

OPEN COURSE WARE INITIATIVES IN INDIA

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Abstract *In today fast growing world, students and scholars can not sit depending upon the printed course material. Open course material which is globally available online is the need of the hour. It provides study material on various topic posted by the scholarly faculties. This paper gives a brief idea about the Indian institutes that provides such materials online.*

Keywords: OCW, Digital Material, Virtual Classrooms, E-learning

INTRODUCTION

Open Course Ware, or OCW, is a term applied to course materials created by universities and shared freely with the world via the internet. Open Courseware is nothing but the repository of the study and learning materials in digital form in the web, which is open for every user, i.e. Open Access. These repositories envisage to store, index, preserve, distribute and share the digital learning resources with any time access offering interoperability. On the other hand, e-learning covers a myriad set of applications, and processes such as computer based learning, web-based learning, virtual classrooms, etc. What is most significant about the method is that it ensures faster learning at comparatively reduced cost and gives access to more learning resources.

- It is a free and open digital publication of high quality educational materials, organized as courses.
- It is available for use and adaptation under an open license.
- It does not typically provide certification or access to instructors.

OCW IN INDIA

CEC Learning Object Repository

Consortium for Educational Communication (CEC) is an inter-university centre on electronic media, established by the University Grants Commission (UGC). The CEC in coordination with its 17 Educational Multimedia Research Centres, has been producing television programmes in various subject categories in English, Hindi and regional languages. Some of the audio-visual programmes are based on syllabus-based topics at the school, polytechnic, college and university levels. Produced educational programmes are broadcast on the national educational television channels such as Vyas Higher Education Channel, Gyan Darshan, and Doordarshan. All produced educational programmes are being regularly quality-checked before the telecast at CEC.

To check the quality of the programmes produced by educational media centres and CEC, regular Preview Committee meetings are organized in various subject categories where experts are called to review programmes, which are then revised by the respective Centre before the telecast, based on comments from the Committee. The television programmes produced in CEC and broadcasted in educational channels are reusable. Thus, CEC established the Learning Object Repository (LOR) and the Digital Video Repository (DVR) to provide worldwide access to these qualitative learning resources. The LOR is a bank of short duration reusable learning objects for special benefits to students and teachers for face-to-face learning as well as to other users globally. The streaming video technique is used for online viewing of these learning objects. Subject, topic, title of the learning object, and keywords can search the LOR portal. This portal can also be navigated through subject categories.

E-Gyankosh

Indira Gandhi National Open University (IGNOU) is a mega open university that offers distance and open education to millions of learners in India and other countries. IGNOU produces self-instructional study materials for various programmes and also hosts a number of educational broadcasting channels. IGNOU has initiated the establishment of a National Digital Repository of learning resources *eGyankosh*. This initiative has a partner institution named Distance Education Council; Ministry of Human Resource Development, Government of India, has supported India EDUSAT and it. It has an allied project Sakshat, One Stop Portal on Indian Education. This repository envisages to store, index, preserve, distribute and share the digital learning resources of open and distance learning (ODL) institutions in the country:

The repository supports seamless aggregation and integration of learning resources in different formats such as self-instructional study materials, audio-video programmes, and

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archives of radio and television-based live interactive sessions. The repository facilitates any time access to its collections (24×7×365), offering interoperability and federated searching facility. The decentralized model of the repository supports multiple submission points facilitating submission of content from remote locations. The collection can be searched and browsed by subject, title, and author.

Presently, this repository has two communities, i.e. India and the Pan African e-Network. The *India* community has sub-communities, based on different academic divisions in IGNOU such as School of Agriculture, School of Computer and Information Sciences, School of Continuing Education, School of Education, School of Engineering and Technology, School of Health Sciences, School of Humanities, School of Law, School of Management Studies, School of Sciences, and School of Social Sciences. Under each sub-community, the user can get online access to full-text content of self-instructional study materials offered by this academic division. The community *Pan African e- Network* provides access to self-instructional study materials of the Master of Business Administration (MBA) programme.

