technology in education. The Govt. of India undertakes various activities to widen educational opportunities promote equity and improve quality of educational processes at all level.

Some of the important ICT initiatives/activities under taken in the recent past in school education sector under the aegis of the MHRD-Gol are listed below:

1. ICT in Education Curriculum for School System

Objectives:

- To use ICT tools, software application and digital resources effectively
- To integrate ICT into teaching-learning and evaluation
- To acquire, organise and create digital resources
- To participate in teachers network
- To evaluate and select resources
- To practise safe, ethical and legal ways of using ICT
- To using ICT for making classroom more inclusive

Intended target/ clientele groups:

Students, school teachers and teacher educators

Achievements:

ICT curriculum for teachers and students has been developed. Students' curriculum was piloted in 588 Navodaya Vidyalayas for one year. MRPs/ KRPs of thirty states were oriented on ICT curriculum for students and teachers and their roll out in respective states. A resource team of 450 MRPs/ KRPs have been created. Now, the work to roll out ICT curriculum in eight states is in progress. As part of this initiative, planning meeting with six states i.e., Karnataka, Andhra Pradesh, Odisha, Telangana, Delhi, Chandigarh, Jammu & Kashmir and Tamil Nadu has been completed. Delhi has developed its ICT curriculum - syllabus and textbook for students with support from NCERT. Support for development of syllabus and textbook for Odisha and Telangana was also provided. RPs/ KRPs of Delhi, Karnataka, Andhra Pradesh and Telangana have been trained separately. Kerala has already developed ICT Curriculum, Syllabus and textbook, which is under implementation. A course portal on MOODLE platform (<http://www.ictcurriculum.gov.in/home>, <http://ncert.org.in/ict/>) has been created and can be accessed for further details. Karnataka State core team (54 members) were trained on the course platform for implementing refresher courses on ICTs in Education online. Karnataka State has trained 3000 science and maths teachers on Induction - 1

course in Phase I. 5000 language and social science teachers are being trained in Phase II. Online refreshers courses will be started shortly. Core mentor team of pre-university/colleges of Karnataka has been oriented for implementing ICT curriculum at Pre-University level.

2. National Repository of Open Educational Resources (NROER)

Objectives:

- To make digital resources available for teachers and students as free and open source material
- To enable the participation of the community in development and sharing of digital resources
- To facilitate the adoption and creation of digital resources in different Indian languages

Intended target/ clientele groups:

Students, school teachers, teacher educators and community at all level of school education

Achievements:

NROER both online (<http://nroer.gov.in/welcome>) and offline (School Server) have been designed. Till date a total of 10693 files including 245 collections, 420 documents, 92 interactive, 1458 audios, 2582 images and 5912 videos are uploaded. CIET-NCERT has conducted 12 capacity building programmes on NROER (covering 450 MRPs/KRPs in 30 states) for teachers and teacher-educators and a core group in states and UTs have been created. State/ UTs are being motivated to contribute resources on NROER and create OERs for their own state/ UT. This year KRPs/ MRPs of Telangana and Karnataka state have been oriented to create OER platform, e-content development and creation of metadata. Some of the e-Contents have been translated and available in 29 languages. New section on teachers, interest groups, schools and partner showcase created on NROER(<http://nroer.gov.in/chetana>). Many partners- VigyanPrasar, CCRT, Gandhi Smriti and DarshanSamiti, SCERTs, SIETs, AzimPremji University, IT for Change, Amaze Infotainment Pvt. Ltd., Directorate of Adult Education, Vidya Online, Eklavya, Arvind Gupta toys etc.

3. E-pathshala

Objectives:

- To create e-books of the resources developed by NCERT, SCERT/ SIEs, State boards etc. SIEs in multiple languages and upload on e-pathshala website and disseminate through mobile app (android, iOS and Windows)

Intended target/ clientele groups:

Students, teachers, teacher educators, parents at all level of school education and teacher education

Achievements:

e-Pathshala: a web portal (<http://epathshala.nic.in/>, <http://epathshala.gov.in/>) and mobile apps (Android, iOS and Windows) has been designed and deployed. The portal has 2,865 audios and videos, 650 e-books (e-pubs) and 504 flip books. It has 1,99,11,298 visitors; 45,57,246 total YouTube views, 9,82,455 app downloads and rating of 4.3 out of 5 on Google play store and 4.5 out of 5 on windows store. CIET-NCERT has conducted 12 capacity building programmes on e-Pathshala and digitisation of text books (covering 450 MRPs/KRPs in 30 states) for teachers and teacher-educators and a core group in states and

UTs have been created. CIET-NCERT has provided support to the state of Haryana to digitise its textbooks and create a mobile App i.e., MERI EPUSTAK to disseminate these e-books to all stake holders. The states of Andhra Pradesh, Delhi, Haryana, Karnataka, Telangana and Uttar Pradesh have started text book digitisation with support from CIET-NCERT and have contributed 65 e-books on e-pathshala.

Branding of e-Pathshala - “**PINDICS**” app. The app has a rating of 4.8 out of 5 on Google Play Store. In all 850 users have downloaded the app from Google Play Store.

E-pathshala has been listed/available on the UMANG App of Govt. of India.

4. E-content Development:

Objectives:

- To develop e-contents - image, audios, videos, interactive, graphics, animations, digital books, digital maps etc. for dissemination through various modes covering entire syllabus developed by NCERT for all stages of school education.

