

Digital Repository to Open Educational Resource Repository: IGNOU's eGyanKosh

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Abstract

Since its establishment in 1985 by an act of parliament, the Indira Gandhi National Open University (IGNOU) has contributed significantly to the development of higher education in India through the open and distance learning (ODL) mode. It was established with a vision to serve as a national resource centre for ODL, with international recognition and presence, to provide seamless access for all to sustainable and learner-centric quality education, skills upgrading and training, using innovative technologies and methodologies. IGNOU has emerged as the largest university in the democratic world, serving the educational aspirations of around 2.8 million students in India and 32 other countries.

IGNOU's learning resource repository, eGyanKosh, initiated in 2005 with the intention of digitising self-instructional material, has emerged as one of the world's largest repositories, with more than 40,000 self-instructional text materials, and around 2,000 videolectures covering over 2,200 of the university's courses. The repository has become very popular in a short time and is being used the world over by student and teacher communities for its rich content.

So far, the courses available on eGyanKosh and FlexiLearn have been licensed material available as open access content that one can register to use free of cost, but that is non-derivative, non-reusable and governed by copyright rules. The university has now decided to provide all its learning resources as open educational resources (OER) through its open licence policy. IGNOU envisions that it will be a leading developer of OER, with the use of its own as well as others' OER fully incorporated into teaching and learning at all levels within the university system. This case study provides an insight into the process of eGyanKosh evolving from a digital repository to an OER repository.

Keywords: *open educational resources, open courses, learning resource repository, IGNOU, eGyanKosh*

Introduction

The Indira Gandhi National Open University (IGNOU) was established by an act of parliament in 1985 as a central university under the Ministry of Human Resource Development. During the past 27 years, IGNOU has become the national resource centre for open and distance learning (ODL), with international recognition and presence. It has been providing seamless access to sustainable and learner-centric quality education as well as skill upgrading and training to all sections of society by using innovative technologies and methodologies. The university has recently embarked on various new initiatives, along with consolidation and upgrading of existing systems, to address the massive human resources required for promoting sustained national development through global understanding. IGNOU has the following unique features:

- International jurisdiction, taking IGNOU programmes to African and West Asian countries, including Maldives, Mauritius, Nepal and Seychelles, covering in all 43 countries.
- Flexible admission rules.
- Individualised study with flexibility in terms of place, pace and duration.
- Use of state-of-the-art information and communication technology (ICT) applications.
- A student support service network in the country, as well as at the international level through partner institutions.
- Resource sharing, collaboration and networking with conventional universities and other organisations.
- Socially and academically relevant programmes based on needs assessments.
- Special education catering to underserved populations and the disadvantaged.

Important achievements of the university are:

- Emergence as the largest university in the world.
- Recognition as a Centre of Excellence in Distance Education by the Commonwealth of Learning in 199.
- Award of Excellence for Distance Education Materials by the Commonwealth of Learning in 1999.
- Listed 12th in the Webometrics ranking of Indian universities in January 2010.

The university functions through a network comprising the headquarters, regional centres in all states, and study centres and partner institutions within India and in 43 other countries. It is now widely accepted as a system leader in the field of ODL throughout the world. The university offers 490 certificate, diploma, degree and doctoral programmes through its 21 schools of study, 12 divisions, 14 centres, 67 regional centres, over 3,324 study centres, 80 partner institutions spread across 43 countries, 549 teachers and academicians and more than 1,200 administrative staff. Additional help is also sought from more than 6,000 experts from conventional universities and other organisations and about 46,134 part-time academic counsellors. Today IGNOU has over 2.7 million students on the

rolls, with over 732,000 having enrolled in 2012 alone. IGNOU awarded around 555,920 degrees, diplomas and certificates in 2011, covering a whole range of disciplines and inter-disciplinary areas (Indira Gandhi National Open University, 2011).

