

Using FOSS to Manage Resources in a University Language Centre

James Scully B.Sc., M.A., M.B.Ps.S., M.B.C.S.¹

Abstract—This paper is a description of various attempts, some successful, some partially so, some not yet so, to use FOSS software in the Sultan Qaboos University Language Centre to overcome problems in managing various types of resources. Moodle has been adopted by the University as its Virtual Learning Environment of choice and the Language Centre has over one hundred online courses which target students and their courses. However we also have several courses and parts of courses which tackle issues such as project applications, attendance management and professional development. The Language Centre with assistance from the University Centre for Information Systems and Centre for Educational technology has a resource repository using Omeka. This project offers many examples of the exciting journey one takes when trying to move away from expensive, proprietary software in an environment where nearly all the staff have been brought up on that type of software. The Language Centre staff book meeting, seminar and conference rooms using MRBS a small Apache/PHP/MySQL database application. In this instance the server does not use FOSS but Microsoft Server 2008 R2 with Apache and MySQL. Currently the Language Centre is investigating various document management options and has a test instance of Alfresco. The paper will discuss the interaction of this software with proprietary desktop systems as well as the competition with proprietary systems. Looking forward: what possibilities are there to use ebook management software such as Calibre or Internet radio bundles such as Airtime with Icecast?

Index Terms— free open source software (FOSS), resource management, tertiary education, English as a Foreign Language (EFL)

1. INTRODUCTION

With one exception, it is hard to find evidence of open source software in use in our university. Microsoft products dominate the desktop in every office and the servers that manage our network. The one exception is Moodle. Interestingly it is Moodle that often outshines our other network products in its reliability. This situation is widespread in the Arab world [1]. Staff and students are unfamiliar with open source software and even technical staff are frequently untrained in the languages, scripting and programs used by many open source applications.

2. E-LEARNING MANAGEMENT (MOODLE)

The longest running and most widely used piece of Open Source software at SQU is Moodle [2], a virtual learning environment (VLE). It is currently the world's most widely adopted VLE. Though mostly used for course management there are many other possibilities. Moodle is managed by the Centre for Educational Technology (CET) at SQU with the contracted support of Human Logic of Dubai, a Moodle Partner company. The Language Centre currently uses Moodle for a number of administrative tasks. We have a Project Application System where LC members who have requests for project time in the Spring semester write up their proposals for perusal by the appropriate committee (see Fig 1 below).

UNIT PROG	PC/CC	PERSONNEL	HRS	DURATION	PC PRIORITY	PROJECT TITLE	REVIEW DATE	REVIEWER	STATUS	PRIORITY	VIEW/EDIT
CELP	Larry Michienzi	Fran Cook	4	Semester	High	LANC 2033 Book rewrite	18 December 2012			Medium	
CELP	Larry Michienzi	Kelly Michienzi	4	Semester	High	LANC 2035 exam development and Pharmacy book rewrite	18 December 2012		Approved with changes	High	
SSU/CI/FASU	Jodi Lefort	Luma Ashoo	4	Semester	High	Professional Evaluation of Tutorial Centre Materials	12 November 2012		Rejected	High	
SSU/FASU	Jodi Lefort	Theresa	6	Semester	High	Library Resource Material Integration	18 December 2012		Approved	High	
CU/FASU	James Scully	Owen James,	6	Semester	High	Transparent, Open, and Paperless Classrooms	18 December 2012		Approved with conditions	High	
PDRU	Victoria Tuzukova	Jamila Al-Siyabi	6	Semester	High	Teacher Resource Centre: New Cataloguing System and Resources	12 November 2012		Rejected		

Fig. 1 Moodle Project Database

¹ Language Centre, Sultan Qaboos University, P.O. 43, Al-Khodh, Muscat-123, Sultanate of Oman (phone: 968-24141651; fax: 968-24413411; e-mail: james@squ.edu.om)

We also have an Absence Recording database to log student absences. Both these use the Moodle database activity to manage the data. We have also used the Forum activity to conduct debates, notable about course restructuring. The questionnaire activity allows us to conduct surveys and quickly collate the data from these. The most notable of these is the newly developed academic appraisal questionnaire which we hope to put into operation later this year (see Fig 2 below).

