

Development and Delivery of an OER based University Course: Wawasan Open University Experience

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INTRODUCTION

Wawasan Open University was established in 2007, by a charitable foundation, with a mission to provide low cost, flexible access to higher education for Malaysian adults. The vision statement is “**we aspire to be a vibrant learning community that inspires learning, supports innovation and nurtures all-round personal growth**”.

Since its establishment the University used flexible modalities to make higher education accessible to all – anytime, anywhere – and to create a lifelong learning community for aspiring individuals regardless of their previous educational, ethnic or socio-economic background. All the programmes of the University aimed at offering undergraduate and postgraduate programmes are of good quality and market driven.

So far more than ten thousand working adults have been benefitted in acquiring the new skills and knowledge in a given field of specialization. This has helped most of the adults in finding vertical mobility in their occupation and also finding new jobs. The efforts also have helped these adults in getting social recognition and personal satisfaction of achievement in view of their acquiring degrees.

As on date, WOU offers more than 44 programmes comprising of about 25 courses per programme (with overlap across programmes) ranging from the sub-degree to postgraduate levels in the fields of business, technology, education and liberal studies have been developed and delivered. About nineteen programmes have received recognition from Public Service Department

COURSE DEVELOPMENT MODELS in WOU

The University adopted different models for course development. The first and foremost being the adoption model. In this model the materials were adopted from the Open University of Hong Kong (OUHK) by paying certain amount of fee as royalty to OUHK. The second model was wrapping around text book course materials, which involved course materials revolving around the content of the text book. In this model the students received the course materials including the text book. The third model was non text book based course materials. In this model the material was developed by the writer on his/her own keeping in view the content outline approved by the Senate and regulatory agency. Each of these models had certain advantages and limitation in terms of development cost, time taken for development, quality of materials, ability level of the course writers and expectations from the course writers.

TOWARDS OER INTEGRATION

In continuation to the three models the University attempted to try out another model –OER integrated course development. The University’s Open Educational Resource (OER) based course development model adoption achieved three positive things in one stroke- substantial cost reduction in course development and delivery, expected quality enhancement due to use of variety of OER multimedia resources and increased internal capacity for innovative course design and development. The activities of OER Asia in the year 2010 and the appointment of a senior professional with expertise in ODL and OER provided impetus to the OER initiatives of the University. **The ICT in Education** is one of the two courses which the University attempted to develop as an OER integrated course.

DESCRIPTION OF THE COURSE

'ICT in Education' is a one semester compulsory course designed for students who are enrolled in the **Masters in Education** programme of the University. The course is of 5 credits requiring of 200 hrs of study .

The course aims at developing knowledge and understanding of ICT related concepts, inculcating skills of using this knowledge in enhancing learning achievement. The other aim of the course is developing reflective and decision making abilities in planning and implementing ICT applications at micro and macro educational situations.

Learning outcomes:

The learning outcomes of the **ICT in Education** included the following:

- Demonstrate knowledge and understanding of ICT related concepts.
- Demonstrate the skills of using ICT in enhancing learning achievement.
- Analyse the characteristics and scope of ICTs as tools for teaching and learning.
- Discuss the use of ICT's to effectively support the delivery of lessons in different disciplines.
- Elaborate the policies, planning and challenges in using ICT in education

The course is organised into five units and twenty two sub-units covering topics on Information and Communication Technologies (ICT) in Education that are required for achieving the learning outcomes.

Course Development

The course **ICT in Education** was initially planned to be developed as standalone material without text book input (third model) and accordingly the course outline was carved out from the learning outcomes which was listed in the course blue print. Later based on a continuous interaction among the two key members of the course development team decided to explore the possibility of developing the course as OER based. In view of this decision a slight rearrangement was made with respect to the content and changes in unit and sections titles.