IGNOU provides multichannel, multiple media teaching and learning packages in the form of self-instructional print and audio/video materials, radio and television broadcasts, face-to-face counselling/tutoring, laboratory and hands-on experience, videoconferencing, interactive radio counselling, interactive multimedia CD/DVD and Internet-based learning. Apart from the print-based self-instructional material, the educational programmes reach more than ten million homes through Gyan Darshan TV channels, a DTH (direct-to-home) platform, Gyan Vani radio stations and webcasting. The Electronic Media Production Centre (EMPC) of the university has emerged as a major hub for the nation in using electronic media in distance education. The EMPC has produced a cumulative total of 3,718 videos and 1,555 audios, and is the nodal centre for managing the Gyan Darshan and Gyan Vani channels. There are four TV channels under Gyan Darshan and 27 FM radio stations under Gyan Vani.

The university is now shifting its attention towards the development of interactive multimedia content and learner support through web-based platforms. ICT initiatives in the form of eLearning, online student support, digital repositories and open source courseware are now part of the ODL systems. The earlier generations of ODL systems are now moving forwards to new generations which are ICT-dependent for disseminating knowledge without compromising quality; ICT initiatives are also more cost-effective to operate because they adopt the “open mantra” of open source and open access. IGNOU is keeping pace with these developments in ODL systems and is emerging as a leader in the adoption of ICT applications and policies towards open access and open educational resources (OER).

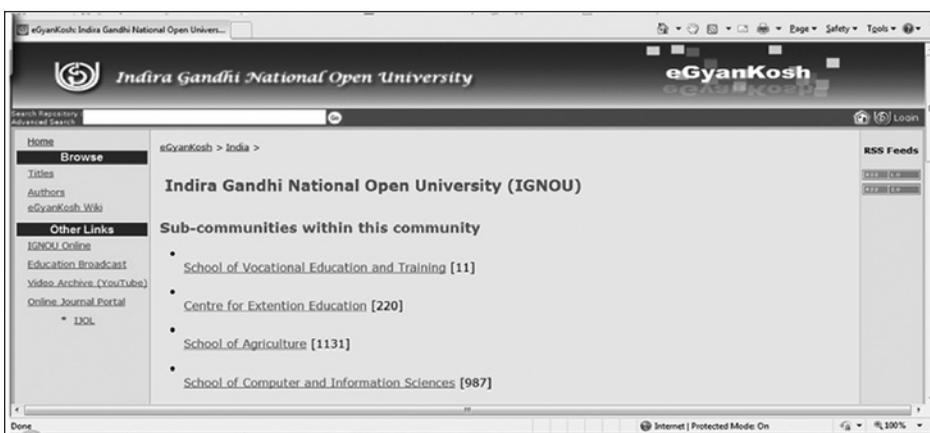
IGNOU's ICT Interventions

Web-based programmes and information systems that provide access to users who are physically remote from resources is emerging as a democratising, emancipating, empowering force, facilitating self-publishing, knowledge sharing and peer-to-peer networking. The Internet has now evolved from being a medium in which information was transmitted and consumed, into a platform where content is created, shared, remixed, repurposed and redistributed. In the same spirit, eLearning has moved from being merely a content repository, emulating classroom teaching, to more dynamic concepts of social networking, do-it-yourself, personal learning environments and mobile learning.

Realising the potential of online learning to reach out to the unreached, IGNOU has embarked on major initiatives towards developing online learning environments for distance learners. IGNOU initiated the development of a knowledge repository in October 2005 to store, index, preserve, distribute and share the digital learning resources developed by the ODL institutions in the country. This repository is called eGyanKosh (Figure 16.1).¹

¹ www.egyankosh.ac.in

Figure 16.1: eGyanKosh main page



eGyanKosh has emerged as one of the world's largest educational resource repositories. It offers free, open access and is available to the world to facilitate self-learners and empower educators. More than 2,200 courses and 2,000 videolectures are available online in the repository. The print-based contents are available as PDF files and video programmes and are being provided through a special channel of IGNOU on YouTube,² with the metadata link in the repository. The YouTube channel established for eGyanKosh is quite popular, with 2,257 subscribers and 191,734 hits on the site as of 4 November 2012.³ The repository also has a wiki for collaborative content generation.

eGyanKosh is built on the open source application DSpace, which MIT and HP Labs developed for creating institutional repositories. DSpace uses extended Dublin Core metadata standards integrated within the application for indexing the content. It also has a Lucene search engine integrated with the application. Since the application is meant for building open access institutional repositories, major customisation was done on it to suit the requirements of building a learning resource repository.

