INSTITUTIONAL REPOSITORIES, OPEN EDUCATIONAL RESOURCES FOR DISTANCE EDUCATION: A CASE STUDY OF INDIA

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Summary

The paper surveys the efforts of the different organizations in India which have set up the institutional repositories that are accessible to all. It also surveys (through the Questionnaire and interview method) the distance learners enrolled in different programmes of Indira Gandhi National Open University (IGNOU), New Delhi, India in order to find out their experiences regarding the availability and accessibility of educational resources. The study reveals that in the absence of an effective library support with adequate information resources to use, the distance learners lose interest and become indifferent towards their studies. The availability of open educational resources can help them to a great extent. The paper dwells upon the importance of institutional repositories, open educational resources for effective delivery of distance education in the country. It advocates that the open access to information and knowledge can enhance the quality and standard of distance education in the country to a great extent. The paper surveys the efforts of the different organizations in India which have set up the institutional repositories that are accessible to all. It also surveys (through the Questionnaire and interview method) the distance learners enrolled in different programmes of Indira Gandhi National Open University (IGNOU), New Delhi, India in order to find out their experiences regarding the availability and accessibility of educational resources.

Introduction

Open Access and Open Educational Resources – these concepts have gained lot of importance in the recent past. Open Access is the free availability of scholarly content on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of the articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited. (BOAI)

The term Open Educational Resources (OER) was adopted at a UNESCO meeting in 2002. It implies provision of educational resources, without any charge, for consultation, use and adaptation by users for non commercial purposes. The delegates had a wish,” to develop universal educative resources available for the whole of humanity” and “the hope that the
open resource for the future mobilizes the whole of the worldwide community of educators.” (UNESCO, 2002)

India has one of the largest higher education systems in the world with 311 universities and 15600 colleges which produce 2.5 million graduates. But it is a little disheartening to note that of the 3 million college graduates who enter the labour force each year, only 500,000 are considered competent enough for international corporate workplace (Goyal, 2006; Kumar, 2009). There are many problems which afflict the higher education system and these need to be immediately attended to. There is shortage of colleges and universities; only 10% of the student population is enrolled for higher education at present. This is accompanied by the dearth of high quality teachers, inadequate infrastructure, lack of well-equipped libraries, lack of quality information resources which can support the teaching and learning process.

The National Knowledge commission (2007) has explored the viability of widening the access of higher education to the masses. It recommends that gross enrolment of 15% in higher education should be attained by 2015. But the problem is that the distance learning is seen as inferior to conventional learning. Further, the success of a knowledge society depends to a large extent on upgrading the quality of and enhancing the access to education. This can be done by encouraging the development and dissemination of quality of OA materials and Open educational Resources (OER) through broadband Internet connectivity. This would facilitate easy and widespread access to high quality resources and drastically improve the teaching and the learning process.

In this regard, the NKC has recommended that a National e-content and Curriculum Initiative should be launched. The content of the repository should be multimedia, interactive and available in different vernacular languages. It has said,

“National Educational Foundation with a one-time infusion of adequate funds must be established to develop a web-based repository of high quality educational resources. Open educational resources (OER) must be created online through a collaborative process, pooling in the efforts and expertise of all major institutions of higher education. The OER repository would supply pedagogical software for various programs run through ODE and be available for utilization by all ODE institutions. An enabling legal framework that would allow unrestricted access without compromising intellectual authorship must be devised for this purpose.

Open Access Initiatives in India

In India, the universities and research institutions have realized the importance of Open Access and Open Educational Resources. They are taking efforts to support and promote the same in the country. There are universities and research organizations which have set up their own institutional repositories, open courseware and converted their journals in to OA journals. Some of the examples are being highlighted here. The table given below shows the universities’ libraries which have set up institutional repositories. These have used open source software for setting up the repositories. The items included in the collection are annual reports, technical reports, project reports, seminar and conference papers and journal publications of the faculty members and students of the organization.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Name of the Library</th>
<th>URL</th>
<th>Nature of items</th>
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<tr>
<td>1</td>
<td>Dr.S.R.Ranganathan Access Portal, ISI, Bengaluru</td>
<td><a href="http://www.isibang.ac.in/library/portal/index.htm">http://www.isibang.ac.in/library/portal/index.htm</a></td>
<td>Books written by S.R.Ranganathan are full text available</td>
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<td>4.</td>
<td>Raman Research Institute</td>
<td><a href="http://dspace.ri.res.in/">http://dspace.ri.res.in/</a></td>
<td>Research publications of faculty, students, Annual reports and newspaper clippings</td>
<td>3652</td>
</tr>
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<td>5.</td>
<td>DRTC Digital Library</td>
<td><a href="https://drtc.isibang.ac.in">https://drtc.isibang.ac.in</a></td>
<td>Seminar and Conference papers</td>
<td>356</td>
</tr>
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<td><a href="http://eprints.iisc.ernet.in/">http://eprints.iisc.ernet.in/</a></td>
<td>Publications of faculty</td>
<td>12467</td>
</tr>
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<td>7.</td>
<td>Digital repository of IIT Bombay</td>
<td><a href="http://dspace.library.iitb.ac.in/jspui/">http://dspace.library.iitb.ac.in/jspui/</a></td>
<td>full-text of book chapters, conference/proceeding papers, technical reports, journal pre-prints &amp; post-prints, working papers, Patents and others like annual reports</td>
<td>1028</td>
</tr>
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<td>8.</td>
<td>Dspace@NCRA</td>
<td><a href="http://www.ncra.tifr.res.in/library/">http://www.ncra.tifr.res.in/library/</a></td>
<td>Technical Reports, Preprints, Annual reports, Lecture notes</td>
<td>368</td>
</tr>
<tr>
<td>9.</td>
<td>DSpace @NCL</td>
<td><a href="http://dspace.ncl.res.in/dspace/index.jsp">http://dspace.ncl.res.in/dspace/index.jsp</a></td>
<td>Ph.D, Project Reports, and Patents</td>
<td>357</td>
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Open Courseware (OCW)