Course Organisation

The content of the course ICT in Education are organised in to 5 units to meet the requirement of the house style. Each unit constituted about 4 to 5 sections and each section had few learning objects. In addition a course guide is developed which provided the course overview, course outcomes, assignment and examination policy, estimated time distribution across various activities and other guidelines for learning through the course, which helps the students to get a over a view of the course before they go through the actual course.

Units	Unit Titles	Sub units Titles	Number of OERs YouTube videos, materials used with permission and other references
1	Introduction to ICT	Introduction to ICT, Technologies in Education. Implications for Learning with Technologies. Educational Technology ICT based Education.	7 YouTube videos 14 OER sources including materials with permission 26 non OER references
2	Integrating technology in curriculum transaction	Theoretical basis for Learning Designs. Instructional Technology. Computer Mediated Instruction. ICT in Teacher Training.	4 YouTube videos 19 OER sources including materials with permission 18 non OER references

3	ICT tools and instruction	New Tools for Teaching. Videos and Audio-visuals. Digital Camera, digital camcorders and Mobile Devices. Social networks and Social Media.	4 YouTube videos 13 OER sources including materials with permission 23 non OER references
4	Visualising with technologies in education	Visual Learning. Visualisation in Humanities. Visualisation in Teaching Mathematics. Visualisation in Teaching Science and technology. Games.	5 YouTube videos 13 OER sources including materials with permission 19 non OER references
5	Implementation of ICT for teaching and learning	Policy Planning and Implementation Diversity and Inclusion. Learners in Remote Locations. Educational Management Information System. Emerging Trends in Education.	10 YouTube videos 16 OER sources including materials with permission 23 non OER references

The units were structured as per the house style with a little modification to accommodate the requirement of the OER based course and to accommodate the potentials of OER resourced used

