Open Courseware initiatives for e-learners in India

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ABSTRACT

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. In India, a number of institutions are digitizing their course materials and a good number of open courseware have been established e.g. eGyankosh-a National Digital Repository, CEC Learning Object Repository, Indo-German eGurukul on Digital Libraries, NPTEL, NCERT Online Textbooks, UNESCO-SALIS e-Learning Portal, etc. This paper presents a scenario of the Open Courseware initiatives in India that can be helpful and necessary to the e-learners.

Keywords: Open Courseware, Open Access, Learning Object Repository

1. Introduction

India is in the forefront of the developing world as well as the South Asian region in terms of both economic growth and scientific productivity. The National Knowledge Commission (NKC) is a high-level advisory body to the Prime Minister of India, with the objective of transforming India into a knowledge society. It covers sectors ranging from education to e-governance in the five focus areas of the knowledge paradigm:
- ✓ Easy access to knowledge
- ✓ All levels and forms of knowledge
- ✓ Effective creation of knowledge
- ✓ Applications of knowledge systems
- ✓ Services like e-governance

The NKC Working Group on Open Access and Open Courseware has strongly recommended for establishment of open courseware repositories for countrywide dissemination of quality courseware. This would facilitate easy and widespread access to high quality educational resources and drastically improve the teaching paradigm for all our students. Learning material contained in an Open Courseware provides learners an opportunity to gain knowledge beyond their routine classroom environments. These are in the digital form which can be accessed online, thus breaking the barriers of time and distance.

2. Open Courseware

The concept of open access evolved during 1991 due to the realization of the need to facilitate scholarly scientific communication. Open access to literature means online access without charge to readers or libraries. Committing to open access means dispensing with the financial, technical and legal barriers that are designed to limit access to literatures to paying customers. Open access is a cost effective way to disseminate and use of information.

Courseware are free and open digital publication of high quality educational materials, organized as courses that is provided to the public without charge via the Internet i.e. open access. An Open Courseware site provides open access to the primary teaching materials for courses taught at educational institutions, enabling educators to draw on the materials for teaching purposes, and students and self-learners to use the materials for the development of their own personal knowledge. The primary characteristics of Open Courseware are that it is offered for free, does not lead to a degree, and does not grant access to faculty. The Open Courseware consists of syllabi, online presentations, and reading recommendations, which makes it particularly handy for use by other faculty.

4. Software used in developing Open Courseware

Some important and free software are mentioned here-

4.1 Moodle

Moodle is a course management system (CMS). It is a free, Open Source software package designed using sound pedagogical principles, to help educators create effective online courses with opportunities for rich interaction. Modular design means that people can develop additional functionality. Anyone can download and use it on any computer. It can scale from a single-teacher site to a University with 200,000 students. It is also known as a Course Management System (CMS), or Learning Management Systems (LMS), or Virtual Learning Environment (VLE).

Web Address: http://moodle.org

4.2 Greenstone

Greenstone is a suite of software for building and distributing digital library collections. Greenstone is produced by the New Zealand Digital Library Project at the University of Waikato, and developed and distributed in cooperation with UNESCO and the Human Info NGO. It is open-source, multilingual software, issued under the terms of the GNU General Public License.

Web Address: http://www.greenstone.org

4.3 DSpace

DSpace is a digital library system designed to capture, store, index, preserve, and redistributes the intellectual output of a university's research faculty in digital formats. It was developed jointly by Hewlett Packard (HP) Laboratories and Massachusetts Institute of Technology libraries.

Web Address: http://www.dspace.org

4.4 E-Prints

E-Prints is also an example of open source software for institutional repositories. It was developed at the University of Southampton and was designed initially to create a pre-print institutional repository for scholarly research, but is now used for other material including reprints, technical reports, conference publications or other means of electronic communication.

Web Address: http://www.eprints.org

3. Workflow for developing an Open Courseware

In an Open Courseware the learning materials are found in digital formats. The term digital format implies any kind of bit stream with the extensions like .doc, .pdf, .ppt, .xls, .dat, .mp3, .mpg, .jpg, .bmp, .gif, etc. If a document is created in digital environment and available in a digital format, it can be called a 'born-digital' object. On the other hand, if the document is only available in physical format, it can be converted into digital format through the process of digitization. An institution has to plan a digitization project of learning materials that aims to establish an Open Courseware with a robust architecture and structure.

