Expanding the OER Community by Showcasing a Development Model that Works
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Abstracts

The concept of open educational resources was relatively new among public universities in Malaysia. In 2011 only two universities were registered as a member of the OpenCourseWare Consortium and Universiti Teknologi Malaysia (UTM) was one of them. However, in a period of less than one year after becoming a member of the consortium, UTM managed to publish 70 courses in its ocw website and this was achieved without any monetary reward given to the course authors. The process used to develop the courses started by selecting potential courses from the university e-learning portal. Authors of the courses were invited to workshops especially designed to assist them in converting the lecture notes into OCW publication materials. The normal procedure in OCW development that is checking for copyright and other issues, identifying figures to be redrawn and designing the course for online publication took place during the workshop. Later, individual graphic designers were assigned to each course to assist the author in recreating the figures, if necessary. The software used as the in the ocw website is the same software used as e-learning platform. Next, the IP of the published material was assigned to the respective authors. As a results of this success story, other universities in Malaysia are now looking at their own potential as contributors to OER and the initiative is now seen as one way to contribute to the society and not as a mere branding exercise. OER development is now is becoming a national project and public universities in Malaysia have agreed in principle to form a national OER consortium. By having a consortium, instead of competing with each other and recreating established courses, the universities will focus on the development of courses related to their niche areas. Based on this positive development, it is hoped universities in Malaysia will become major contributors to the global repository of open educational resources.

Keywords
Open Educational Resources, OER, OER Malaysia, OpenCourseWare.

Introduction

Global trend in teaching and learning is to encourage the sharing of knowledge through the use of technology, particularly the internet. World renowned universities have long been providing access to courses and learning materials produced by their academics, for free. This can be seen as contributions to the global community and also as a means of to attract good students. Today we see the emergence of Massively Open Online Courses (MOOCs) offered by leading universities such as Stanford, MIT and Harvard, and taken by hundreds of thousands of students around the world (Kop & Fournier, 2011).

Open educational resources (OER) are any educational resources, including course materials, textbooks, video, multimedia applications, which are produced for the purpose of teaching and learning, which are available publicly by educators and students without any license fees or royalties (Butcher, 2011; Johnstone, 2005). Although OER is always associated with OpenCourseWare pioneered by MIT, it actually covers a much wider scope and not limited to only the course materials.
This paper will describe the implementation of OpenCourseWare initiative in Universiti Teknologi Malaysia (UTM); the strategies used to increase contributions from faculty members and finally plan to form a national consortium of public universities in Malaysia to establish a repository of open educational resources that will be shared with learners from around the world.

**OER in Malaysia**

Malaysia is a multi-ethnic, multilingual and multi-religious country with a population of about 28 million. At present Malaysia is placing great emphasis on building a knowledge community by increasing the number of citizens with access to higher education. The post-secondary sector in Malaysia is made up of some 20 public and 32 private universities. Additionally, there are some 450 colleges and six branch campuses of offshore universities. These numbers are expected to increase as Malaysia opens up the private education space to international participation. Scores of investors in the education sector, from almost all of the English-speaking countries, are lining up to establish colleges and universities in Malaysia.

Open educational resources (OER) are a relatively new phenomenon in the Malaysian higher education (HE) sector. There are several Malaysian Universities such as Wawasan Open University (WOU), Open University Malaysia (OUM), Universiti Teknologi Malaysia (UTM), and International Medical University (IMU) and also there have been individuals strongly advocating the use of OER in Malaysia (Dhanarajan and Porter, 2013). There are also educators who seem to be reluctant to make their contents freely available to the world. This is due to lack of understanding in the licensing mechanisms and also the absence of policy directions. However, a committee such as Malaysian Public Universities e-Learning Council (MEIPTA) do take a serious look at adopting an institutional policy on OER and digital resources. Their effort might have shown a positive outcome when recently, in 2013, Ministry of Higher Education (MOHE) launches a National OER policy, which could inspire Malaysia towards becoming a leading nation in this area in the coming years.