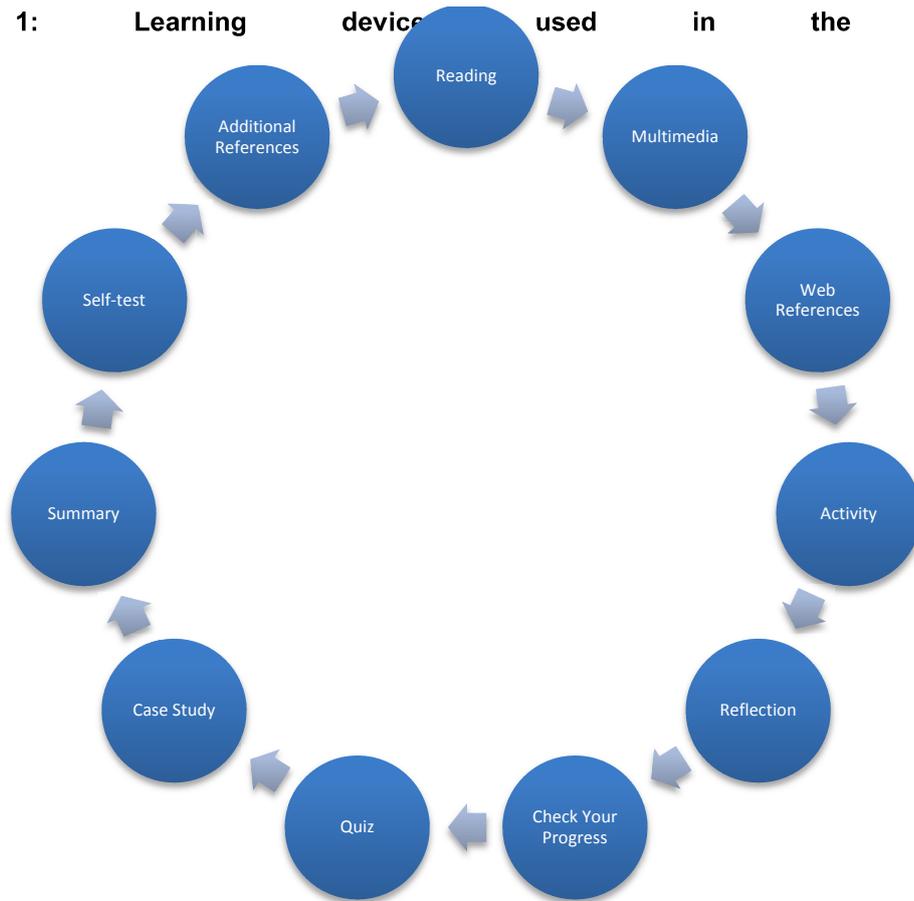
Development Process

Each of the five units had an introduction and unit outcomes and unit summary and each sub-unit had an introduction, outcomes and summary. The subunits consisted of 2-4 sections/sub-sections and these include various inbuilt learning devices to ensure that learning process do happen leading to the expected learning outcomes. These learning devices were identified and designed to suit the situated learning design (SLD) adopted considering that this is a course for professional development of teachers. In the best traditions of good pedagogical practices course writers wrapped instructions around the OERs to guide students in their learning.

This course was designed in such a way to facilitate students move easily from the stated objectives through the required learning devices with appropriate logical sequencing so that each learner will be able to go through a process involving experiencing, applying, reflecting and conceptualising in a unique and individualised manner within each unit of the course.

Figure 1 presents the varied kinds of learning devices included in each sub-unit of the course. In addition the learners were required to complete two tutor-marked assignments (TMAs) and a final examination. The assessment process will expect students to learn and fully utilise the course materials, read extra materials related to this course, discuss topics of interest with peers and tutor, demonstrate comprehension of the concepts learnt, integrate course concepts and knowledge with learner's own experience and observations and apply these concepts to a variety of situations.

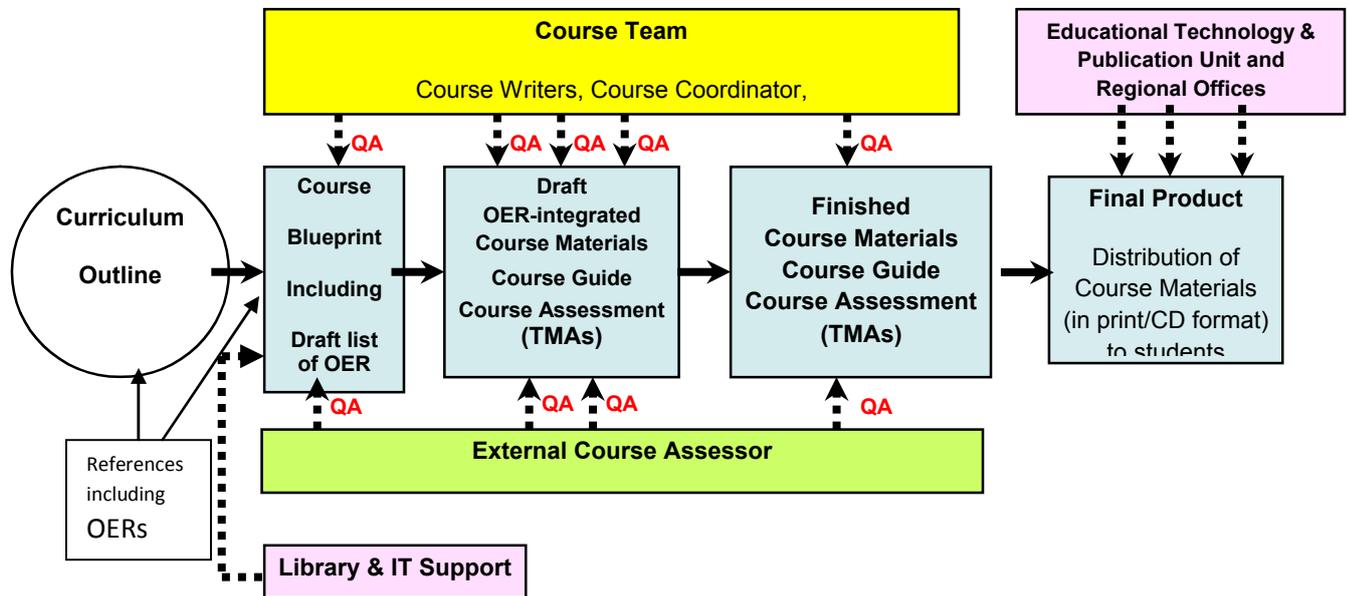
Figure 1: Learning devices used in the material