Initially, eGyanKosh access was restricted to the IGNOU community of faculty, staff and students. The first bold step was taken in June 2008 by facilitating open access to eGyanKosh's content. Now anyone can register for free and access learning resources available in print and video formats from the repository.

The site has already received over two million hits, with an average of 400 visits per day from all over the world. There are 125,000 active registered users of the repository. The statistics clearly indicate the growing popularity of eGyanKosh.

The repository received a tremendous response after its public launch, as is evident from the following blog posting:

As you can see, I am extremely excited about this initiative. I don't think I am exaggerating when I state that this is the single largest (by far) source of current open educational resources that exists (i.e., not counting the out-of-copyright books scanned by Google and OCA). Instead of providing just a curriculum list with links to books and articles that you cannot access if you are not a member of a rich

² www.youtube.com/user/egyankoshIGNOU

³ www.youtube.com/user/egyankoshignou?feature=results_main

university, it provides everything. And in addition, you get a wealth of material that is unique to India/Asia, etc. (Håklev, 2008).

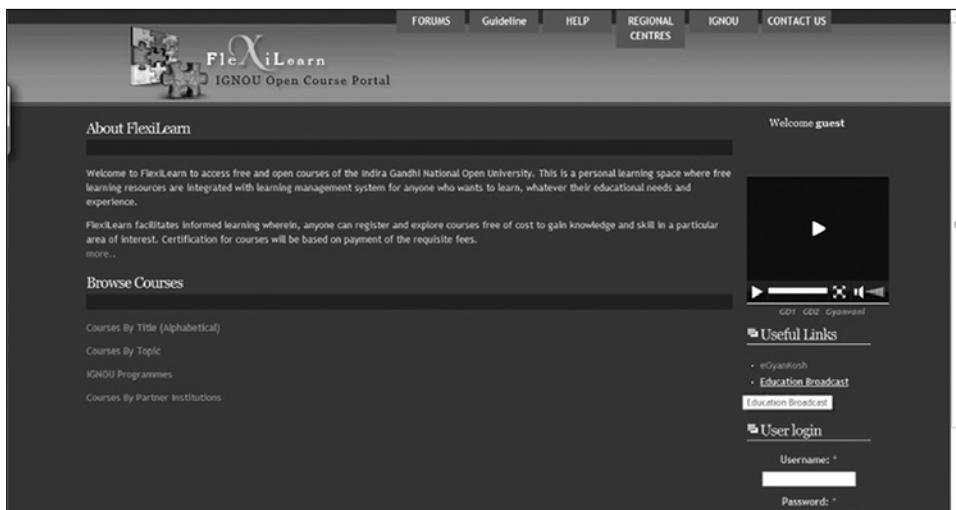
A search on Google about eGyanKosh clearly indicates its popularity, as one can see from the numerous discussion forums, blogs and websites that have provided links to it and recommended that their users visit the site.

The facilities of eGyanKosh have been further extended with a FlexiLearn platform. The FlexiLearn website⁴ is an open course portal where one can register and explore courses for free (Figure 16.2). eGyanKosh provides a personal learning space, where free learning resources are integrated with a learning management system for anyone who wants to learn, whatever their educational needs and experience. More than 800 open courses are available on FlexiLearn for self-guided and self-paced learning. FlexiLearn facilitates informed learning by allowing anyone to register and explore courses to gain knowledge and skills in a particular area of interest.

After its public launch on 19 November 2009, the FlexiLearn platform received a tremendous response. The platform was built on multiple open source applications with a single sign-on facility. In the front end it has a content management system (Drupal) and in the back end a learning management system (Moodle) and an e-portfolio system (Mahara). The applications have been integrated with a large number of third-party plug-ins to provide a personal learning environment for learners. The idea is to promote self-learning through community-based interactions with built-in Web 2.0 tools.

Whilst anyone can register for free to access the online courses, for certification requisite fees have to be paid through an online payment gateway. To earn a degree or diploma, the learner will have to fulfil necessary qualifications and complete the programme as per the university's established standards. He or she must also make special application to be considered for the awarding of a degree/diploma.