Teaching Goals:

Please rate the importance of each of the goals listed below to you. Assess each goal's importance to what you deliberately aim to have your students accomplish, rather than the goal's general worthiness or overall importance to SQU and the LC. There are no "right" or "wrong" answers; only personally more or less accurate ones. For each goal, choose only one response on the 1- to -5 rating scale. You may want to read quickly through all the goals before rating their relative importance. In relation to the course you are focusing on, indicate whether each goal you rate is:

(1) Not applicable - a goal you never try to achieve
 (2) Unimportant - a goal you rarely try to achieve
 (3) Important - a goal you sometimes try to achieve
 (4) Very Important - a goal you often try to achieve
 (5) Essential - a goal you always/nearly always try to achieve

Source: Classroom Assessment Techniques: A Handbook for College Teachers

7 Knowledge - Remember previously learned information.

	1	2	3	4	5
Learn terms and facts of this subject	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Learn concepts and theories in this subject	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8 Comprehension - Demonstrate an understanding of the facts.

	1	2	3	4	5
Develop ability to draw reasonable inferences from observations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Learn to appreciate important contributions to this subject	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9 Application - Apply knowledge to actual situations.

	1	2	3	4	5
Develop ability to apply principles and generalizations already learned to new problems and situations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Develop problem-solving skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improve skill at paying attention	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Develop ability to concentrate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improve memory skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improve listening skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Fig.1 A questionnaire in Moodle

As Moodle is self-contained and accessed entirely through the browser there are relatively few problems of interaction with proprietary systems. The authors of Moodle have taken pains to offer a filter for text documents pasted into Moodle from Word so that the huge amount of metadata carried by word files can be reduced and text can be reproduced easily in any browser. Whole files can be uploaded and downloaded with complete fidelity and word files linked from the pages of the course will download and open in Word on the desktop. At a server level the University uses a Linux system, however Moodle.org provides a Windows compatible version. Logins are integrated with the University LDAP server and main issues have been with a failure to update the software to recent versions. This is mostly due to the absence of internal support for the applications involved and the complex upgrade path for some activities from Moodle 1.9 to 2.x.

3. LEARNING RESOURCE REPOSITORY (OMEKA)

During 2011 the Language Centre conducted research into the best way to store and retrieve teacher resources ranging from images to documents, lesson plans to audio or video supplements for course materials. Comprehensive repository systems such as D-Space were examined and an extensive feature comparison was done. Key features were ease of use, the ability to store different kinds of files quickly and easily, tagging and ease of management.

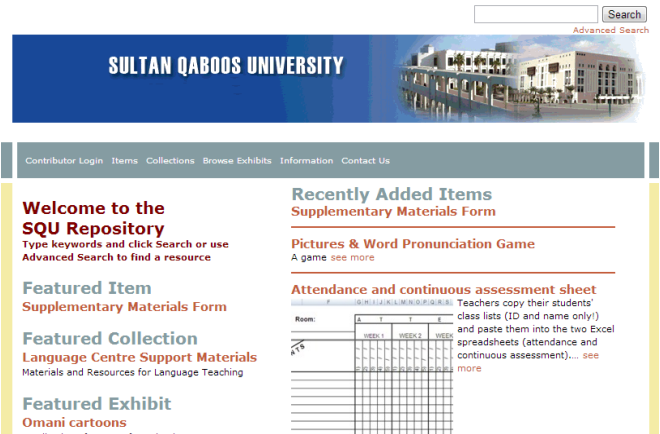


Fig.3 Omeka

The Omeka [3] system was selected and after a change in policy lead to servers that had been purchased on behalf of the Language Centre being taken away into the Centre for Information Systems a copy of Omeka was installed and tested on the CentOS operating system on a Fujitsu server by CIS. This is currently in operation and during the last semester was accessed by over 40 of our 200 plus teachers.

