

Heutagogy and standards-based OER

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Kin Chew Lim

SIM University, Singapore

Email: kclim@unisim.edu.sg

Abstract

This abstract outlines some activities that the author has initiated in order to support the OER movement. The first is in the heutagogy (or learning how to learn) area. With contents in many disciplines becoming obsolete rapidly, the author feels that some emphasis must be placed on how people learn, unlearn and relearn. Coping with different ways of learning whether formally or informally and with different disabilities as one ages has to be a priority for many people. Our intention is to share examples of the heutagogical approach implemented in educational institutions. Some findings in a recent survey on the students' learning practices using mobile learning resources would also be shared.

The second area is to encourage social and active learning amongst OER enthusiasts. For this, the author uses a social learning platform called Learnival. Amongst other things, Learnival uses Google Hangouts and other Google collaborative tools. It is a simple platform on the cloud and it allows enthusiasts to collaborate in areas like the standards-based OER.

Standards-based OER are the third area that we are promoting. In our approach, we centralise standards-based OER based on standards like SCORM 1.2, SCORM 2004, ePUB OER and the IMS Common Cartridge (IMS CC) specification. Most of such resources are scattered all over the Internet. By using such example resources, the author feels that more OER enthusiasts can use them as references for developing quality OER.

The author believes that focusing on heutagogy and having examples of standards-based OER (e.g. SCORM, ePUB, IMS CC) will make OER more sustainable and usable on many platforms.

Keywords: standards-based resources, SCORM, ePUB, IMS, Learnival

Introduction

One difficulty of embarking on an MOOC (Massive Open Online Course), an ordinary online course or even an OER-based distance education course is that the learner is expected to have much motivation and perseverance to complete all the necessary readings, assignments and project work. Usually, the attrition rate is very high.

“Completion rates are typically lower than 10%, with a steep participation drop starting in the first week. In the course Bioelectricity, *Fall 2012* at Duke University, 12,725 students enrolled, but only 7,761 ever watched a video, 3,658 attempted a quiz, 345 attempted the final exam, and 313 passed, earning a certificate”^[1].

Much is expected of the learner when he or she is enrolled in a MOOC, online course or distance education course. At the same time, “...for many distance educators, teaching online simply means placing their material on the Web and hoping for the best.”^[2]

So, for a MOOC, an online course or an OER-based distance education course to succeed, it is essential that the learner and the educator must be actively involved in the learning process.

This is where heutagogy can help to improve the learning process.

Background of Heutagogy

Heutagogy is a concept coined by Stewart Hase of Southern Cross University and Chris Kenyon in Australia. It is the study of self-determined learning. This concept is an expansion and reinterpretation of andragogy^[3].

Lately, heutagogy has resurfaced as a learning approach after a decade of limited attention. This can be attributed to three reasons.

Firstly, heutagogy has been proposed as a theory for applying to emerging technologies in distance education. It is also used for guiding distance education practice and the ways in which distance educators develop and deliver instruction using newer technologies like social media.

Secondly, in distance education, learners are highly autonomous and self-determined. The emphasis is then placed on development of learner capacity and capability. The goal is to produce learners who are well-prepared for the complexities of today's workplace.

Thirdly, the renewed interest in heutagogy can partly be due to the ubiquitous Web 2.0. This is where we have learner-centered design, learner-generated content and learner self-directedness in information discovery and in defining the learning path.

According to Hase and Kenyon^[4], heutagogy, “the study of self-determined learning, may be viewed as a natural progression from earlier educational methodologies in particular from capability development and may well provide the optimal approach to learning in the twenty-first century.”

From Pedagogy to Andragogy to Heutagogy

Figure 1 shows the progression from pedagogy to andragogy and finally to heutagogy very well:

