

The Emergence of Thai OER to Support Open Education

Titima Thumbumrung*, Boonlert Aroonpiboon and Kornkorawee Changkid

Science and Technology Knowledge Services

National Science and Technology Development Agency, Ministry of Science and Technology, Thailand

Introduction

With Information Communication Technology (ICT) development, a large number of educational resources can be accessed through the internet. However, access to those resources is usually limited to registered students and users within specific institutions. In the early 2000s, academic institutions such as Massachusetts Institute of Technology (MIT) broke barriers to access and use of educational resources by opening access to their resources to another institution as Open Educational Resources (OER).

In Thailand, despite continuous efforts to reform the country's education system for almost two decades, there were still issues that need to be tackled. For instance, rural and distant schools lacked teachers and educational materials. Also, disadvantaged children and young people lacked opportunities to access education and knowledge. These issues impacted on the development of human resources for the country's development.

Purpose

This poster aims to present the practical work of the development of Thai Open Educational Resources (OER), a nationwide online system which provides open and free educational resources to all users anywhere and at any time by using ICT and cross-community collaboration.

Development of Thai OER: mechanisms, technical sides and collections

Thai OER (<https://oer.learn.in.th>) was started in 2015 under the Online Learning Resources for Distance Learning project, the Initiative of Her Royal Highness Princess Maha Chakri Sirinhorn.

Thai OER is implemented by the National Science and Technology Development Agency, Ministry of Science and Technology, with funding support from the Ministry of Education and collaboration with more than 3,000 organizations and individuals in both the public and private sectors to share their educational resources through Thai OER under a Creative Commons (CC) license.

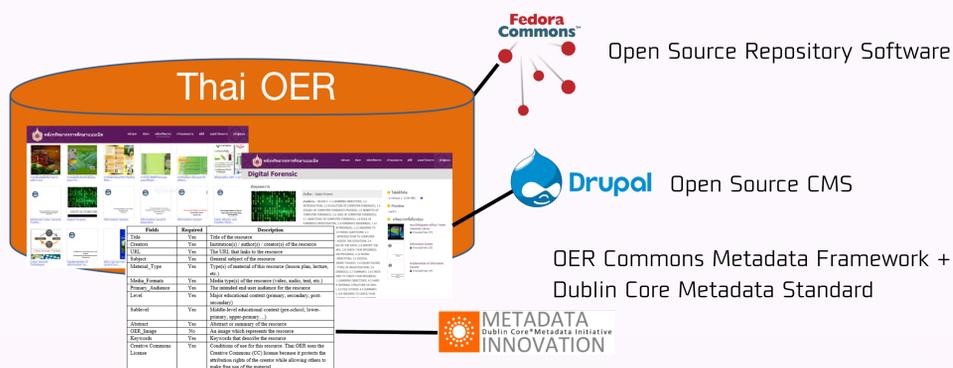


Figure 1: Technical sides of the development of Thai OER

Thai OER was developed by using Fedora Commons, an open source system for digital content management and dissemination. Fedora REST API was used to facilitate interoperability with client application. Drupal, a popular open source content management system, was tested for use as a user interface. It was used because it was highly adaptable and customizable. Thai OER selected and adopted the OER Commons Metadata Framework which was based on the Dublin Core Metadata Standard, an internationally acceptable metadata standard.

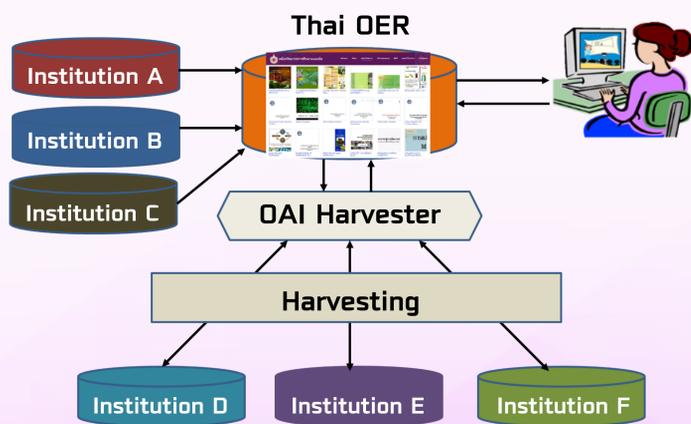


Figure 2: Technical sides of the development of Thai OER

OAI-PMH was used to facilitate the diffusion of metadata between Thai OER and other institutions. Each digital object in Thai OER was kept in Fedora and its set of descriptive metadata were indexed and searched by Apache Solr. 4 Virtual Machines (VM) were used to provide functionality of physical computer.

Thai OER provides more than 40 different types of educational resources, such as e-Books (in different formats such as PDF, ePub and DAISY), articles, images, paintings, animations, clip art, audio files, video clips and digital archive materials, for different types of users.



Figure 3: Thai OER homepage



<https://oer.learn.in.th>

These resources cover a range of topics in science and technology, humanities and social sciences, including Thai local wisdom and knowledge. All users who have access to the internet can access the resources anywhere and at any time, with free of charge. As of August 2018, a total of **3,782,277 users accessed Thai OER** and **7,011,492 educational items were downloaded**.

The Thai OER system could handle approximately **3,000 concurrent** requests. Presently, the system is replicated by 8 organizations in Thailand.

Results

Thai OER created benefits for different levels in Thailand as follows.

- i. Thai OER supported open, flexible and lifelong learning in the country by providing access and use of OER to users anywhere and at any time, free of charge.
- ii. Thai OER promoted academic morality and ethics through training on intellectual property and copyright awareness. More than 5,000 students and teachers were trained.
- iii. Thai OER encouraged social movement and cross-community collaboration to produce and share OER together in Thai society.
- iv. Thailand had its central OER repository to collect and share knowledge and OER, especially Thai local and wisdom knowledge which serves as a source of Thai identity.

However, there were 4 significant challenges relevant to the development and adaptation of OER in Thailand as follows.

- i. Many Thai rural and distant areas still lacked ICT access, band-width and connectivity. This situation impacted on the access and use of Thai OER. Therefore, offline solutions and ICT infrastructure development need to be considered.
- ii. Many Thai institutions had insufficient resources for digitization and digital content creation. Therefore, there is a need to explore new funding sources and business models.
- iii. There was a lack of institutional policies that focus on cross-organizational collaboration to encourage staff members to participate in the activities of Thai OER. Therefore, inter-institutional collaboration policies should be developed.
- iv. Knowledge and awareness about digital literacy skills, especially intellectual property and fair use, of most Thai students were still limited. Therefore, there is a need to improve knowledge and awareness about digital literacy skills for students and relevant people.

Conclusion

Many countries around the world, including Thailand, have joined OER activities. Thai OER was initiated to reduce gaps in educational and knowledge access and usage of students, teachers and learners in the country, especially disadvantaged people. It also aimed to support open education and lifelong learning in the society. However, the development and adaptation of OER in the developing country, Thailand, has challenges included: providing effective and sufficient resources for OER activities; developing OER policies at national and institutional levels; and developing knowledge on intellectual property and fair use in the digital age in the society.