COMMONWEALTH of LEARNING

Open Educational Resources:
Policy, Costs and Transformation

Fengchun Miao, Sanjaya Mishra and Rory McGreal
Editors

PERSPECTIVES ON OPEN AND DISTANCE LEARNING

United Nations
Educational, Scientific and
Cultural Organization

COMMONWEALTH *of* LEARNING

Open Educational Resources:
Policy, Costs and Transformation

Fengchun Miao, Sanjaya Mishra and Rory McGreal
Editors

Published by the United Nations Educational, Scientific and Cultural Organization (UNESCO), 7, place de Fontenoy, 75352 Paris 07 SP, France, and Commonwealth of Learning (COL), 4710 Kingsway, Suite 2500, Burnaby, BC V5H 4M2, Canada.

PERSPECTIVES ON OPEN AND DISTANCE LEARNING

Open Educational Resources: Policy, Costs and Transformation

Editors: Fengchun Miao, Sanjaya Mishra and Rory McGreal

© UNESCO and Commonwealth of Learning, 2016

ISBN 978-1-894975-75-9

This publication is available in Open Access under the Attribution ShareAlike 4.0 (CC-BY-SA 4.0) license (http://creativecommons.org/licenses/by-sa/4.0/). By using the content of this publication, the users accept to be bound by the terms of use of the UNESCO Open Access Repository (http://www.unesco.org/open-access/terms-use-ccbysa-en) and the Commonwealth of Learning's Open Access Repository (http://oasis.col.org).

For the avoidance of doubt, by applying this license the Commonwealth of Learning does not waive any privileges or immunities from claims that it may be entitled to assert, nor does the Commonwealth of Learning submit itself to the jurisdiction, courts, legal processes or laws of any jurisdiction.

The designations employed and the presentation of material throughout this publication do not imply the expression of any opinion whatsoever on the part of UNESCO or COL concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The ideas and opinions expressed in this publication are those of the authors; they are not necessarily those of UNESCO or COL and do not commit the organisations.

Published by the United Nations Educational, Scientific and Cultural Organization (UNESCO), 7, place de Fontenoy, 75352 Paris 07 SP, France, and Commonwealth of Learning (COL), 4710 Kingsway, Suite 2500, Burnaby, BC V5H 4M2, Canada.

Contents

Foreword by the President and CEO, Commonwealth of Learning v

Foreword by the Assistant Director-General for Education, UNESCO vii

Contributors ix

Acknowledgements xv

Introduction
Open Educational Resources: Policy, Costs and Transformation 1
Rory McGreal, Fengchun Miao and Sanjaya Mishra

Chapter 1
Open Educational Practices in Australia 13
Carina Bossu

Chapter 2
Open Educational Resources Policy for Developing a Knowledge-Based Economy in the Kingdom of Bahrain 27
Nawal Ebrahim Al Khater, Hala Amer and Fadheela Tallaq

Chapter 3
The State of Open Educational Resources in Brazil: Policies and Realities 43
Carolina Rossini and Oona Castro

Chapter 4
Open Educational Resources in Canada 63
Rory McGreal, Terry Anderson and Dianne Conrad

Chapter 5
Caribbean Open Textbooks Initiative 77
Neil Butcher, Andrew Moore and Sarah Hoosen

Chapter 6
Open Educational Resources in Germany 87
Ulf-Daniel Ehlers

Chapter 7
Copyrights in OER Publishing in India: The Case of the National Programme on Technology-Enhanced Learning 99
Mangala Sunder Krishnan

Chapter 8
The Promise of Open Educational Resources in Indonesia 105
Petra Wiyakti Bodrogini and Mohammad Rinaldi

Chapter 9
Using Open Educational Resources for Undergraduate Programme Development at Wawasan Open University 119
Teik Kooi Liew

Chapter 10
OERu: Realising Sustainable Education Futures 129
Wayne Mackintosh

Chapter 11
Integrating ICT for Innovative Educational Solutions in Oman: Leveraging OER Policy to Enhance Teaching and Learning 147
Maimoona Al Abri and Saif Hamed Hilal Al Busaidi

Chapter 12
The Polish Open e-Textbooks Project as a Policy Model for Openness of Public Educational Resources 161
Alek Tarkowski

Chapter 13
Open Access to Educational Resources Through Federal Portals and OER in Russia 175
Svetlana Knyazeva and Aleksei Sigalov