The Indo-German eGurukul on Digital Libraries

The Indo-German eGurukul on Digital Libraries is a collaborative project of DRTC and Goethe- Institute in New Delhi to facilitate self-paced learning on digital libraries. Presently this e-learning portal has the following modules:

- Introduction to Digital Libraries
- Digital Library Architecture and Digital Library Content
- Digitization Process
- Digital Preservation
- Metadata and Interoperability
- Digital Collection
- Digital Library Management and Access Rights
- Knowledge Organization and Retrieval
- Digital Library Services
- Evaluation and Digital Library Case Studies

The Indian digital library experts, in collaboration with their German counterparts, have developed the content of these modules. Users follow a free registration process for access to different learning modules and participation in the User Interaction Forum.

National Programme on Technology Enhanced Learning (NPTEL)

This is an open courseware initiative by seven Indian Institutes of Technology (IITs) and the Indian Institute of

Science (IISc). The main objective of this programme is to enhance the quality of engineering education in the country by developing more than 200 curricula-based video and web courses. Premier institutions of India are participating in this innovative programme for the production and dissemination of quality courseware in the areas of engineering and technology. Already a number of open courseware is now available through its website. A discussion forum for each web course is available. The open courseware and discussion threads can be accessed through the user-friendly portal interface. The video courses are at first broadcast through the Eklavya Technology Channel a technical education channel for television. This Initiative has constituted six Engineering Groups, which are responsible for production of video courseware:

- Civil Engineering Group
- Computer Science and Engineering Group
- Core Science and Engineering Group
- Electrical Engineering Group
- Electronics and Communication Engineering Group
- Mechanical Engineering Group

The programme is systematically structured through the Technology Enhanced Learning (TEL) Committee, Programme Implementation Committee (PIC), National Programme Committee (NPC) and subject-level Expert Groups at the national level and institutional levels. This programme addresses harmonization of engineering curricula across the country as well as the shortage of quality teaching faculty at the second and third tier (i.e., government-supported and self-supported) institutions.

NCERT Online Textbooks

NCERT is an apex resource organization set up by the Government of India to assist and advise the Central and State Governments on academic matters related to school level education. NCERT publishes school textbooks, mainly in English, Hindi and Urdu. It has initiated a step towards making school textbooks freely available on the Internet for students and teachers through its website (www.ncert.nic.in). Most of the textbooks available in this portal are in new edition, based on the *National Curriculum Framework 2005*. The educational planners in NCERT expect that a variety of pedagogical possibilities would open up for students and teachers across the country through this initiative. It is also expected that this effort will lead to a situation where teachers begin to adopt a more modular approach, rather than a sequential approach to teaching and learning, through online access to a variety of teaching and reference materials. This portal provides easy navigation to textbook chapters by title/subject of the book for a particular class. The

textbooks available here are written in English, Hindi and a few in Urdu.

UNESCO-SALIS e-Learning Portal

The UNESCO-SALIS e-Learning Portal is a collaborative project of Society for the Advancement of Library and Information Science (SALIS) and UNESCO office in New Delhi. The project aims to raise awareness and enhance information literacy competency skills of laymen as well as information professionals and educators in the South Asian sub-region. Its objectives are fully in line with UNESCO's mandate to bridge the digital divide and UNESCO's vision of knowledge societies. Presently this e-learning portal has following modules:

- Information Communication Technology (ICT)
- Information Literacy
- Information Literacy Models and Standards
- Lifelong Learning and Development of Life Skills
- Information Literacy Assessment
- Information Services for the Disabled People
- Freedom of Information/Right to Information
- Sample Information Literacy Programmes for
- School Library
- College/University Library
- Special Library
- Public Library
- Community Information Centres

The information literacy competency skills imparted here, have been derived from the existing international standards, adopted by the UNESCO, the International Federation of Library Associations and Institutions (IFLA), American Library Association (ALA), and other professional societies. Indian library experts, in collaboration with lifelong learning experts, have developed the content of the modules in this eLearning portal. In order to access the different learning modules and participate in the Course Discussion Forum, a first-time user should opt for the user registration process. The learning system generates the unique login name and password, which are required for subsequent access.

