

# Open Courseware Initiatives for E-Learners in India

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*Apurba Jyoti Majumder  
Gautam Kumar Sarma*

Open courseware is nothing but the repository of study and learning materials in digital form on the Web which is open to every user, i.e., it has 'open access'. These repositories engage in the storing, indexing, preserving, distributing and sharing of digital learning resources with any-time access offering inter-operability. On the other hand, e-learning covers myriad sets 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 a 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, 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 e-learners.

**Key Terms:** Open Courseware, Open Educational Resources, Learning Object Repository

## INTRODUCTION

India is in the forefront of the developing world and specially in 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 areas in focus in 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 Educational Resources has strongly recommended the 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 with 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.

## **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 information.

Courseware is free and open digital publication of high-quality educational materials, organized as courses which are provided to the public without charge via the Internet. 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. It consists of syllabi, online presentations, and reading recommendations, which makes it particularly handy for use by other faculties.

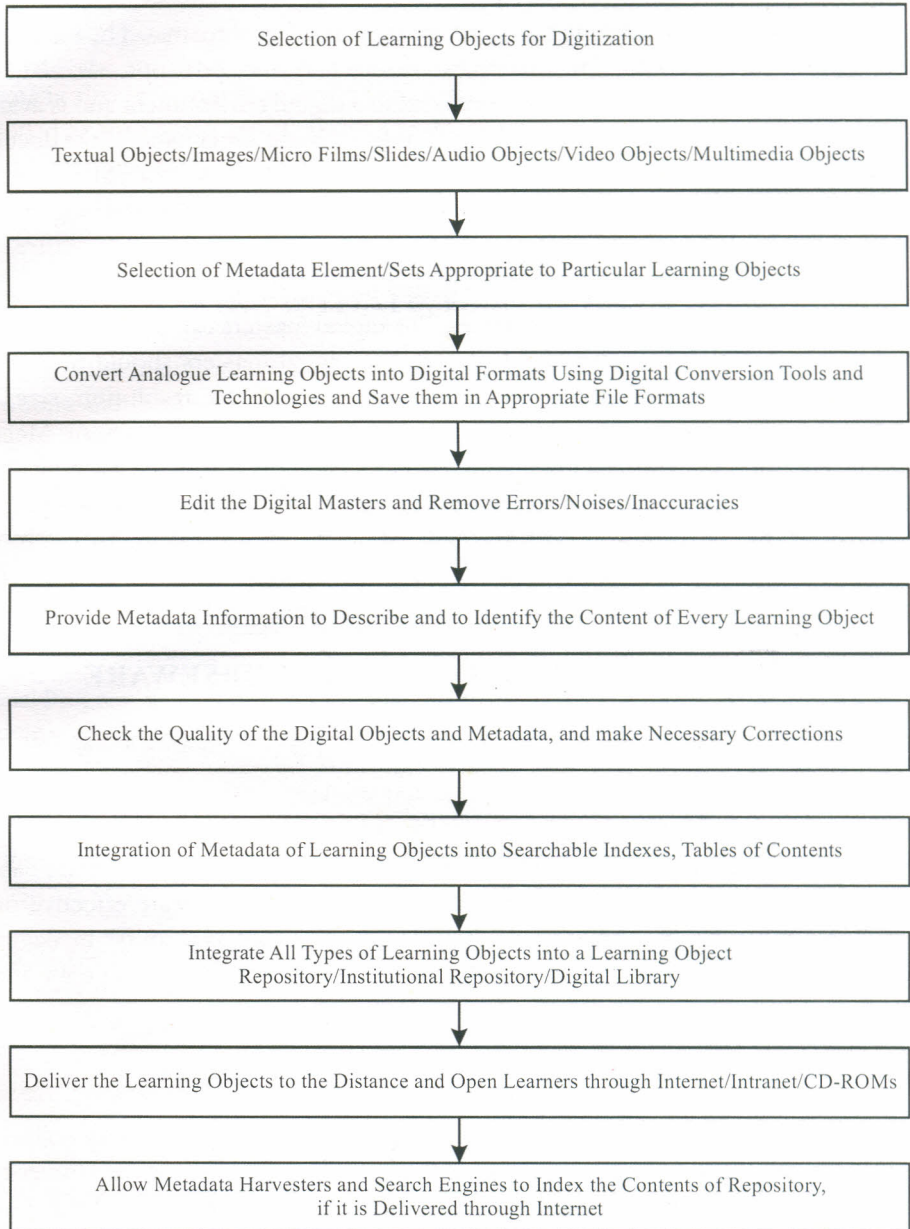
Massachusetts Institute of Technology (MIT) being the pioneer institution with regard to open courseware, commonly known as MIT Open Courseware (MITOCW), provides free access to learning materials for students, teachers and self-learners. The primary goal of MIT Open Courseware is to create a vast network of universities across the globe by offering open access to high-quality educational materials in varied disciplines with the broad objective of improving education around the world.