Chapter 14
Open Educational Resources for Early Literacy in Africa: The Role of the African Storybook Initiative 195
Tessa Welch and Jennifer Glennie

Chapter 15
Developing an Infrastructure Support for Faculty Use of Open Educational Resources: The Case of the Washington State Community and Technical Colleges System 211
Boyoung Chae and Mark Jenkins

Conclusions 223
Fengchun Miao, Sanjaya Mishra and Rory McGreal

CHAPTER

7

Copyrights in OER Publishing in India: The Case of the National Programme on Technology-Enhanced Learning

Mangala Sunder Krishnan

Abstract

Opening up education through the use of information and communication technology (ICT) tools began formally in India with the launch of the *Gyan Darshan* television channel in 2000 by the Indira Gandhi National Open University, New Delhi, and of the National Programme on Technology Enhanced Learning (NPTEL) in 2003 by the seven Indian Institutes of Technologies and the Indian Institute of Science. The government of India funded both of them and copyrights of published materials through these channels have been generally restrictive for some time. The launch of the National Mission on Education through Information and Communication Technology (NMEICT) in 2009, with government-approved funding of USD 1 billion and incorporating NPTEL as its first funded mission project, led to a review of copyrights of Open Educational Resources (OER) in India and brought all NMEICT-funded projects under one umbrella. The result is the adoption of Creative Commons Attribution-ShareAlike licence (CC BY-SA), which is identical to that of Wikipedia for the entire scheme. This chapter traces the development of this process.

Introduction

The year 2001 witnessed the launch of Wikipedia and Creative Commons. The very next year, the Massachusetts Institute of Technology (MIT), Cambridge, launched the OpenCourseWare website with about 50 courses, which gradually reached about 2,200 courses 10 years later.

In 2002, UNESCO organised the "Forum on the Impact of Open Courseware for Higher Education in the Developing Countries," when the term "Open Educational Resources (OER)" was coined (UNESCO, 2002). MIT was also among the earliest to adopt an open licensing policy based on Creative Commons. The

first-ever Indian response to recognise OER came from the recommendation of the National Knowledge Commission (NKC) in 2007, which emphasised the role of OER in upgrading the quality of education in the knowledge economy. While recommending the creation of a National Educational Foundation to develop a Web-based repository of high-quality content through a collaborative process, the NKC said "an enabling legal framework that would allow un-restricted access without compromising intellectual authorship must be devised for this purpose" (NKC, 2007).

In this chapter, we present the evolution of the Copyrights Policy of the National Programme on Technology Enhanced Learning (NPTEL) – a flagship programme of the premier Indian educational institutions, supported by the Ministry of Human Resource Development (MHRD), Government of India.

A much more detailed account of the history of NPTEL and its programmes and outreach (and of the design of the largest online video- and Web-based content repository developed to help build higher education curricula) are all described in a separate article (Krishnan, 2013).

India's National Programme on Technology-Enhanced Learning (NPTEL)

NPTEL was the first online curriculum developed by a group of institutions in India for the Web (NPTEL, 2007). In the Commonwealth, it is the largest provider of OER and highly accessed throughout the world. The contents are helpful not only to undergraduate engineering and technology students in India, but also to others everywhere else in the world. Institutions everywhere can use them as they wish, since course contents and are developed in a modular and free way without infringing on existing copyrights of book and journal publishers.

A team of five Indian Institutes of Technology (IITs) and four Indian Institutes of Management proposed a national Technology Enhanced Learning Initiative in partnership with Carnegie Mellon University, Pittsburgh, in 1999, with multiple goals. After several years of deliberations, a project for detailed content creation in 200 topics in five major engineering disciplines was sanctioned by the Ministry of Human Resource Development (MHRD), Government of India, in 2003. The course contents would cover the length and breadth of undergraduate engineering curriculum offered by more than 1,800 institutions in India around 2003. The MHRD asked the IITs to create open educational contents as the first step. Seven of them (IIT Bombay, IIT Delhi, IIT Guwahati, IIT Kanpur, IIT Kharagpur, IIT Madras and IIT Roorkee) and the Indian Institute of Science (IISc; which was included as a partner in 2003) proposed to work together. The main objective of the project was the enhancement of quality of engineering, technology and science education in India.

The project, in its first four-year phase, 2003/04–2006/07, created about 260 courses, with nearly half of them as video. The original proposal did not include producing video-based lecture materials, because online dissemination of large course videos was a challenge in the early years. Also, Web-based learning and free and open online contents were beginning to appear rapidly throughout the world and IITs were keen on implementing a coherent learning strategy through modular course contents and animated and visually enriched subject matter.