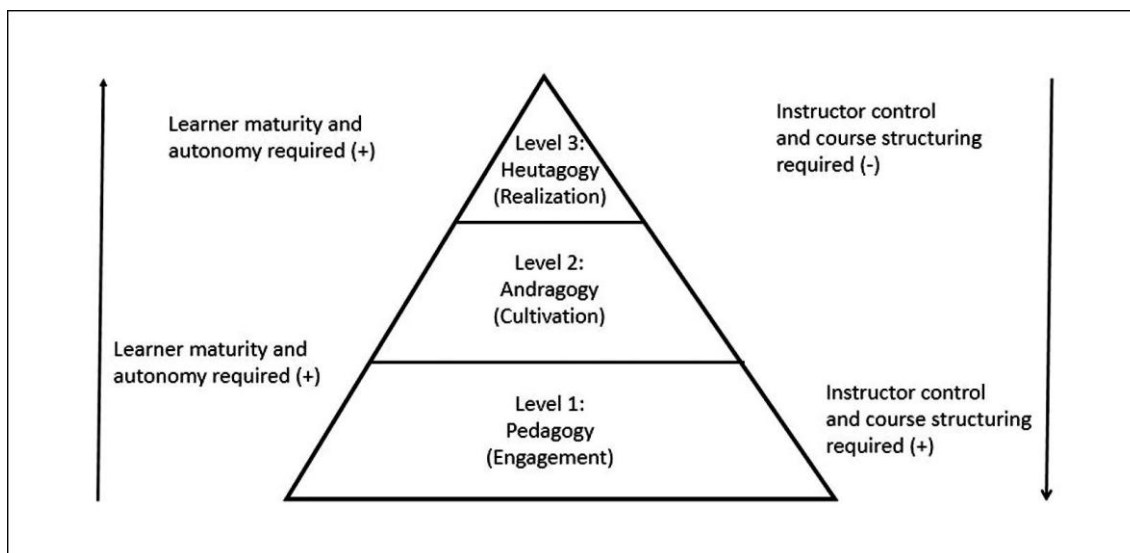


Figure 1 Progression from pedagogy to andragogy then to heutagogy (based on Canning, 2010, p. 63)

Heutagogy can be understood as a continuum of andragogy. In andragogy, the curriculum is designed by the instructor. Andragogy is teacher-centered but it allows students to participate in the decision making related to their learning. In heutagogy, the learner sets the learning course, designing and developing the map of learning, from curriculum to assessment (Hase, 2009). Heutagogy emphasizes development of capabilities in addition to competencies (andragogy)^[5].

Using tablets can help students working on mathematics especially during a virtual class session. The instructor can intervene remotely when he sees that the student is having difficulties solving a mathematical question. Similarly, relevant, constructivist learning can be facilitated through online field trips and virtual experiments in science and engineering courses. Students may choose to discover scientific resources that are not online. These working adult students can share their experiences using the Learnival platform via digital media, such as digital images or video. There is much autonomy in such lessons.

A recent survey of students' learning habits in the SIM University revealed that many students needed to be trained in techniques like highlighting of digitized notes and note taking on tablets and smartphones. This reinforced the need for students to learn how to learn, unlearn and relearn.

Heutagogical Learning Environment

Heutagogy is important to educators using OER as the concept can help to provide a better learning environment. **Table 1** below shows the learner-centric model of heutagogy.

S/No.	Item	Traditional Classroom	Heutagogical Learning Environment
1	Student role	Store information	Self-determined learning
2	Teacher role	Present information Manage classroom	Empowers student learning & provides resources
3	Content	Basic literacy with higher-level skills	Meaningful, purposeful learning experiences which are relevant to learners' needs
4	Curriculum Characteristics	Broad, Fact retention Fragmented knowledge & disciplinary separation	Flexible curriculum with double-looped learning opportunities
5	Social Characteristics	Independent learning	Independent & collaborative learning
6	Role for Technology	Drill & practice Direct instruction	Facilitate exploration, collaboration, & self-actualization
7	Assessment	Fact retention Traditional tests	Self-diagnosis, Knowledge application

Table 1 Comparison of traditional and heutagogical learning^[5]

Social Learning Environment

Learnival

The second initiative that the author initiated is to use a social learning platform called Learnival^[6]. Learnival uses Google Hangouts^[7] and other Google collaborative tools (like YouTube, Google Drive and Google Docs) to promote active learning. Essentially, Learnival has four areas: learning hangouts, social learning, Q & A (Questions and Answers) and rich content. In addition, Learnival comes with an LMS (Learning Management System) and an LCMS (Learning & Content Management System). Both the LMS and LCMS make it convenient for standards-based contents to be stored and delivered to learners. In addition, contents can be meta-tagged and made available for searching in the LCMS.