Vidya Vahini — An Intranet and Internet for Schools

Out of 11 lakh schools in the country, there are 60,000 senior secondary schools in the Government sector, which have basic infrastructure like science lab, science and mathematics teachers, electricity, telephone and furniture. Vidya Vahini Programme proposes to connect 60,000 Government and

Government funded Senior Secondary Schools on Intranet and Internet by providing them computer lab to facilitate IT education, access to Internet, online library, academic services, web broadcast, e-learning and sharing library resources. The programme focuses on -

- Providing Information & Communication Technology (ICT) infrastructure;
- Training of the teachers to use ICT for imparting education;
- Providing different learning resources which include related educational tools, course curriculum and other learning material. The emphasis of the programme is to provide course content in the local languages. The programme is to facilitate IT education and computer aided learning; Access to Internet; Online library; Academic services; Web broadcast; E-learning and Sharing library resources

The students and teachers of the schools can avail the facilities of Video conferencing, Access to databases, Content filtering, Course curriculum as per CBSE/State Govt. approved syllabus, Instant messaging, Online Libraries Digital Library, Academic services, Web broadcast and e-learning, E-mail. A Central Portal (www.vidyavahini.ernet.in) has been hosted. The Portal contains Education material; Programming tools; Software tools for teachers; Software tools for students; Language tools, Filtering software, and Course curriculum.

MHRD: Sakshat

Sakshat, designed and developed by IGNOU for the Ministry of HRD, offers eBooks, eJournals, Digital Repository, Scholarship, Audio/Video Library having electronic resources (animations), Reference Material created by NIOS, IGNOU, etc. and Virtual Class. The study materials are mostly been classified on the basis of class, subject and topics. Sakshat is a landmark initiative of the Ministry of Human Resource Development (MHRD) to develop a One Stop Education Portal for addressing all the education and learning related needs of students, scholars, teachers and lifelong learners. The portal envisages providing one stop solution to educational requirements of learners ranging from K to 20 covering all fields of study including vocational education and learning for life skills.

MAIN OBJECTIVES OF THE PORTAL ARE

- Provide barrier-free web based learning resources uniformly across the country;
- Develop a repository of world class interactive multimedia learning content;

Table 1: List of Open Course Ware Initiatives

Sr. No.	Open course ware	Principal Implementing Agency	URL	Software used	Metadata scheme
1	CEC Learning Object Repository	Consortium for educational communication, New Delhi	www.cec_lor.edu.in	Self Developed	Self Developed
2	E Gyankosh	Indira Gandhi National Open University	www.egyankosh.sc.in	D Space	Dublin core
3	Indo-German e Gurukul on Digital Libraries	Documentation Research & Training Center, Indian statistical institute, Bangalore	http://drtc.isibang.ac.in/	Moodle	Dublin core
4	National Programme on Technology Enhanced Learning (NPTEL)	Indian Institute of Technology, Madras	www.nptel.iitm.ac.in	Self Developed	Self Developed
5	NCERT Online Textbooks	NCERT, New Delhi	Ttp://www.ncert.nic.in	Self Developed	Self Developed
6	UNESCO- SALIS e Learning Portal	SALIS	http://salisonline.org	Moodle	Dublin core
7	Vidyavahini	ERNET, India	www.vidya-vahini.com	Dspace	Dublin core
8	Sakshat	Ministry of human resource development, India	www.sakshat.ac.in	Dspace	Dublin core

- Nurture learners by providing web-based guidance and encouragement through synchronous and asynchronous modes of interaction;
- Help in honing skills and knowledge through online mentoring and testing services;
- Provide a platform for sharing of knowledge and experience among teachers and learners;
- Regularly monitor the progress of scholars and other learners based on the performance in customized online tests;
- Facilitate learners to make informed decision on choice of profession through online career counseling facility;
- Nurture those who aspire for excellence.