Omeka is, like Moodle, self-contained and accessed entirely through the browser Teachers can upload and download proprietary software file formats (e.g. MSWord, wmv) versions to and from the repository quite transparently. Omeka does not operate on Windows servers however. For users the experience as consumers is simple, no significant training has been done but hundreds of visits have been made to the repository and resources have been downloaded with no issues reported to support people. We have yet to open the upload to all teachers and we anticipate that a few minutes training by example may be necessary for most staff to use this feature. Problems of server software implementation were few and a couple of postings on the Omeka community discussion board soon answered those queries.

4. ONLINE ROOM BOOKING (MRBS)

Language Centre staff book meeting, seminar and conference rooms using MRBS [4] a small Apache/PHP/MySQL database application (MRBS, . In this instance the server does not use FOSS but Microsoft Server 2008 R2 with Apache and MySQL. This system has been in operation successfully for about 5 years. The booking system is accessed via Moodle, though this is not strictly necessary, has its own login (does not work with the University LDAP server, though this is also possible). This system is very easy to use, usually take staff less than 5 minutes to learn and is used to book 6 computer labs and a similar number of meeting rooms in 30 minute slots.

MRBS operates on any Linux/Apache/MySQL/PHP (LAMP) server and will also run in a Windows environment. There is no interaction with other desktop programs other than the browser and the program works well with Internet Explorer. It is widely used and the only significant support issue has been the lack of login integration with the University LDAP system. Our information systems centre does not encourage external access to LDAP except by servers they manage themselves.

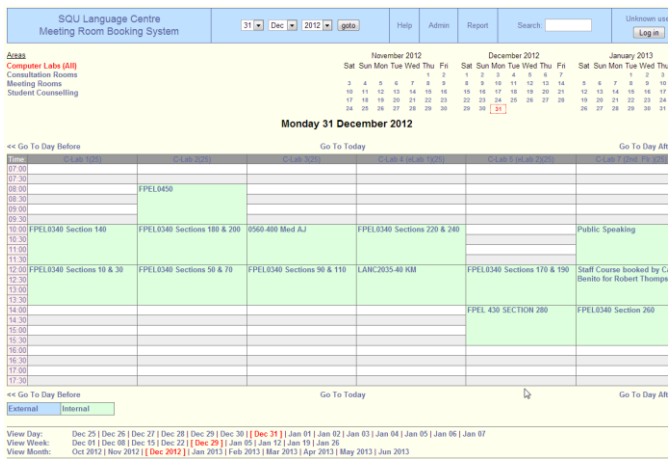


Fig.2 MRBS

5. DOCUMENT MANAGEMENT (ALFRESCO)

There is currently a need for a document management system in the Language Centre and more widely in the Foundation Programme and possibly University-wide. The requirements of Quality Assurance and Accreditation systems mean that easy access to documents both current and historical has become crucial. The Language Centre is examining various systems including the proprietary DotNetNuke [5] which is used by the University to manage its website and has a Repository add-on. This has a very steep learning curve however and seems unlikely to be widely usable. We are also examining Alfresco [6] a rather more transparent OS offering. Alfresco has an Open Source Community version which is free and uses the Lesser General Public License (LGPL). It creates a web portal using Apache Tomcat and in addition to document management can manage web content. For document management it has full versioning so historical versions of any document can be reviewed and will run under Windows, Linux or Solaris.

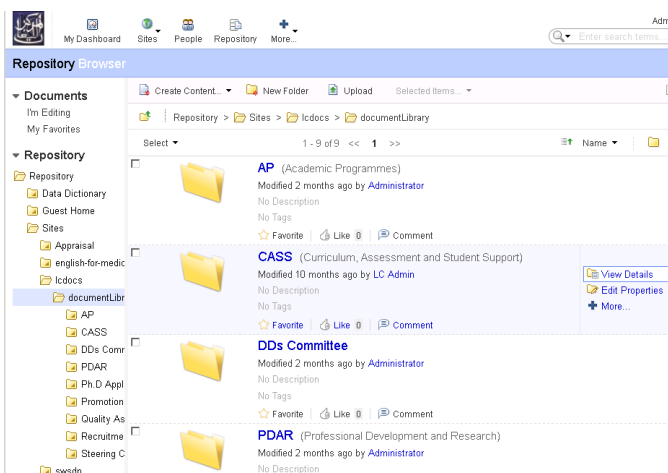


Fig3 Alfresco

Desktop integration with MS Office is a feature that will be important as this is the document creation software of choice in the Language Centre. We have an Intranet version running currently on a Windows 2008 server. Alfresco can be used as a “drive” on the desktop though Windows network authorization can be a headache in Windows 7, despite working flawlessly in Windows XP. The online