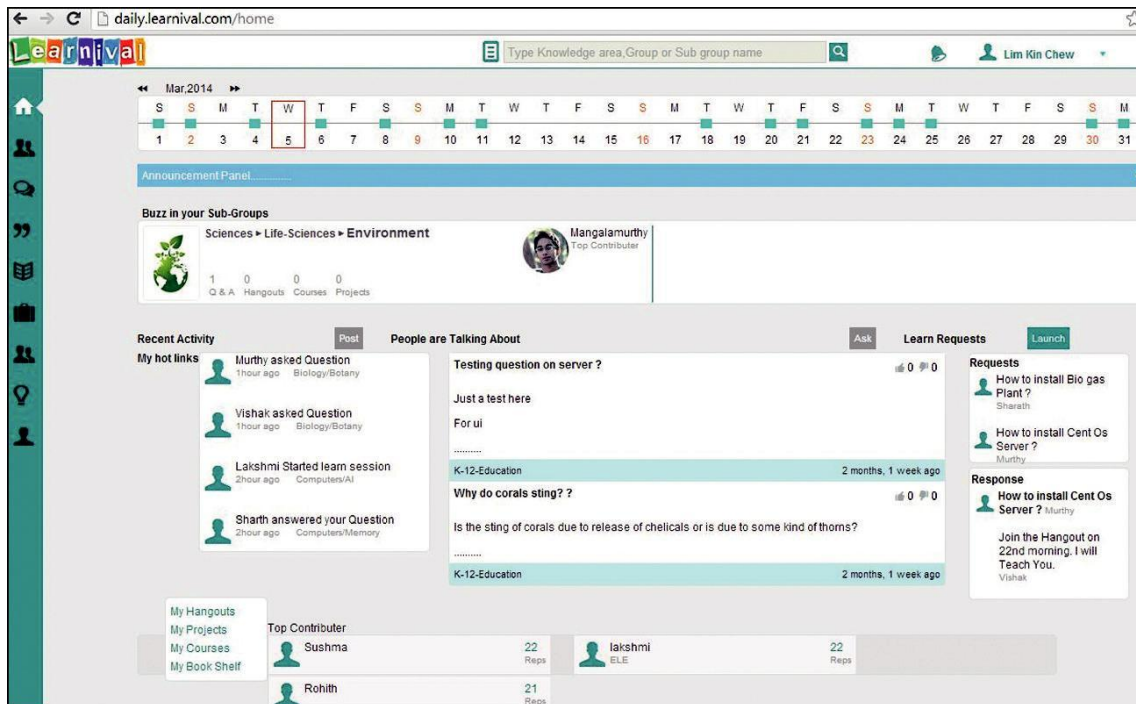


Figure 2 Home page of Learnival

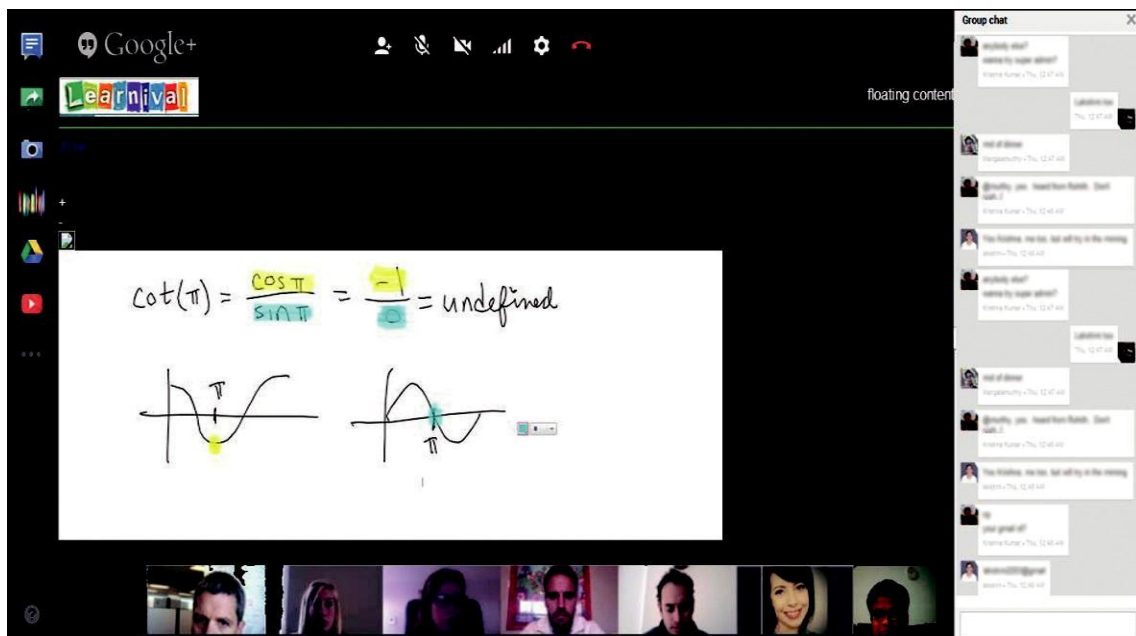


Figure 3 Using Google Hangouts in Learnival^[7]

OER volunteers will find Learnival to be a useful platform for OER work. This is because Learnival promotes and facilitates the gathering of learners who desire to exchange skills and expertise on OER content development in a collaborative and informal way.

Standards-based OER

One purpose of this paper is to propose adopting some technical standards for OER. Some of the technical standards proposed are SCORM Version 1.2, SCORM 2004 4th Edition^[8], the IMS Common Cartridge^[9] and the ePub^[10] standards.

These technical standards will help the OER practitioners firstly by making sure that the packaged learning content will work well in learning management systems (LMSs) that comply with the standard. Secondly, such standards-based OER can be designed consistently. There are strict conformance rules to follow. Thirdly, the adoption of such standards helps to assure end users of quality in technical design and implementation.

SCORM

SCORM stands for Sharable Content Object Reference Model Sharable Content Object Reference Model. It is a collection of specifications adapted from multiple sources (IEEE, IMS, AICC, ARIADNE, etc.). SCORM provides a comprehensive suite of Web-based learning capabilities.

SCORM is a subset of the ADL (Advanced Distributed Learning) Project. This project is started by the US Department of Defense in 1997.

SCORM is a set of technical specifications that deal with how the learning content should be packaged up (i.e. a zipped file) so that it can be imported and exported from one LMS (e.g. Moodle, or Ilias) to another without having to make changes in the coding. This is content interoperability. The SCORM specification was first released in Jan 2000.

SCORM is also about distributed learning. Many LMS/LCMS vendors have supported its implementation. LMS/LCMS vendors which supported SCORM will need to have their systems tested and certified for conformance.