In all sub-units of the course material the learning devices given in the figure are appropriately included to facilitate learning. Different types of OER materials were used such as book chapters, conceptual and research articles, case studies, different still visuals, stream video and podcast for supporting learning, quizzes, and activities so as to ensure the students read, comprehend, contextualise and reflect.

The course materials developed by reusing and re-focussing the suitable OER materials went through the normally adopted quality assurance process followed in the University which consists of a number of steps of formative evaluation and revision. Course materials development in WOU is governed by a rigorous procedure with strict adherence to a code of practice for academic quality assurance and standards. The process involves a number of important stakeholders. This was followed with the required modifications to suit the special QA requirements while using OER. Figure 2 presents the QA processes followed by WOU in an OER integrated course development practice.

Figure 2: QA Processes in OER integrated Course Development



Even with the identification and adaptation of relevant OER materials in developing course materials, QA processes as indicated in **Figure 2** was applied to ensure academic quality and integrity. However additional quality measures were ensured to meet the requirement for using OER materials to develop a course like **ICT in Education**.

The draft materials by the writers were reviewed by the Course Coordinator (CC) and edited for design compliance by the Instructional Designer (ID) before it was subjected to a review by the External Course Assessor with regard to content correctness, suitability of OER used and effectiveness of the learning devices.

Delivery of the course

The finished product was made available to students on a CD. It was also up loaded to WOU's LMS viz. *WawasanLearn*. *WawasanLearn* has web components such as templates for content pages, discussion forums, quizzes and exercises to engage learners while they practice with the course material, acquire new material and collaborate with the tutor and fellow students. With *WawasanLearn*, we can deliver learning content and resources and thus provide a seamless always-on access to tutors and other learners for them to "meet" and interact with each other. *WawasanLearn* includes access control, provision of e-learning content, communication tools and administration of user groups. *WawasanLearn* also offers features such as assignments, forums, discussions and quizzes. In addition to the materials supplied on the CD, 5 tutorial session of 2 hrs each was arranged. To facilitate the transaction in the tutorials a tutor guide was prepared and provided to the tutor.

EVALUATION AND FEEDBACK

During the course development stage the feedback received from the instructional designer and external course assessor was incorporated. Further with a focus to bring in improvement in different aspects of the course, the course team made efforts to get the feedback from the students and experts.

Feedback from the students

The feedback was obtained from 8 students who were enrolled for the course during July semester of 2012. The feedback is consolidated. The students were of the view that

- Content are relatively easy to comprehend and more enriching as audio and video inputs are provided
- Happy with examples and illustrations provided
- The reflection part of the materials is interesting and helpful to compare our reflection with those suggested.

Feedback from experts

- The course package could be an e- book and this format holds a special promise.
- Contents are really good for the first cut, materials are highly relevant and mostly recent
- The course is comprehensive and represents a great foundation for taking the next steps

Suggestions received from the experts

- Need to check about creative Commons status and attributions. Few are possibly copyrighted references that could be avoided.
- Avoid using HTML engine that binds the content and presentation, use e-book authoring environment.
- Need to provide advice on how to use web resources like YouTube videos and how to take notes
- For the learners to interact with peers and share the experience using Wawasan Learn needs emphasis
- The contents could be broken in to individual sections/units so that the files can be downloaded quickly
- Certain study schedule could be prepared like one week, two weeks and accordingly students could download the materials to avoid the difficulties if any in downloading materials
- Appears too much text , try to reduce the textual information
- Arrange for a system to help students to record their learning using some sort of journal function

IMPACT OF THE PILOT PROJECT ON THE UNIVERSITY'S POLICY AND ACTIVITIES.