The then Minister of Human Resource Development expressed to the team from IITs and IISc that video lectures were particularly important to Indian students for whom the face of the teacher in learning processes mattered. He was also of the opinion that a high bandwidth Internet throughout India was likely to take some more years, while television was already available even in the remotest villages (albeit in one central house or a community centre in many remote villages, where people assembled almost as a social get-together to watch popular television shows).

A 24/7 free-to-air educational channel for technical video lectures, prepared under this project, was launched in 2004 as *Ekalavya* (named after the mythological character who learned archery at a distance). This channel fell within the group of *Gyan Darshan* channels owned by the Government of India. Broadcast quality lectures were recorded in the studios of IITs and IISc with funding support by the ministry. All recording and editing of videos were done in-house to enable the teachers to deliver and edit recorded lectures at their own convenient time. The creation of Web-based content was also done largely in-house to ensure that the authors had complete ownership of the content and would be able to modify it at will. The institutions and the ministry-owned distribution rights. Technologies were learned and improvised in-house to enable the technical and subject matter teams to work together.

Copyrights: Changing Mindset

Broad outreach and access of NPTEL lessons was first and foremost on the minds of the team that built NPTEL. The government kept reminding the NPTEL team that lessons should reach everyone possible without any fee. The authors could not, however, be forced by any regulatory policy to open up their teaching and intellectual ownership to the public at large except through their own publications as books or through journals, both of which had charges for access.

Given the environment of "academic freedom" and expected scholarly work from the faculty in the partner institutions in the project, the subject matter experts were, until then, only obligated to make their academic content free for the students registered in the institutions. There was no definition of "free" such as Richard Stallman's "free as in freedom" that could be mandated by NPTEL, though it was the principal focus of the project.

Therefore, Prof M.S. Ananth (who later became Director of IIT Madras) suggested to the Government of India that NPTEL would succeed in meeting its objectives of free and open access to quality materials by providing a one-time honorarium to the creators of courses. This would be a token of their time and effort for providing certified and peer-reviewed course contents and, in turn, for obtaining permission from them for uncontrolled access by everyone else in due course as technologies improved.

The Government of India agreed to compensate faculty members with a one-time honorarium that would allow them to transfer their intellectual property to the Government of India, to be used by others. To avoid infringement of copyrights of publishers and material available already on the Internet, the project evolved strict guidelines for the subject matter experts (SME) from the beginning (minutes of NPTEL meetings in the years 2004–2006). Academic institutions

and industry were provided a copy of the entire NPTEL repository after signing a formal agreement with the project office headed by IIT Madras, which required adherence to standard rules for reproduction, re-transmission and modification. Creative Commons had already appeared and there was a wait-and-watch strategy by the Indian government to adopt those policies (NMEICT, 2009). In the matter of copyrights, Prof Ananth kept appealing to faculty members that "service with humility" should be the one and only guiding light for NPTEL. "Common sense" for copyrights was the watchword.

In 2007, when Google and its newly acquired venture, YouTube, approached NPTEL for making the videos public through streaming media technology, some of the Directors of IITs (who are custodians of intellectual property created in their institutes) were apprehensive. YouTube had been banned in many academic institutions in India, including IITs, using proxy server configurations because of its holding objectionable and unedited video contents. Prof Ananth appealed again to all IITs and IISc that adding "non-objectionable content" to YouTube's holdings was well within the prerogative of the NPTEL team, and when they grew, "good" content would also grow. The argument appealed to everyone to accept sharing of content though YouTube (K. Moudhgalya, personal communication, 2007). Without YouTube, there was no other mechanism in 2007 to distribute taped content that was effective for reaching out to students and teachers in India and around the world.

IIT Madras, along with IIT Kharagpur and IIT Delhi, immediately undertook the mammoth exercise of compressing every one of more than 4,900 NPTEL video lectures in SD broadcast format (about 13.5 GB per hour) into mpeg4 Part 10 at 512 kbps bitrate for Internet streaming and began uploading them to YouTube from November 2007 onwards. A few years later, 3gp for mobile viewing was also made available with the help of a private education service provider, Classle Inc.[1] In addition to these formats, mpeg4 files with a 1.2 mbps bitrate were also available to institutions that wanted NPTEL video lessons for classroom projection screens. The NPTEL YouTube channel[2] hosts currently more than 17,800 video hours and has a channel view of about 142.7 million and a subscriber base of 400,000.