As broadly accepted, the basic purpose of the open courseware is to create an opportunity for open access to high-quality, digitized educational materials for building capacity at all levels. Due to an explosion of knowledge and advancement of information and communication technology (ICT), there has been a tremendous demand to update them and, as a result, more participating institutions/organizations are joining this digitized club with the basic philosophy of 'openness'.

## WORKFLOW FOR DEVELOPING AN OPEN COURSEWARE

For the development of an open courseware, the three main resources are:

- **Learning Content:** Full courses, course materials, content modules, learning objects.



*Digitization Work flow for Learning Objects*

- **Tools:** Software to support the creation, delivery, use and improvement of open-learning content including searching and organization of content, content and learning management systems, content-development tools and online learning communities.
- **Implementation Resources:** Intellectual property licenses to promote open publishing of materials, design principles and localization of content.

In an open courseware, the learning materials are found in digital format. The term 'digital format' implies any kind of bit stream with extensions like .doc, .pdf, .ppt, .xls, .dat, .mp3, .mpg, .jpg, .bmp, .gif, etc. If a document is created in a digital environment and is 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 for quality control to check the 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 the online mode using Internet or Intranet technologies. If it is made accessible through the Internet, metadata harvesters and search engines should be allowed to index the contents of learning objects.

## SOFTWARE USED IN DEVELOPING OPEN COURSEWARE

Some important and free software used in developing open courseware are as follows:

### *Moodle ([www.moodle.org](http://www.moodle.org))*

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. It is also known as a course management system (CMS), or learning management systems (LMS), or virtual learning environment (VLE).

### *Greenstone ([www.greenstone.org](http://www.greenstone.org))*

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 an open-source, multilingual software, issued under the terms of the GNU general public license.

*DSpace (www.dspace.org)*

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

*E-Prints (www.eprints.org)*

E-Prints is also an example of open-source software for institutional repositories. It was developed at the University of Southampton (UK) 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.

**OPEN COURSEWARE INITIATIVES IN INDIA**

Table 1 lists the major open courseware initiatives in India along with the respective host institutions and funding bodies.

*Table 1: Major Open Courseware (OCW) Initiatives in India*

<i>OCW Initiatives</i>	<i>Host Institution</i>	<i>Funding Body</i>
eGyankosh (a National Digital Repository)	Indira Gandhi National Open University (IGNOU)	Ministry of Human Resource Development, Govt. of India
CEC Learning object repository	Consortium for Educational Communication (CEC)	University Grants Commission (UGC)
National Program on Resource Technology Enhanced Learning (NPTEL)	Indian Institute of Technology (IIT) and the Indian Institute of Science (IISc)	Ministry of Human Development, Govt. of India
NCERT Online Textbooks Resource	National Council of Educational Research and Training (NCERT)	Ministry of Human Development, Govt. of India
UNESCO-SALIS e-Learning Portal	Indian Society for the Advancement of Library and Information Science (SALIS)	UNESCO

*eGyankosh (www.egyankosh.ac.in)*

Indira Gandhi National Open University (IGNOU) is a national open university that offers distance and open education in India and other countries. IGNOU has established a National Digital Repository of learning resources, 'eGyankosh'. The repository contains self-instructional print material of all the programs of IGNOU, as well as the video programs developed to supplement them. It is open to the public.