Figure 16.2: FlexiLearn main page



Whilst eGyanKosh was developed mainly to archive the learning resources of the university, FlexiLearn has been initiated to provide not only learning resources but a complete learning experience.

⁴ www.ignouflexilearn.ac.in

Both platforms have links to the live educational channels through the webcasting facility at Education Broadcast,⁵ which at present provides access to broadcast channels Gyan Darshan-1, Gyan Darshan-2 and Gyan Vani (Delhi), with many more channels planned for addition. The platform supports multiple operating systems, processors and devices. The user has options to select from Windows Media or Flash players, with multiple bandwidth support ranging from 100 to 256 Kbps.

The university at present is offering 27 major online programmes using an in-house developed eLearning platform, and more than 5,000 students are registered for these programmes. The platform provides a complete virtual learning environment covering all the activities, from registration to certification. The eLearning platform is mainly used to provide interactive services to learners both in real time and asynchronously, whereas eGyanKosh or FlexiLearn are used at the back end to provide access to the course content required for online courses.

Another major initiative on the online education front where IGNOU is participating is the Pan-African e-Network Project. This is a collaborative project of the Ministry of External Affairs, Telecommunications Consultants India Limited and IGNOU, under which IGNOU is to provide tele-education to 53 countries of Africa. The project is now proposed to be expanded to establish the Indian Africa Virtual University. The SAARC (www.saarc-sec.org) and ASEAN (www.aseansec.org) e-network initiatives are involved in a similar manner. For these projects, eGyanKosh and FlexiLearn repositories are functioning as a backbone for the e-content requirement to run the programmes.

IGNOU's OER Policy Adoption

Providing access to quality higher education opportunities is one of the greatest challenges India faces. One of the major recommendations of the National Knowledge Commission (NKC) established by the Government of India was that an important strategy for addressing the pressing problems of education in the country is to make use of globally available OER and open access (OA) research journals as a means of radically increasing the widespread availability of high-quality educational resources. Further, the NKC recommended that distance educators focus on creating a national ICT infrastructure, improving regulatory structures, developing web-based common open resources, establishing a credit bank and providing a national testing service (National Knowledge Commission, 2012).

India is already an active player in the OA movement, as evidenced by increasing availability of OA electronic journals, OA repositories and open source software-based repositories. In contrast to the OA situation, OER efforts in higher education are sparse, with only three or four major initiatives underway, specifically for creating open educational tools and resources. The National Programme on Technology Enhanced Learning project of the Indian Institute of Technology, under the National Mission on Education through ICT, and IGNOU's eGyanKosh are some of the major initiatives in this direction. But these are open access repositories, not yet OER repositories, because the available content is not reusable and is bound by copyright rules.

⁵ www.ignouonline.ac.in/Broadcast

The courses available on eGyanKosh and FlexiLearn so far are licensed materials available as open access content that anyone can register to use for free. But the content available in these repositories is non-derivative, non-reusable and governed by copyright rules. In a major decision taken recently by the university's Board of Management, all the learning resources of eGyanKosh and FlexiLearn are to be offered as OER with an open licence policy. IGNOU envisions being a leading developer of OER, with the use of its own as well as other OER fully incorporated into teaching and learning at all levels within the university system. The university plans to adopt an OER policy that will guide the promotion, development and use of OER and further ensure that the highest standards of education are achieved.

The proposed OER repository will be a platform for educators to share educational resources with others worldwide. High-quality resources made available from the OER repository can serve to inspire teachers, be directly accessed by learners and be improved upon or localised by others.

The purposes of IGNOU's OER policy are to:

- Make materials available under Creative Commons (CC) licences.
- Support voluntary participation of faculty and others in developing OER content.
- Advise faculty and other participants on publication rights and licensing issues.
- Provide guidance in development and review of OER materials prior to sharing them on a worldwide scale.
- Define collaborations within and outside the university, with the intent to allow access to open content.

The OER repository will include content available as an entire course, a complete book or a more granular piece, such as a single learning object, based on the following criteria:

- The content will be made publicly available.
- The content will be made available in digital or electronic format.
- The content will be made available free, at least for educational purposes.
- The content will be governed by Creative Commons licences, making it reusable, redistributable and adaptable for other audiences and technology platforms.