After converting analogue objects into digital objects, there will be a need of quality control that may check quality of digital masters. The digital masters can be edited to remove inaccuracies, inconsistencies, errors and noises. The digital masters should be stored in appropriate file formats and should use appropriate feature (e.g. resolution, size, etc.). Metadata elements are required to describe different attributes of a document. Metadata helps to describe and to identify a document. After metadata creation, the learning objects are to be integrated into a learning objects repository or into an Open Courseware. This Open Courseware can be made accessible through online mode using Internet or Intranet technologies. If it is made accessible through Internet, metadata harvesters and search engines should be allowed to index the contents of learning objects.
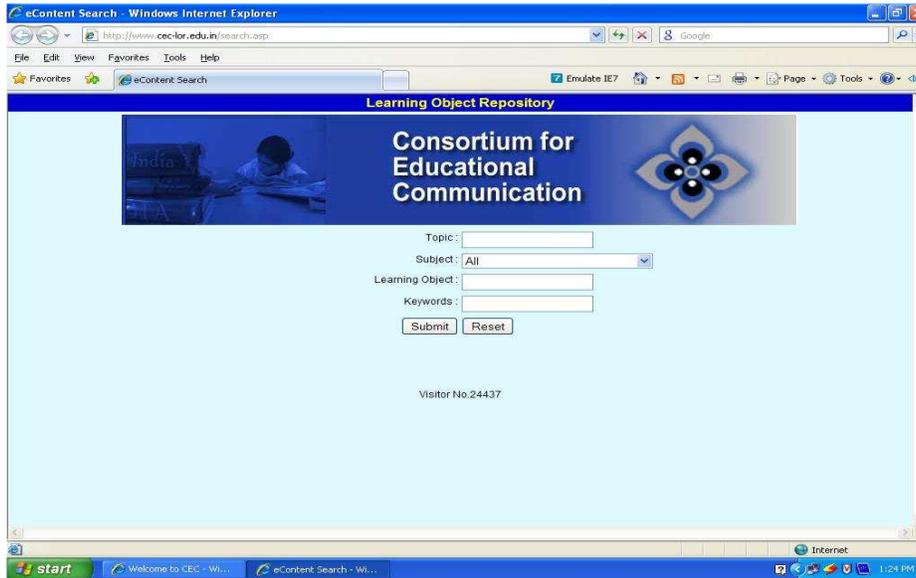
5. Open Courseware initiatives in India
5.1 eGyankosh

Indira Gandhi National Open University (IGNOU) is a national open university that offers distance and open education in India and other countries. IGNOU has initiated the establishment of a National Digital Repository of learning resources eGyankosh. This repository envisages to store, index, preserve, distribute and share the digital learning resources of open and distance learning (ODL) institutions of 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 archives of radio and television-based live interactive sessions.


5.2 CEC Learning object repository

Consortium for Educational Communication (CEC) is an inter-university centre on electronic media, established by the University Grants Commission (UGC). CEC's Learning Object Repository (LOR) is an Open Courseware initiative having educational resources in different subjects like Archeology, Biology, Botany, Chemistry, Commerce, Computer Science, Economics, Education, English, Fine Arts, etc. Users have the facility to browse the LOR by using various options such as Topic, Subject, Learning Object, Keywords, etc.