Many users wanted to download videos, but many institutions in India still treated YouTube as a banned entity inside the college campus. The National Knowledge Network (NKN), which was launched by the Ministry of Communications and Information Technology, gave generous bandwidth to IIT Madras for hosting the entire NPTEL video content in IIT Madras and has provided able network support and network security to the site. Thus, NPTEL is synergising the efforts of independent projects arising from two different ministries to ensure that users have multiple channels and access to NPTEL contents from their campus network as well. Mirror sites of NPTEL are being created at several locations to ensure that downloads are facilitated and speedy.

Through conscious efforts of many of its partner institutions and faculty, NPTEL proposed that all its contents be distributed under a Creative Commons Attribution-NonCommercial-ShareAlike licence (CC BY-NC-SA) in 2012. In July 2014, following the OER World Congress declaration in 2012, and with support from the regional centre of the Commonwealth of Learning in New Delhi, the

1 https://www.classle.net
2 http://www.youtube.com/iit

MHRD formally dedicated all contents generated under the National Mission on Education through Information and Communication Technology (NMEICT) to the citizens of India, removed the NonCommercial restriction and adopted a Creative Commons Attribution-ShareAlike (CC BY-SA) policy (NMEICT, 2014). This was a significant step because it allows commercial developments to be built around NPTEL and other contents, all of which are funded under NMEICT, with the developers sharing one public version freely through the Web.

The NPTEL has since adopted a CC BY-SA policy. The policy has evolved over a time to reflect the conviction of some individuals and the national goals that content be freely shared with large numbers of learners. Understanding and appreciating open licence in the context of legal and moral rights of the authors have been major challenges. Adopting a Creative Commons licence is a commitment, as it is a granting of rights in perpetuity: the licence can be neither revoked nor changed to a more restrictive open licence.

Significance of the NMEICT Open Licence Guidelines

The adoption of CC BY-SA policy by NMEICT is a milestone in sharing educational content at a national level. This is the second instance within the environment of government educational institutions when such a licence was adopted. The first was the National Repository of OER (NROER) hosted by the National Council for Educational Research and Training (NCERT), mostly for school-level educational materials. The guidelines emphasised that the policy of adopting this is "to foster an environment of openness, collaboration and a culture of sharing, reuse and adaption amongst institutions and teachers to enhance the quality of education in the country." It is also believed that CC BY-SA will help make available non-digitised OER either freely or at low cost, and teachers in remote parts of the country can localise available materials, including translation.

As a result of the guidelines, many other resources besides NPTEL are now available under the same Creative Commons BY-SA licence, not only for citizens of India but for everyone in the world to learn and contribute in a fair and equitable manner: virtual labs; undergraduate educational content in more than 75 subjects; a design programme (E-Kapla); spoken tutorials; courses developed as Massive Open Online Courses (MOOCs) and under NPTEL Online Certification; educational enterprise resource planning software programmes and other software tools developed with NMEICT funds; Brihaspati (a combined learning management system and content management platform); and many new developments that are peer reviewed and certified by experts.

This surpasses all OER developments in the world to date.

References

Krishnan, M. S. (2013). National Programme on Technology Enhanced Learning (NPTEL): OER and beyond. In G. Dhanarajan & D. Porter (Eds.), *Open Educational Resources: An Asian perspective* (pp. 239–247). Vancouver: Commonwealth of Learning.

National Knowledge Commission (NKC). (2007). *Open Educational Resources*. Retrieved from http://knowledgecommissionarchive.nic.in/downloads/report2009/eng/3_Recommendations.pdf

National Mission on Education through Information and Communication Technology (NMEICT). (2009). PAB meeting minutes of 8 Sept 3 and Sept 11, 2009. Retrieved from http://www.nmeict.ac.in/officeDocumentUploaded/19-5-2014/2009-09-11_Meeting9.pdf

National Mission on Education through Information and Communication Technology (NMEICT). (2014). *Open licensing policy guidelines*. Retrieved from http://www.sakshat.ac.in/Document/OER_Policy.pdf

National Programme on Technology Enhanced Learning (NPTEL). (2007). Project document. July 2007. Available from http://nptel.ac.in/pdf/NPTEL%20Document.pdf

UNESCO. (2002). *Forum on the impact of Open Courseware for higher education in developing countries. Final Report*. Retrieved from http://unesdoc.unesco.org/images/0012/001285/128515e.pdf