manuals and community support are extensive, though they have not been made use of so far.

6. OTHERS

The Language Centre is currently starting a project to examine the possibilities of “podcasting” and “radio” for use by our students to help develop their oral and aural skills. We have proposed the use of Sourcefabric Airtime (programme management automation software) [7] and Icecast (GPL streaming multimedia server) [8] FOSS packages. These would require a server to be managed by the information systems centre. We are also looking at ebooks and how these might be introduced and managed. The Calibre [9] server looks promising and Sigil [10] might serve to help convert old resources to ebooks and help write new ones.

7. CONCLUSION

All these programs have been implemented with minimal support and rarely go wrong except when there are hardware faults, electricity cuts or human error! It is fair to say that the learning curve for users on these applications is gentle and at least one case (MRBS) scarcely any training is necessary at all. To use Omeka as a consumer is similarly painless. The applications rarely fail. Most issues with using these applications have been a result of a paucity of IT professionals in the University familiar with the programs required to use them. Whereas we have Oracle widespread throughout the University and supported by several technicians and managers, Postgres and MySQL are not. Scripting with PHP is not a skill demonstrated by many of our technical staff or programmers.

The purpose of this paper is to show you how a very small number of FOSS programs have been made use of in a Language Centre. Despite an overwhelming emphasis on proprietary software in the University, FOSS can be used successfully, largely because it can be implemented quickly and easily with minimal technical support and because it is reliable. Initiative such as these are highly cost-effective and with more technical expertise could probably be far more widespread and even save the University money if used instead of expensive proprietary systems. I want to encourage you to ask questions and discuss the possible uses of FOSS in your institution. I want to suggest you can do so even despite a lack of encouragement from your technical support and suggest that the open source philosophy of community support can help to mitigate any risks you take as these systems become more important to your organization.

REFERENCES

[1] A. Hamdan, “How Open Source Can Become an Integral Part of Our Lives in the Arab World? | Jordan Open Source Association,” *Jordan Open Source Association*. 26-Jul-2011.
 [2] [Moodle.org: open-source community-based tools for learning.] 2013. [Online]. Available: <https://moodle.org/>. [Accessed: 22-Jan-2013].
 [3] Omeka, 2013. [Online]. Available: <http://omeka.org/>. [Accessed: 22-Jan-2013].
 [4] J. Beranek, *MRBS: Meeting Room Booking System*. 2012.

- [5] CMS Content Management, Asp.net Open Source CMS, Free CMS - DotNetNuke," *Dotnetnuke.com*, 2013. [Online]. Available: <http://www.dotnetnuke.com/>. [Accessed: 22-Jan-2013].
- [6] Alfresco wiki 2013. [Online]. Available: http://wiki.alfresco.com/wiki/Main_Page. [Accessed: 22-Jan-2013].
- [7] Sourcefabric | Airtime, Sourcefabric, 2013. [Online]. Available: <http://www.sourcefabric.org/en/airtime/>. [Accessed: 22-Jan-2013].
- [8] Icecast.org, Icecast.org, 2013. [Online]. Available: <http://www.icecast.org/>. [Accessed: 22-Jan-2013].
- [9] calibre - E-book management, Calibre, 2013. [Online]. Available: <http://calibre-ebook.com/>. [Accessed: 22-Jan-2013].
- [10] Sigil - The EPUB Editor - Google Project Hosting, code.google.com, 2013. [Online]. Available: <http://code.google.com/p/sigil/>. [Accessed: 22-Jan-2013].