5.3 National Programme on Technology Enhanced Learning (NPTEL)

This is an Open Courseware initiative by seven Indian Institute of Technology (IIT) and the Indian Institute of Science (IISc). It is funded by the Ministry of Human Resource Development (MHRD), Government of India. Six major engineering disciplines have been covered in this project so far (NPTEL Phase I) at the undergraduate (B.E./B.Tech) level. In addition, a number of core curriculum courses common to all engineering programmes such as mathematics, physics, chemistry, management, electronics, language etc. have also been included.
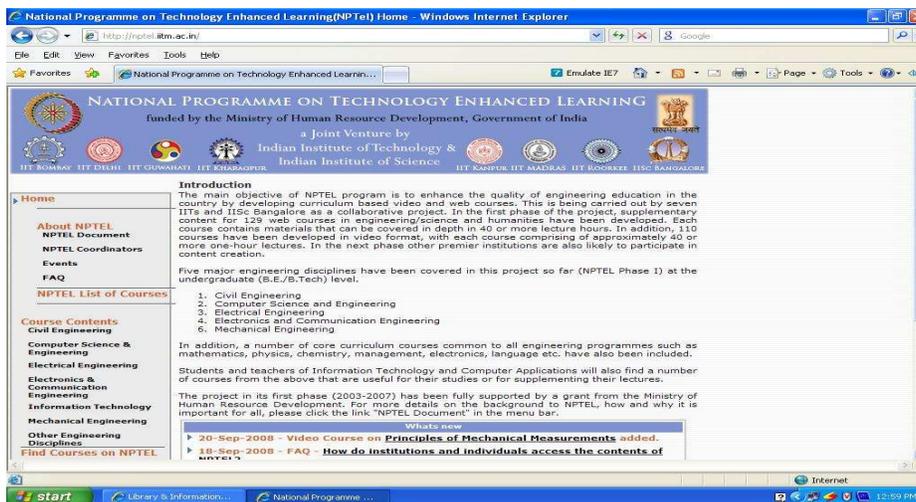

5.4 NCERT Online Textbooks

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NCERT is an apex resource organization set up by the Government of India to assist and advice the Central and State Governments on academic matters related to school level education. NCERT publishes school textbooks and it has initiated a step towards making school textbooks freely available on the internet for students and teachers through its website. This portal provides easy navigation to textbook chapters by title/subject of the book for a particular class. The textbooks available there are written in English, Hindi and a few in Urdu.
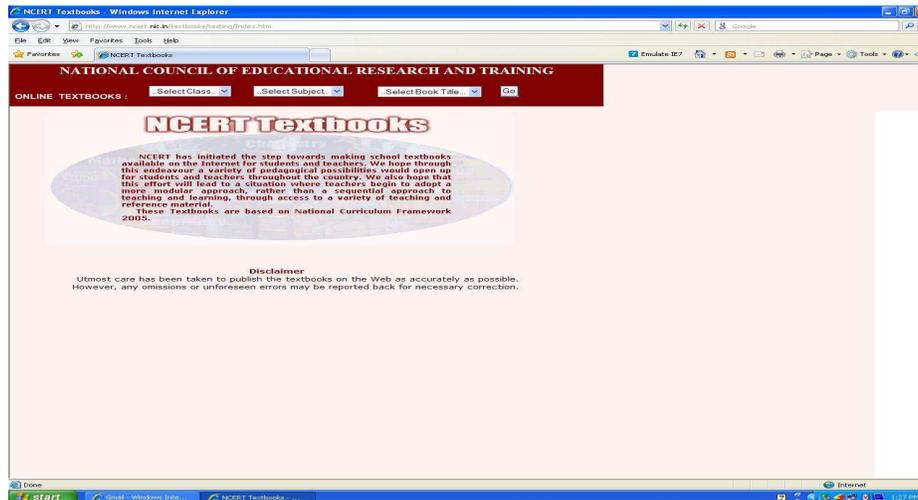
5.5 UNESCO-SALIS e-Learning Portal

The Indian Society for the Advancement of Library and Information Science (SALIS), in collaboration with UNESCO, launched the e-Learning Portal for Awareness Raising on Information Literacy. The Portal aims to raise awareness, sensitize and enhance information literacy competency skills of common information users 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. The portal will be developed using Moodle Open Source software, an internationally renowned Courseware Management System (CMS) or Virtual Learning Environment (VLE).
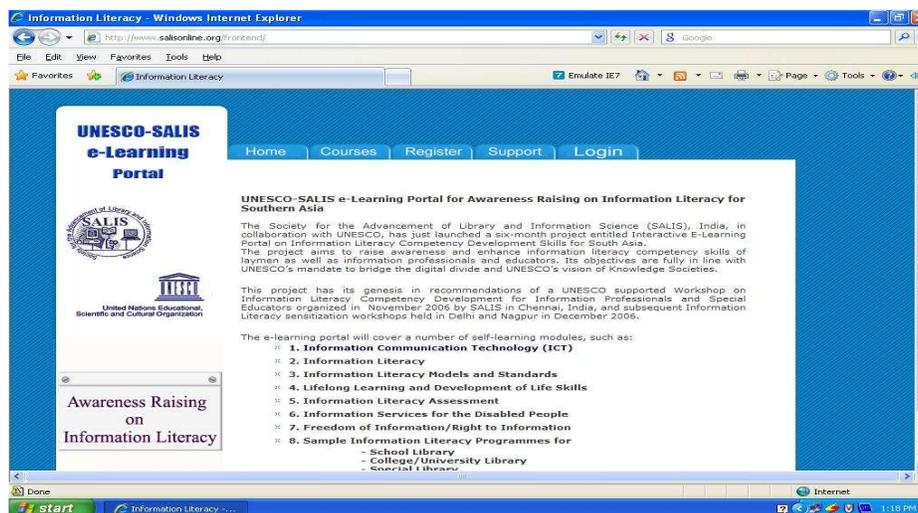
5.6 Indo-German eGurukul on Digital Libraries