The present project which involved integration of OERs in course development was being carried out parallel to a series of internal discussions and activities leading to the formulation of an OER policy for the University. The success of reuse and repurpose of online multimedia OER materials demonstrated in the project was one of the major factors which influenced the academic community in WOU to decide on the adoption of OER. The activities involved are the following:

- Constitution of an OER Steering Committee to plan and monitor OER adoption process.
- Development of 'OER Integration in WOU-Policy Directions, Strategic Outputs and Action Plan' (Menon, 2012)
- Development of a WOU- OER Policy (WOU, 2012)
- Formulation of an Open Licence Policy (2012) with CC-BY-NC-SA
- Training programmes for the academic faculty on concepts and issues relating to OER covering about 50% of the faculty and initiatives by the faculty to revise existing text based courses or developing new courses (partial or full course) based on OER resources

CHALLENGES FACED

It is often believed that availability of digitised OERs will by itself lead to adoption/adaptation of these resources by many teachers in their classroom use and ODL institutions for developing their course packages which are quality assured and appropriate to their contexts without infringing on copyright regulations. However, the reuse of OERs in the present course did throw out a number of challenges. The major challenges faced by the course team included uncertain quality of available OERs on the internet, difficulty of combining resources with various types of licences, resources not showing any open licence but could be available on request, resources which are modified continually and difficulty of using open access with extreme restriction of use

LESSONS LEARNT AND FUTURE DIRECTIONS

The experience of developing and delivering a pilot project on OER integrated course on ICT in Education has resulted in making certain suggestions for development of OER based courses.

- To a question whether to finalise curriculum and then search OER materials or have a draft curriculum, search for OERs and then revise and finalise curriculum. The latter one appears to be the best model.
- While searching the OERs, search and list the optimum number of text and multimedia materials, then analyse each, prioritise and select the right combination of text and audio-visual materials keeping in view the load and depth of the course.
- Better to have a policy in place and bring in awareness of it among all stake holders
- Need to provide training to the course writers on issues such as concept of OER, searching and evaluating OERS, identifying the type of licences, the modes of integration, the nature of activities that could be included, teaching and learning design for OER based courses etc.,
- Need to ensure that the students have basic skills and orientation to how to use materials
- Need to train tutors, and paper setters for the nature of interaction that could be encouraged during tutorials and the type of questions that could be framed to ensure the optimal learning among students

WHAT NEXT?

Keeping in view the feedback and suggestions received from students and experts and a quick review done by the course writers, the course team has made attempts to quickly make following modifications.

- Editing of materials to make it free from spelling and grammatical errors.
- Reduction of textual information to minimise the length of materials
- Rechecking the current status of CC licenses that are referred/used.
- Guidelines for students to use online web services

The modified package is provided to the 27 students of July 2013 semester. Again attempt will be made to get continuous feedback from students, tutors and experts so that a thorough revision could be done before the next course presentation in July, 2014

CONCLUSION

The ICT in Education is a 5 credit course developed based on the available OERs. This experience will no doubt provide better insight into the reuse and repurposing of OERs in developing Reusable Learning Objects. We think the present course materials adopted a new approach for OER creation by reusing/re-purposing available OERs without making changes in them. This would increase the reusability of the entire package. The contextual localisation is provided through locally appropriate 'instruction' as well the newly created learning devices. Hence, other users can adopt/adapt the

available learning devices as well as develop their own contextualised ones and use the external OERs without change. This innovative and experimental attempt of creating **ICT in Education course** will have multiple positive implications effects on the different schools of the university in creating more courses based on OERs and finally will significantly contribute to the OER sources for others use

ACKNOWLEDGMENT:

The authors would like to thank the other members of the Course Team: Prof Emeritus Gajaraj Dhanarajan, Mr. S. Vighnarajah, Mr. Ishan Sudheera and Ms. Patricia

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