OCW are teaching, learning and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use or repurposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials or techniques used to support access to knowledge. It is a free and open digital publication of high quality educational material organized as courses. (http://www.ocwconsortium.org/about-us/about-us.html)

Some of the institutions in India have already embarked upon the initiatives to provide open courseware. The projects and initiatives undertaken by them are as under:

Consortium for Educational Communication (CEC) http://www.cec-ugc.org/
It is an inter-university centre on electronic media, established by University Grants Commission. The CEC in coordination with 17 Educational Multimedia Research Centres produces T.V.programmes in various subjects in English, Hindi and vernacular languages. The audiovisual programmes are based on the syllabus of schools and colleges. The programmes are broadcast on national educational television channels. These programmes are reusable.CEC has set up Learning Object Repository (LOR) and Digital Video repository) to provide worldwide access to these qualitative learning resources.

NCERT Online Textbooks http://ncert.nic.in/textbooks/testing/Index.htm
National Council of Educational Research and Training (NCERT) is an organization set up by the Government of India to assist and advise the Central and State governments on academic issues related to school level education. The organization publishes in English, Hindi and Urdu. It has embarked upon a project to provide school text books freely for the students and teachers through its website. The books are based on the National Curriculum Framework 2005.

National Program on Technology Enhanced Learning (NPTEL) nptel.iitm.ac.in
It is a collaborative effort by 7 Indian institutes of technology and Indian Institute of science and has been funded by Ministry of human Resources and Development, Government of India. The programme aims to enhance the quality of engineering teaching countrywide by developing curriculum based video and web courses. During the phase of the programme, 120 web based courses and 115 video courses of 40-50 hours duration have been prepared. The subject areas which have been covered are computer science, civil engineering, electrical engineering, electronics and material engineering. The teachers from all IITs and IISc, Bangalore have contributed in developing the content for the programme.

E-gyankosh www.egyankosh.ac.in
It is a digital repository of Indira Gandhi National Open University (IGNOU). It is one of the largest open universities in the world and provides education to millions in the country and overseas. The university produces self instructional study materials for various programmes and hosts various educational broadcasting channels.IGNOU has set up a National Digital repository of learning resources known as e-Gyankosh. This repository envisages to store, index, preserve, distribute and share the digital learning resources of open and distance learning institutions in the country. The repository facilitates anywhere any time access to the collections of self-instructional study materials, audio-video programmes and archives of radio and television based live interactive sessions.

• Ekalavya project (http://ekalavya.it.iitb.ac.in)
The ekalavya portal aims at a free exchange of knowledge and ideas, by placing all the relevant academic material in the Open Source, thus making considerable contribution to society. Under this project, many initiatives have been made for providing free educational resources for wider access and use.

- **eGURU programme** ([http://ekalavya.it.iitb.ac.in/eguruHome.do](http://ekalavya.it.iitb.ac.in/eguruHome.do))

  The eGURU programme is an educational initiative undertaken by the Affordable Solutions Lab, IIT Bombay, as a part of its larger project, eKALAVYA. At the moment, it is designed to help those students of B.E., M.C.A. and M.Sc. (CS/IT/Electronics), who find it difficult to carry out a major component of their curriculum, namely the project, due to the scarcity of resources and mentors. The eGURU programme provides the students with a list of relevant and challenging projects, which encourage them to think of innovative technical solutions to various real-life problems. More importantly, it attempts to provide them with mentors who guide them in their projects, encouraging them to work on relevant topics. The mentors are qualified experts in specific research areas. They are volunteering faculty, research scholars and industry professionals, willing to spend two to three hours a week, on advising these students on specific topics/areas of their interest and expertise. Successfully completed projects under eGURU are released in the Open Source.