**Brief history of OER in UTM**

Universiti Teknologi Malaysia (UTM) is one of the earlier and strong supporters of OER in Malaysia. It is a public university with student population of about 20,000, majoring mainly in the Sciences an Engineering programmes. At present, there are three major projects which can be considered as open educational resources initiatives in UTM. They are the open access UTM Institutional Repository, a video sharing facility called UTMotion and the latest project is UTM OpenCourseWare.

**UTM Institutional Repository**

One of the early initiatives by UTM to provide free access of the scholarly materials published by the university is through a project called UTM Institutional Repository. The main goal of the initiative is to give free and unlimited access to scholarly publications of academic staff, researchers and students of UTM through the internet. UTM Institutional Repository (UTM-IR) is a collection of scholarly and research publication of the university in digital form. It is a web-based platform which collects and preserves output of university research and publication in compliance with the requirement of open access policy. The other objective is to highlight UTM scholarly works and research output to the global community.
At present, the repository consists of theses, journal articles and conference papers and can be accessed from the following url: http://eprints.utm.my/. Contents of the repository can be browsed by year of publication, by subject matter, by field of studies and by type of publication. A search facility is also available. The latest statistics shows that number of records in the database exceeds 24,000. The repository is also listed in the 'Directory of Open Access Repositories' (OpenDOAR). This allows contents of the repository to be searched from the URL http://www.opendoar.org/.

**UTMotion**

Initially, UTMotion was an initiative by UTM Centre for Teaching and Learning to facilitate sharing of multimedia resources, in particular audio and video clips for teaching and learning purposes. Typically, a lecturer would upload a video clip to the server and a link is created in the e-learning portal. Recognizing that this facility can be accessed by users from around the world, the use of UTMotion has been extended to a variety of other purposes such as promoting UTM to the global community, promoting expertise and research findings, archiving important events held in the university, and promoting students and staff activities. Unlike video services offered by most other institutions, UTMotion is based on the concept of web 2.0 and it opens up a broader space to encourage creative and innovative thinking among its users. All staff and students not only able to download videos but they can also upload their own videos for sharing with users around the world. Additionally, UTMotion also lets users to form groups with similar interests and to create playlists. To summarise, the facilities available in UTMotion is very similar to those available in the famous online video sharing, YouTube.

![Figure 1: Main page of UTMotion](image-url)
UTMotion system can be accessed from http://utmotion.utm.my and the audio and video clips are categorized into nine channels, namely:

- Creative Works
- Library Resources
- Research and Development
- Student and Staff Activities
- Teaching and Learning
- University Events
- University on Press
- Vice-chancellor Gallery
- Zoom UTM

For example, lecturers will upload videos related to learning in their class to the Teaching and Learning channel. The uploaded video could be simple animations explaining certain concept or process or a recording of their lecture in the classroom. The videos are accessible by users around the world for free. In addition students are also allowed to upload video or audio recordings that they produce, through creative works channel. At present, there are more than 1,300 videos of various categories have been uploaded and teaching and learning accounted for almost half of these.

**UTM OpenCourseWare**

In March 2011 UTM officially became a member of the OpenCourseWare Consortium which consists of more than 250 universities from around the world. As a member of this consortium, UTM pledged to share digital learning materials developed by the academic staff based on courses offered in the university with users around the world, at no charge. A screen shot of UTM-OCW website is shown in Figure 2 and can be accessed from http://ocw.utm.my.

There are many benefits that can be gained from UTM’s involvement in the OpenCourseWare project such as users from around the world can share learning materials developed by lecturers in UTM. This partnership is seen as UTM’s contribution towards improving the quality of education among students not only in the country but also worldwide. Second, UTM is often seen as the leading university in the region that offers various programs in science and engineering. Through the learning materials that are distributed through the OpenCourseWare initiative, the community will be able to assess the strength of UTM in the field. Indirectly, this will attract the good students to pursue their studies here at undergraduate as well as postgraduate level.