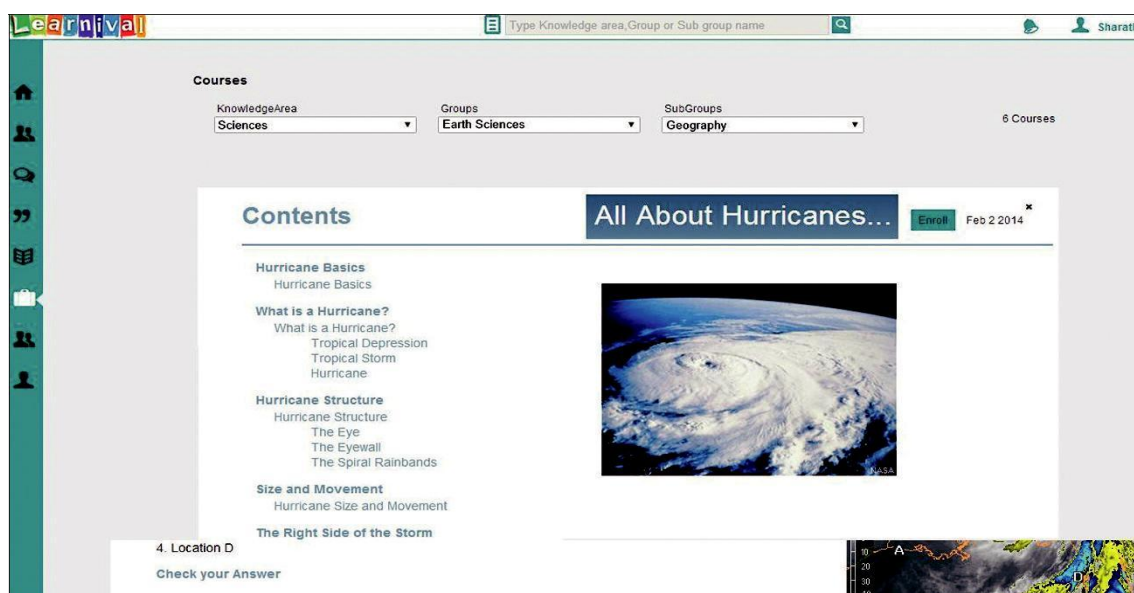


Figure 4 SCORM-based content (on Hurricanes) uploaded to Learnival

ePUB

ePUB, short for “electronic publication,” is an open standard format for eBooks. ePUB is the XML (eXtensible Markup Language) format for reflowable books developed for digital publishing. ePUB was standardized by the International Digital Publishing Forum (IDPF). ePUB has become the de facto universal standard within the eReader sector.

ePUB allows publishers to produce and send a single digital publication file through distribution and offers consumers interoperability between software/hardware for unencrypted reflowable digital books and other publications.

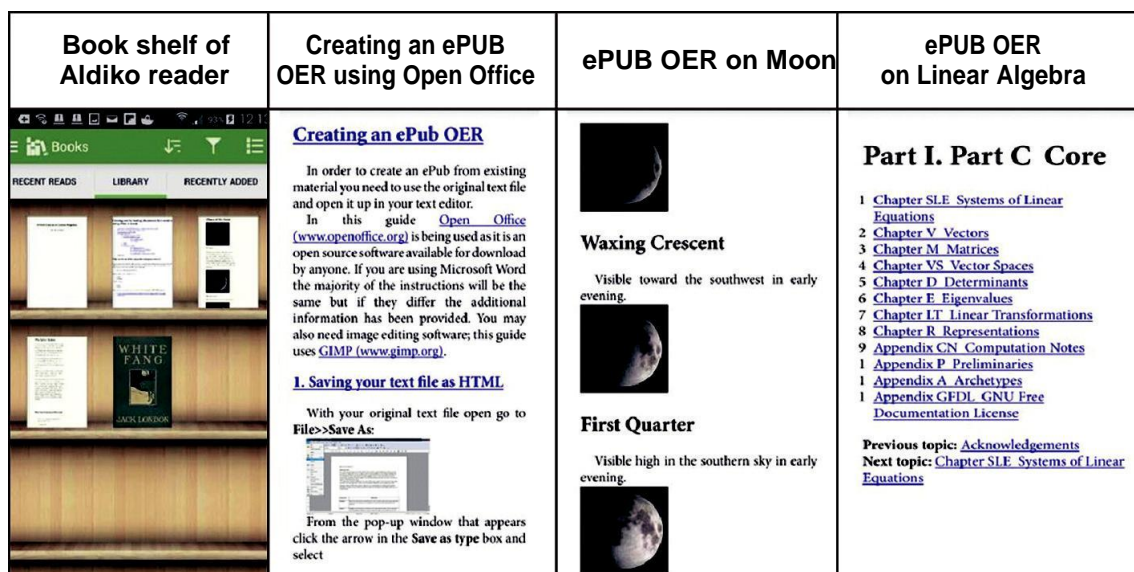


Figure 5 Screenshots of four different ePub books on the Samsung S5 smartphone

The ePub format is used in many OER Projects such as the OpenContent.org^[11], the Open Courseware Consortium^[12], the UNESCO OER Projects^[13] and the ePUB 3 samples at this location:^[14].

IMS Common Cartridge (IMS CC)

Common Cartridge is a specification that describes the format for creating and sharing primarily educational digital content. The specification is developed by IMS Global Learning Consortium^[15]. It describes the packaging format and infrastructure needed to support the format for presenting it to the end-user.

Common Cartridge solves two problems. The first is to provide a standard way to represent digital course materials for use in on-line learning systems so that such content can be developed in one format and used across many learning systems. The second is to enable new publishing models for on-line course materials and digital books that are modular, web-distributed, interactive, and customizable. We feel that it is important for the OER community to support efforts in online educational community and try to standardize content exchange formats. The IMS CC content packages are supported by some learning systems such as Moodle or Blackboard.

Conclusion

The focus in the OER Movement should not be just on the resources themselves. Learners need an appropriate heutagogical learning environment in order to sustain the learning behaviour. In addition, using standards-based open educational resources is more sustainable and usable on many platforms like LMSs and LCMSs. Thirdly, having a software and collaborative platform like the Learnival can help to sustain the interest of the OER volunteers.

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