- **eOUTREACH** ([http://ekalavya.it.iitb.ac.in/eOutreachHome.do](http://ekalavya.it.iitb.ac.in/eOutreachHome.do))

  The eOUTREACH programme produces high-quality digital text, audio, video and HTML contents of educational value for wider dissemination. This initiative of the Project ekalavya has been funded and supported by the Technology Information, Forecasting & Assessment Council (TIFAC).

- **eCONTENT**

  The eCONTENT programme creates open source digital contents in Indian languages through translation and new writing on topics of relevance to education for all levels.

- **Project OSCAR** ([Open Source Courseware Animations Repository](http://oscar.iitb.ac.in/oscarHome.do))

  The aim of Project OSCAR is to create a repository of web-based, interactive animations for teaching various concepts and technologies. It will be helping the teaching and learning process in secondary classes.

**Kerala Education Grid** ([http://www.edugrid.ac.in/](http://www.edugrid.ac.in/))

This project has been started by Indian Institute of Information Technology and Management, Kerala. The objective of this project is to increase and facilitate access to educational resources, support collaboration, sharing of knowledge, best practices and cooperation for improving the quality of teaching and learning. It is a platform for the educational community to support -generation and sharing of education resources across the different institutions, universities and colleges of higher education. It has developed coursewares on various IT-related courses-computer science, core science and electronics and communication.

**Open Access Journals**

Open Access journals are journals which use a funding model which does not charge reader or their institutions for access. The readers may read, download, copy, distribute, print, search, or link to the full texts of these articles for free.
According to DOAJ (www.doaj.org), there are some 3000+ OA journals. According to Open j-gate (www.openj-gate.com) there are 4807 OA journals worldwide and the number is continuously increasing. There are some 110 OA journals which are being published from India. Some of the OA journals are listed below:

- The Indian National Science Academy (INSA) [http://insa.ac.in/html/home.asp] is a scientific academy funded by the Government of India. It publishes peer reviewed journals and, organizes scientific discussions and publishes proceedings and the monographs.
- The Indian Academy of Science [http://www.ias.ac.in] was set up in 1934. It promotes the development of science in pure and applied. The academy publishes scientific journal, special volumes, organizes meetings of the fellowship and discussions on important topics. It supports and fosters science education and takes up the issues of concern to the scientific community. It publishes 11 OA journals –their full text PDF files are available through their sites.
- Indian Medlars Centre through medIND Project [http://medind.nic.in/] provides access to full text 41 biomedical journals. MedIND journals are hosted by Bibliographic Informatics Division, National Informatics Centre, and Department of Information Technology.
- NISCAIR (National Institute of Science Communication and Information Resources) provides provide formal linkages of communication among the scientific community by publishing research journals. It serves as the prime custodian of all information resources on current and traditional knowledge systems in science and technology in the country. It publishes 17 research journals. NISCAIR provides access to full text articles of 2 journals though NISCAIR Online Periodicals Repository - [http://nopr.niscair.res.in/]. The two journals are:
  1. Indian Journal of Chemistry
  2. Indian Journal of Biochemistry and Biophysics

The full text of other journals will be made freely accessible very soon.
- Kamla –Raj Enterprises provides access to full text of 10 Indian journal through their website [http://www.krepublishers.com/KRE-New-J/]
- Medknow Publications is a publisher for academic and scientific, peer-reviewed, online, print open access journals It aims at improving the visibility and accessibility of the science from the developing world. Medknow pioneers in 'fee-less-free' model of open access publishing and provides immediate free access to the electronic editions of the journals without charging the author or author's institution for submission, processing or publication of the articles. It provides access to some 80 OA journals through [http://www.medknow.com/journals.asp].

The above examples are few given the number of universities, colleges and student population in the country; more still needs to be done on war footing. The above examples/models should be emulated by all universities and research organizations for the rich dividends of Open Access to reach each and every one in the country. A common portal should be developed and a common search interface should be made available to browse and search across all the Institutional repositories of the country. The portal should provide links to all OER and OEW available.

The libraries have a special role to play in this context, they should set up IRs for their organization, advocate the importance of OA among the faculty members, convince the faculty members to submit their manuscripts to OA journals. The library staff has to face a serious challenge of convincing the academicians of the university to submit their
research publications to institutional repositories. The libraries should identify and provide links of freely available OER which are related to the curriculum taught in the universities.

**Open Access, Open Education Resources and Distance Education**

A survey of 40 distance learners was done for assessing their opinion about library/information resources accessible to them. Out of 40, 25 or 62.5% said that they were not satisfied with the library and information resources which they accessed. Out of 25, 15 or 60% said that they needed more information resources and services for their assignments and term end examinations. They said the information which they felt was pertinent to them was often in password protected databases and e-journals. Another 5 or 20% of the students said that they wanted the content in Hindi too which was not available. The feedback from the survey revealed that the availability of free and quality information resources would help distance learners in improving their performance in exams.

**Conclusion**

Distance education is being considered as an active option for widening the access to higher education for the masses in the country. OA, OER can support and enhance the quality of distance learning programmes. This will ultimately support the vision of the country towards attaining the status of knowledge society.

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