*CEC Learning Object Repository ([www.cec-lor.edu.in](http://www.cec-lor.edu.in))*

Consortium for Educational Communication (CEC) is an inter-university centre for electronic media, established by the University Grants Commission (UGC). CEC 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.

*National Program on Technology-Enhanced Learning ([www.nptel.iitm.ac.in](http://www.nptel.iitm.ac.in))*

The NPTEL project is being carried out by Indian Institutes of Technologies (IITs), the Indian Institute of Science (IISc), and other premier institutions around the country and is being funded by the Human Resource Ministry. The NPTEL objective is to enhance the quality of engineering education by developing curriculum-based video and Web courses for the students.

*NCERT Online Textbooks ([www.ncert.nic.in/textbooks/](http://www.ncert.nic.in/textbooks/))*

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

*UNESCO-SALIS e-Learning Portal ([www.salisonline.org](http://www.salisonline.org))*

The Indian Society for the Advancement of Library and Information Science (SALIS), in collaboration with UNESCO, launched the e-Learning Portal for raising awareness 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 the UNESCO 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).

## **BENEFITS**

Benefits of an open courseware are multidimensional; the dimensions being as follows:

*Institutional Benefits*

The qualitative learning objects can be shared by learners of different programs within open and distance learning (ODL) institution and can also 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.

*Faculty Benefits*

Open courseware builds awareness of the unique contributions to the field and prevents the duplication of efforts in preparing self-learning study materials. It also builds global awareness of the institution's curriculum.

*Just in Time and Any-time Access*

Open courseware facilitates any-time access to its collections whenever and wherever the learner needs them.

*Eliminate Travel Costs*

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

*Low-Cost Delivery*

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

*Always up-to-date*

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

**CONCLUSION**

Open courseware is still a new and evolving concept immensely beneficial to the learning community including the benefits for the teachers. In India, open courseware can prove to be a boon for those learners who are not in the mainstream. Open courseware can also greatly contribute to strengthening the educational infrastructure of the institution providing distance education. However, in India, only a few ODL institutes have adopted the open courseware project. Indian academics can play a significant role in creating open courseware materials for students to both expedite and upgrade the teaching and learning process diluting the limitations of the traditional educational set-up and begin a new culture of 'learning beyond classrooms'.

Intellectual property rights are still the biggest problem with open courseware in India. In today's competitive age, institutions are seeking ways to protect their intellectual property for fear that it might be stolen or used by others without financial benefit coming back to the institution. One of the biggest challenges is the lack of ICT infrastructure and ICT knowledge of the e-learners from the rural areas of India. Hence, to bring spread awareness among e-learners is also a major task for the ODL institutions of India.

To overcome the various challenges, the ODL institutions of India can form a consortium that will plan, coordinate and implement a national-level learning objects repository or digital library for the benefit 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 knowledge efficiently and preserve it for wider future learners also.

### **Reference**

Das, Anup Kumar. *Open Access to Knowledge and Information in South Asia: Scholarly Literature and Digital Library Initiatives-the South-Asian Scenario*. UNESCO; New Delhi.

### **Links**

<http://ijello.org/Volume3/IJKLOv3p029-044Downes.pdf>

[http://www.tamilnation.org/digital/Anup\\_Kumar\\_Das\\_ICDE\\_Conference\\_05.pdf](http://www.tamilnation.org/digital/Anup_Kumar_Das_ICDE_Conference_05.pdf)

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