Intended target/ clientele groups:

Students, teachers, teacher educators, parents at all level of school education (classes 1 to 12) and teacher education

Achievements:

In total, 3334 digital resources have been developed in all subjects areas (EVS, Science, Social Science, Mathematics and Languages). These resources are being validated out on regular intervals and uploaded on NROER and e-pathshala. Besides, these are being disseminated through DD-1, SWAYAM Prabha DTH TV channel and SWAYAM MOOCs for school education. Conducted 17 capacity building programmes on e-content development (covering 716 MRPs/KRPs in 30 states) for teachers and teacher-educators and a core group in states and UTs have been created.

5. MOOCs on SWAYAM PLATFORM

Objectives:

- To design and offer online courses for students, teachers and teacher educators
- To develop skill oriented courses and offer through online mode
- To promote quality education and lifelong learning through SWAYAM MOOCs

Intended target/ clientele groups:

Students, teachers, teacher educators and community at all levels of school education

Achievements:

MHRD, GoI has launched a Massive Open Online Courses (MOOCs) platform popularly known as SWAYAM (Study Webs of Active learning for Young Aspiring Minds) on 9th July, 2017. The portal is offering various online courses for school education and higher education. NCERT has started development of course modules for Massive Open and Online Course (MOOCs) for school education system in 12 subject areas (Accountancy, business studies, biology, chemistry, economic, history, geography, mathematics, physics, political science, psychology and sociology) for classes IX-XII. Eight courses have been uploaded on SWAYAM platform (<https://swayam.gov.in/>). So far, 5837 students are enrolled in the eight courses. A total of 161 text modules of the remaining 16 courses are finalised.

CIET-NCERT has been assigned the task of developing e-resources for Master of Education (M.Ed.) course jointly with Allahabad University; this project is funded by UGC. So far, 242 e-

text modules and 138 video programmes have been developed for access through web portals of INFLIBNET, Vidya-Mitra, e-Acharya and SWAYAM. One course (Educational Administration, Management and Leadership in School Education) is uploaded on SWAYAM. Besides, an online course on action research for teachers is being conducted in regular intervals in the MOODLE platform (<http://ictcurriculum.gov.in/course/index.php?categoryid=125>). Post Graduate Diploma in Guidance and Counselling for in-service teachers is also offered through the same course portal. So far 301 learners are enrolled in the course.

6. SWAYAM PRABHA (Kishore Manch) DTH-TV Channels:

Objectives:

- To develop curriculum based course content covering diverse disciplines and telecast those on SWAYAM PRABHA DTH-TV Channel on 24x7 basis.
- To provide lifelong learning opportunities to Indian citizens in India and Abroad
- To telecast need based educational programmes

Intended target/ clientele groups:

Students, teachers, teacher educators and community at secondary and senior secondary levels of school education

Achievements:

The Ministry of Human Resource Development (MHRD)- Govt of India has developed a learning plan for utilization of satellite communication technologies for transmission of educational e-contents through 32 National Channels i.e. SWAYAM PRABHA DTH-TV. CIET-NCERT is the national coordinator for one DTH TV channel i.e., Kishore Manch (#32) and has started feeding a 24x7 educational TV channel w.e.f. 15 August, 2016. Everyday four hour fresh slot is telecast and repeated six times in 24 hours to provide learning opportunities for the stake holders. These channels are run from BISAG, Gandhi Nagar, Gujarat. So far **381** days (**381 days x 4 hrs = 1524 hrs**) of capsuling for daily transmission (except Sunday) have been prepared and sent to BISAG, Gandhi Nagar. Such slots are sent in advance and CIET-NCERT has sent transmission capsules till 31st August, 2017. For obtaining regular feedback from the stakeholders, email ids ciet.kishoremanch@gmail.com, swayamprabha@ciet.nic.in, kishoremanch@ciet.nic.in has been created. Till date several feedback mails have been received and shared with the production and transmission teams for follow up. Besides, transmission schedules are prepared for each month and shared with BISAG, Gandhi Nagar and the National Coordinator and also disseminated on CIET-NCERT website. The transmission quality of the programmes is monitored by CIET. So far no technical problems are reported during the telecast of programmes on SWAYAM Prabha Channel.

7. Implementation of ICT component under the General Education Quality Analysis/Diagnosis Framework (GEQAF) in India (GEQAF is developed by UNESCO)

As a part of implementation of the GEQAF developed by UNESCO, the NCERT, New Delhi organised a five day "International ICT Forum on Adopting an ICT perspective to Education and Learning" from 31 October to 4 November, 2016 at New Delhi. In all 184 participants from States/UTs, national and International agencies attended this programme organised in collaboration with UNESCO and Google. The participants and resource persons from 14 countries participated and deliberation on various components on ICT in Education and Learning and shared best practices on OER, Mobile applications, ICT pedagogy Integration etc.

8. All India Children's Educational Audio Video Festival and ICT Mela-2017

The CIET-NCERT organised All India Children's Educational Audio Video Festival and ICT Mela-2017 from 5-7, April, 2017 at New Delhi. In all 169 entries received on educational audio, video and new media/ICT were received, screened and discussed during the festival by experts including Producers/Directors, Academics, Camera personnel, Technical persons etc. The ICT Mela was organised to showcase and disseminate best practices (OER, Mobile app, e-contents, 3D Printing, e-books, Augmented Reality, low cost teaching-learning technology solutions etc.), which attracted more than 1000 visitors across the country. Best entries in all three categories were also awarded with trophy and cash awards. This event is organised annually.

(A.P. Behera)
Professor &Head
DICT &Training Division
I/c Joint Director-CIET

Under Secretary
C&P-NCERT