The repository will not only comprise educational resources and courses already available on eGyanKosh and FlexiLearn, but also provide a platform for faculty and other members of the academic community to upload content voluntarily created by them as a valued addition to existing course content. This may include class notes, presentations and short write-ups. The platform will also facilitate uploading and sharing of all derivatives or adapted works emanating from the existing content of the repository.

All materials released on the IGNOU OER repository site will be covered under the Creative Commons Attribution-NonCommercial-ShareAlike 2.5 India licence (CC BY-NC-SA), which will allow anyone to freely modify, rework and extend any of the material, and later distribute it, under the following conditions:

- The user provides attribution to the creator of the material (i.e., IGNOU in the case of IGNOU's learning materials).
- Material may be reused and redistributed for non-commercial purposes.
- The derivative version must be licensed under the same licence (CC BY-NC-SA).

This will enable adaptation of IGNOU materials by other institutions for non-commercial use and foster creation of derivative works by other individuals and institutions, to be released under the ShareAlike (SA) licence.

The university plans to provide resources of the highest quality through its OER repository. The reviewing process will be carried out at different levels. All IGNOU curriculum-based self-learning material is developed through peer reviewing and the strict quality assurance mechanisms incorporated within the course development process, and will not require further review before being uploaded to the repository. All other contributions will be peer reviewed before being uploaded to the OER repository. In addition to these processes, users will be able to leave comments and grade content. At the university level, an OER Board is proposed to review policy, as well as the production, delivery and access processes for OER.

All OER materials shared from the IGNOU OER repository to the world at large will carry this disclaimer:

The material is for educational purposes only and the university absolves itself of any practical misuse of the OER materials or their content. OER materials authored and published by faculty and staff of the university and others do not necessarily reflect the opinion of the university.

Once the policy is adopted, it is proposed that all learning materials published under the CC licence will include the following information in the credit page:

© [year], Indira Gandhi National Open University. This learning resource is available under a Creative Commons Attribution-NonCommercial-ShareAlike 2.5 India licence (CC BY-NC-SA).
Derivatives of this work are not authorised to use the IGNOU logo.

The university, under the OER policy, proposes to support free and open access to all educational resources and make them freely available from the OER repository using Creative Commons Attribution licences for all the content it owns or co-owns, with the following exceptions:

- The university may on a case-by-case basis make exceptions to the sharing of IP addresses it owns, with detailed reasons for limiting the free access to material. Such restrictions should be time dependent.
- IP addresses owned by the university that it considers commercially sensitive may also be restricted.

The faculty member responsible for development of a course (called the Course Co-ordinator) shall be the person responsible for management and adoption of OER in the specific course. In a case where the courses are not provided under the CC licence, the discipline group concerned shall take the appropriate decision and justify why a course will not be offered as OER. This will be done in a formal meeting and will be put on the record.

In a short time, IGNOU has made major strides in adopting up-to-date educational technologies and has kept pace with the latest developments in the open education front.

eGyanKosh, which had a humble beginning as a digital repository to archive learning content, expanded its scope to evolve as a major hub for the university's online services. With the adoption of its OER policy, IGNOU will be the first university in the country to offer all its educational resources under Creative Commons open licences. The university is now in the process of implementing the policy and setting up the OER platform for content development and sharing.

Concluding Remarks

When IGNOU was established by an act of parliament, it was envisioned as becoming a leader in the country's ODL system and serving as a national resource centre. A step towards that goal was accomplished by developing eGyanKosh, a digital repository of learning resources, and making its contents available as open access material. Although the repository is at present providing access to IGNOU course material, it has been proposed to expand the eGyanKosh scope so that it becomes a national digital repository, by including learning resources from other open universities and distance education institutions in the country, in a consortium mode. Adoption of an OER policy will give further impetus to the university to evolve as a system leader on the ODL front. The concept of OER is very new to the country and is at a nascent stage of development. IGNOU will have to play a major role in building awareness about OER, and possibly help other ODL institutions in the country to adopt OER policies.

The NKC has suggested that development of open and distance education and OER is imperative to achieve India's objectives of expansion, excellence and inclusion in higher education. IGNOU is well positioned to spearhead a movement in that direction.

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