Sakshat website developed at IGNOU represents three tier architecture with presentation logic developed using HTML, JavaScript, and ASP.Net, business logic written in VB.Net and C# and the data repository is running on SQL Server 2000.

THE PORTAL HAS THE FOLLOWING FIVE FUNCTIONAL MODULES:

- **Educational Resources:** These help the learner to explore through the vast knowledge base available on the net in the form of e-books, e-journals, digital repository, digital library etc. Most of the sources listed are open source material.
- **Scholarship:** This module is specifically meant for scholarship holders at national and state levels to keep

track of their progress and keep them informed about other scholarship opportunities through news feeds and announcements.

- **Testing:** This module enables the learners to test and upgrade their skills and knowledge through online testing, skill upgradation tools, and guided learning environment.
- **Superachiever:** This is a special facility for those who aspire for excellence. Links are provided to various Olympiad sites to help them in testing and upgrading their capabilities to face competitive examinations in life.
- **Interact:** This module provides a platform for the learners to interact with their teachers, mentors and peer group in real time or asynchronously. Tools provided for interaction includes, e-mail, weblogging, webcasting, online chat, discussion forum. Other facilities include career counseling and a platform for uploading content and quiz by teachers.

OPEN COURSEWARE INITIATIVES

During present research, 8 Indian Open Courseware (OCW) initiatives were located and examined to know their various aspects regarding metadata. Table No. 1 and 2 show the details.

From the above table, it has been observed that out of 8 Indian OCW initiatives 5 follow Dublin Core standard; and 3 initiatives have developed their own standards. 3 Indian initiatives use Dspace software; 2 use Moodle and 3 have developed their own software.

Table 2: Metadata Elements used by Open Course Wares

Sr. No.	Open course ware	Collection	Metadata elements
1	CEC Learning Object Repository	Digital video	Subject, topic, title, keyword
2	E Gyankosh	Study materials, audio video programmes, archives of radio and television based sessions	Subject, title, author
3	Indo-German e Gurukul on Digital Libraries	Learning on digital libraries	Subject, keyword, title, author, language
4	National Programme on Technology Enhanced Learning (NPTEL)	Engineering literature	Title, subject, keyword, topic
5	NCERT Online Textbooks	School textbooks in English, Hindi, Urdu	Subject, topic, title, language, keyword,
6	UNESCO- SALIS e Learning Portal	Literature on Library & Information Science	Title, subject, keyword, author
7	Vidyavahini	Literature useful for school students	Topic, subject, keyword, language, title
8	Sakshat	Encyclopaedia, dictionaries, rare books and other reference material.	Topic, subject, keyword, language, title

From the above table, it has been observed that open courseware initiatives are multidisciplinary in nature providing various kinds of documents useful for education. Some open courseware initiatives like NPTEL and UNESCO-SALIS are subject specific. Documents can be searched through various metadata elements like subject, keyword, author, title and topic.

Findings

- 8 Indian Open Courseware (OCW) initiatives were located and examined to know their various aspects regarding metadata.
- Open courseware initiatives are multidisciplinary in nature providing various kinds of documents useful for education. Some open courseware initiatives like NPTEL and UNESCO-SALIS are subject specific. Documents can be searched through various metadata elements like subject, keyword, author, title and topic.
- Out of 8 Indian OCW initiatives 5 follow Dublin Core standard; and 3 initiatives have developed their own

standards. 3 Indian initiatives use Dspace software; 2 use Moodle and 3 have developed their own software.

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- UNESCO-SALIS e-Learning Portal. <http://salisonline.org>
- Vidya Vahini- An Intranet and Internet for Schools. www.vidya-vahini.com
- MHRD: Sakshat. www.sakshat.ac.in