The Indo-German eGurukul on Digital Libraries is a collaborative project of Documentation Research and Training Centre (DRTC), Bangalore and Goethe-Institut in New Delhi to facilitate self-paced learning on digital libraries. Presently this e-learning portal has various modules covering different aspects of digital libraries. The Indian digital library experts, in collaboration with their German counterparts , have developed the content of these modules.

Table: Major Open Courseware (OCW) initiatives in India

OCW initiatives	Host Institution	Funding Body	URL	Software used
eGyankosh-a National Digital Repository	Indira Gandhi National Open University (IGNOU)	Ministry of Human Resource Development, Govt of India	www.egyankosh.ac.in	Dspace
CEC Learning object repository	Consortium for Educational Communication (CEC)	University Grants Commission (UGC)	www.cec-lor.edu.in	
National Programme on Technology Enhanced Learning (NPTEL)	Indian Institute of Technology (IIT) and the Indian Institute of Science (IISc)	Ministry of Human Resource Development, Govt of India	www.nptel.iitm.ac.in	
UNESCO-SALIS e-Learning Portal	Indian Society for the Advancement of Library and Information Science (SALIS)	UNESCO	www.salisonline.org/frontend	Moodle
Indo-German eGurukul on Digital Libraries	Documentation Research and Training Centre (DRTC)	Goethe-Institut in New Delhi	http://drtc.isibang.ac.in/mmb/	Moodle

6. Benefits

Benefits of an Open Courseware is multidimensional which are discussed here under-

6.1 Institutional benefits

The qualitative learning objects can be shared by learners of different programmes within open and distance learning (ODL) institution and also can be shared by learners of different ODL institutions within or outside the country. Open Courseware improves recruitment by helping the right students find the right programs at the institution and builds global awareness of the institution's unique educational approach and curriculum.

6.2 Faculty benefits

Open Courseware builds awareness of the unique contributions to the field and duplication of efforts of preparing self-learning study materials can be minimized. And also builds global awareness of the institution's unique educational approach and curriculum.

6.3 Just in time and any time access

The Open Courseware facilitates any time access to its collections whenever and wherever the learner needs.

6.4 Eliminate travel costs

Travel has historically been the most costly aspect of corporate training. Open Courseware eliminates travel costs and the time away from the job that travel mandates.

6.5 Low cost delivery

An enterprise workforce can have access to hundreds of courses for a fraction of the cost of classroom courses.

6.6 Always up-to-date

With Web-based learning and performance support resources residing on a single Web server, updates are immediately available to all world wide.

7. Conclusion

Open Courseware is still a new and evolving concept immensely beneficial to the learning community including the benefits for the teachers. In India the Open Courseware can prove to be a boon for those learners who are not in the main stream and can be greatly benefited by using the course content whenever they need. The Open Courseware can also greatly contribute in strengthening the educational infrastructure of the institute providing distance education. But in India only a few ODL Institutes have started Open Courseware project. Indian academics can play a significant role in creating Open Courseware materials for the students to propagate the teaching and learning process diluting the limitations of traditional educational setup and begin a new culture of "Learning beyond Classroom".

The ODL institutions of a country like India can form a consortium that will plan, coordinate and implement a national level learning objects repository or digital library for the benefits of distance learners of the country. Each individual member institution of the consortium should share its learning objects, publications, theses, dissertations and other scholarly materials. This way a wide range of collection of learning objects and other scholarly materials can be developed. This repository should be made available to the learners and accessible through Intranet and Internet. A well organized Open Courseware project can disseminate and preserve for wider audience in future also.

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