Since the course materials published on the UTM-OCW website reflect the expertise of its lecturers and the quality of its courses, a development process which puts emphasis on quality must be put in place. The OCW committee has developed a procedure that must be adhered to in the development and publication of OCW materials and it is summarised in Figure 3.
UTM is a leading innovation-driven, entrepreneurial research university in engineering, science and technology located both in Kuala Lumpur and Johor Bahru, Malaysia. It is renowned for being at the forefront of engineering and technological knowledge and expertise. UTM as the biggest postgraduate research university in engineering and technology has also established a reputation for innovative education and leading-edge research, with a vision towards the development of creative human capital and advanced technological innovation.

UTM OpenCourseWare is a collection of high quality digital learning materials based on courses offered at this university. The learning materials, in a complete course format, may include lecture notes, lesson plans and exercise questions. As a member of the OpenCourseware Consortium, UTM pledged to publish learning materials based on courses taught at this University to users around the world, at no charge. Sharing our course materials with the world is one of our contributions towards improving the education system worldwide.

**Figure 2:** Main page of UTM OpenCourseWare website.

**Figure 3:** Workflow for development and publication of an OpenCourseWare in UTM
Development of OCW in UTM

As a member of the consortium, UTM has promised to upload at least ten courses for the first year. However this was not an easy task, considering the fact that the concept of open courseware is relatively new among the lecturers. UTM participation in such a project had also raised many questions by the academic staff with regard to its implementation. Many of them are concerned on the prospect of ‘giving away’ their lecture notes and also on the copyright issues as stated by Mohamed Amin Embi (2013). Although many academics are willing to share their work, they are often hesitant as how to do this without losing all their rights (Hylén, 2006). To make the existing course materials suitable for Open Educational Resource requires investment, time, and energy. In the case of UTM, the university did not provide any allocation for monetary reward to be given to the course authors that contribute to this project. Therefore, the UTM Centre for Teaching and Learning (CTL) had adopted the following strategies to encourage participation among academic staff.

**Strategy 1 – Promotional activities among the community**

In UTM, the OpenCourseWare project is implemented by a committee headed by the Deputy Director of Centre for Teaching and Learning. Members of the committee include representatives from the Center for Information and Communication Technology and representatives or champions from various Faculties and Schools in UTM. All Committee members were appointed by the Vice Chancellor of UTM himself. As stated by Yuan et al. (2008), policies that emphasise educational innovation and organisational change in educational institutions are one of the long term enabler to OER initiatives.

The first decision made by the committee was to use software similar to the university's e-learning system as a platform for the OpenCourseWare website. The reason for using the same software was to avoid technical difficulties among lecturers who are involved in developing the learning materials. Yuan et al. (2008) also state that one of the inhibitors on OER initiative is if the creation and sharing of OER required considerable effort in training and support.

At the beginning of the project, CTL took the initiative to inform all lecturers about the OCW project. This is to ensure they understand why UTM participates in this project as well as to promote the concept of open resources among faculty members. Schools and Faculties were asked to nominate names of lecturers who might be interested to participate in the project. They were given a briefing in a half day session regarding all aspects of OCW.

The committee also participated in promotional activities during the university Open Day where brochures were distributed to inform the university community about the project. Lecturers who were interested to contribute their materials were invited to join a two day workshop held during the weekend and away from the campus. The goals of the workshop were for the lecturers to check the contents for copyright issues as well as to redesign the materials, making them suitable for publication in the UTM-OCW website.

**Strategy 2 - Active e-learning courses**

Once the information has been disseminated to the majority of academic staff in UTM, the second strategy that we used to obtain course materials was to invite lecturers who have uploaded their lecture notes to the university’s e-learning system to participate in the project. We were quite fortunate as most of the invited lecturers agreed to contribute to the OCW project. This is probably due to the fact that all their course materials are already in digital...
format. To ensure a smooth work flow for the implementation of the project in UTM, a special workshop was held to allow owners of the learning materials to edit and refine their teaching materials. During the workshop, owners of the materials updated their lecture notes and more importantly, ensure all pictures and illustrations that appear in their course materials were free from any copyrights issue. Figures with questionable copyright status were re-drawn and re-designed with the assistance of designers and graphic artists from CTL. The workshop produced significant results where more than twenty courses were completed in one session and ready to be uploaded to the University OCW web site.

Figure 4: An example of a course from the UTM opencourseware website.

Strategy 3 - Faculty nominated courses
The third strategy that we used to get contributors to the project is by informing the Dean of all faculties in UTM and requests nomination from their respective faculty. The names nominated by faculties were asked to join the half-day workshop where they were briefed about the project in detail. Those who are willing to contribute were invited to attend any of the two-day development workshops which have been planned to be conducted at least three times a year. As usual, during the workshop, owners of the materials will edit and refine their notes and to ensure it does not breach any copyrights infringement.

Whenever the workshop date has been set, CTL will send email messages to all lecturers, inviting them to join the workshop voluntarily. This invitation is meant for lecturers who are interested to contribute their materials but they were not nominated by their faculty. This group of lecturers had prior knowledge about OCW from their colleagues or from our promotion activities described above.

The strategies used so far produced encouraging results where on average about twenty courses were completed in each workshop and ready to be uploaded to the University OCW web site. Based on this successful work-flow, the same process will be implemented in the
future. At present, more than 80 courses have been published in the UTM-OCW website. The full list of available OCW materials can be viewed at the UTM-OCW website (http://ocw.utm.my).

Through the strategies described in this section, it is expected that UTM will be able to publish about 100 open courses each year. This will guarantee that the target of 500 courses to be published online within the next five years will be accomplished.

OER Malaysia project

The success of UTM OpenCourseWare initiative has prompted other public universities in Malaysia to share their resources and one of the initiatives that have been agreed upon is the establishment of Malaysian Open Educational Resources Consortium (OERM). Funding for this project will be provided by the government as well as contributions from member universities.

In order to ensure a smooth running of the project, it is proposed OER Malaysia will be implemented gradually in three main phases. In phase one of project, OERM will provide an index to existing OER materials that have been produced by academics in Malaysia. All public institutions of higher learning are, by default, a member of the OERM Consortium and each may have their own OER server. Academic staff of university can contribute to OER in their respective universities and indexed in OER1M through RSS feed. The quality of uploaded materials will be the responsibility of each university. Therefore, every university should establish their own mechanism for evaluation and quality control. Learning materials can be in the form of general OER or OCW or must use creative commons license.

In the second phase of the implementation, the OERM will act as a repository for open learning materials produced by academics in higher learning institutions in Malaysia. In order to have greater impact, every university should focus on the production of OER materials in their niche areas. This is to avoid repetition and duplication of work in the published materials. Obviously, this second phase requires additional staff to manage the repository, to implement the peer review process as well as technical staff to operate a centralized server. Besides that training programs related to the development of OER materials will also be implemented in a more systematic way so that academics in Malaysia will be able to produce quality learning materials.

The third phase of implementation of OERM will be focused on producing OpenCourseWare and for the implementation of MOOCs where the material published in OERM are also ready to be offered for credit to students from around the world. Any students taking courses offered for credit by OERM will be recognized by all universities in Malaysia. This encourages student mobility between universities, especially for required courses that must be taken by all university students for graduation purposes.

Some of the objectives for the implementation of OERM are:

- To foster cooperation among higher learning institutions in the country in order to increase the number of citizens receiving training at the tertiary education.
- To provide access to knowledge resources accessible not only to the people of this country but also to educators and students from around the world.
• To provide a platform for academic staff in the country to showcase their expertise in these areas.
• To attract good students from abroad to study in Malaysia.

The existence of OERM which will be championed by higher learning institutions will position Malaysia as a contributor to the body of knowledge in the global scene. Since the materials can be accessed from around the world, this will increase the visibility of education in Malaysia. Indirectly this will attract good students from all over the world to pursue their tertiary education in this country. Involvement of public universities in this project will make higher learning institutions more visible on the world map of higher education and will contribute to the branding and global ranking of Malaysian universities.

Conclusion

The implementation of OER project in a university requires sound strategies to ensure its success. In the case of Universiti Teknologi Malaysia several strategies have been adopted and resulted in positive response from the faculty members. The success story of one university had attracted participation by other universities in the region in the OER initiative. This eventually will result in the sharing of resources among universities to establish OER initiative for the country.

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