ABCD AS A DIDACTIC TOOL IN PROMOTING LIBRARY AND INFORMATION SCIENCE

BY

DIANAH KACUNGUZI TWINOBURYO

LIB@WEB PARTICIPANT

A LIB@WEB PROJECT REPORT AS A RESULT OF A THREE MONTHS INTERNATIONAL TRAINING PROGRAMME FROM OCTOBER TO DECEMBER 2012 AT THE UNIVERSITY OF ANTWERP-BELGIUM

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1.0 Introduction

Libraries and academic institutions today are moving towards adoption of open source software for various organizational functions. Some of the open source software used by libraries include ABCD, Koha, Newgenlib, Evergreen, OPALs, Greenstone, Eprint, Dspace, Drupal, Open Biblio, Jhoomla and Plone. The above software can be used to better library functions and operations as well as improve teaching and learning in the discipline of Library and Information Science (LIS). LIS is considered as a cross cutting discipline that aims at training information professionals to serve in different capacities around the world. This report therefore covers different aspects of how ABCD can be used as a didactic tool in Library and Information Science.

2.0 Background to the Problem

Information technology has changed the way academic institutions operate. Today, academic units and libraries are drastically embracing new software to enhance teaching and learning. In fact, academic institutions have adopted open source software such as Chamilo and Moodle to promote e-learning. Academic libraries have also adopted open source software such as ABCD to automate library functions and improve the user experience.

ABCD is an acronym for Automation of libraries and Centers of Documentation and just as the name suggests, the software is used to automate library functions with capabilities of integrating all main functions of library management. According to Dhamdhere, "the primary aim of ABCD is to provide an integrated library management tool, covering all major functions in a library, such as Acquisitions, bibliographic database management, user management, transactions, serial control, online end-user searching on local and external bibliographic databases, and library portal" (2011:2). ABCD is thus a solution to most library problems.

In relation to the above, academic libraries are further integrating library resources into learning environments but are not exploring the possibilities of promoting teaching and learning with library software in LIS. Most library schools still equip students with theoretical knowledge with less practical skills in librarianship. This means that LIS schools quite often produce 'half baked' graduates who are not able to perform effectively in the modern library environment. A good example of such library schools is the East African School of Library and Information Science in Kampala, Uganda (EASLIS)

EASLIS is one of the oldest library schools in the whole of East Africa with the highest number of LIS graduates in the region. EASLIS's mission is "to offer education, promote research and innovation, and outreach in LIS to respond to the present and future information needs of society" while the EASLIS's strategic plan addresses various goals relating to promoting research and technology innovations in library and information management (EASLIS, 2012). Currently the school offers various programs ranging from PhD programs, Masters Programs, to Bachelor and Diploma programs.

In light of the above, EASLIS as a school is still involved in the traditional methods of teaching which mainly equip the students with theoretical knowledge and less of practical knowledge. This means that EASLIS is still far from achieving its strategic objectives which include transforming teaching and learning with technology. There different programs offered at EASLIS such as Post Graduate Diploma in Librarianship, Bachelor of Library and Information Science and Diploma in Library and Information Science that still have little application of technological software which can otherwise improve the quality of teaching and learning at the school. In fact courses such as Library Operations, Reference and Information Service, Classification, Cataloguing, Database Management and Information Retrieval, Web Document Management, Multimedia Librarianship, Automation of Library and Information systems, Management of Electronic Resources as well as Indexing and Abstracting are still largely being traditionally taught with more theoretical than practical lessons.

In consideration that the world revolves around technology today, it is important for EASLIS to revise its programs to include technological applications in teaching and learning. Using library software such as ABCD in teaching and learning at EASLIS would transform the teaching environment and provide a platform where the students would be able to get exposure to a highly effective integrated library system. The application of ABCD in different course modules would also provide an opportunity for the academic staff at EASLIS to get acquainted with a free and open source software which provides solutions to libraries and LIS teaching environments.

This project therefore explores how ABCD library system can be used to promote LIS for quality graduates and a better future in LIS. Specific attention is given to the East African School of Library and Information Science in Uganda.

3.0 Methodology

The project involved identifying courses or parts of LIS courses at EASLIS where ABDC can be used as a practical tool for illustrations and demos. The identified course modules include Cataloguing, Database Management and Information Retrieval, Web Document Management, Multimedia Librarianship, as well as Indexing and Abstracting which are still largely being traditionally taught. Practical experiments were carried out in ABCD starting with the ABCD-Site Administration to the different modules such as Database Administration Module, Data entry/ Cataloguing Module, ABCD OPAC and Loans Module, ABCD Serials Control Systems to identify ABCD modules that can be applied to the above courses. After the practical experiments with the software, screenshots were taken and used to show the different parts of ABCD that can be applied in LIS teaching environment at EASLIS as shown below;

3.1 Course Module 1: Cataloguing

Cataloguing is a major course module at EASLIS that encompasses descriptive cataloguing using Anglo- American Cataloguing Rules, 2nd, revised edition (AACR2R), subject access to resources using controlled vocabularies such as the Library of Congress Subject Headings, copy cataloguing from other libraries, making entries for online catalogues and Digitization of a catalogue using Marc 21. In light of the above course module, ABCD makes cataloguing of new library materials possible thus making it an important tool for teaching the subject of cataloguing at EASLIS. Furthermore, ABCD makes it possible to import bibliographic records from other libraries such as the Library of Congress, Oxford University, University of Toronto, University of Chile and Australian National University through the Z39.50 protocol. It is thus possible to maintain international standards in bibliographic information such as MARC, CEPAL and AGRIS in ABCD which makes it an even more accurate tool for teaching cataloguing. The screenshot below shows bibliographic details of a record in ABCD as a result of cataloguing according to MARC 21 Standard.

Screenshot 1: Editing a MARC record in ABCD

As already explained above, ABCD also allows copying of records from other libraries or databases which fits the course description of Cataloguing at EASLIS. Below is a screenshot of ABCD showing the possibility of copying records from other databases

**Screenshot 2: Showing ABCD Possibilities of copying Records from Other Databases**

3.2 Course Module Two: Database Management

Database Management is a course module taught to both bachelor and diploma students at EASLIS and covers description of database management structures, database models, development and design of databases, database administrator and administration, database and information systems security, and document management systems. In this regard, ABCD can be a useful tool in teaching of Database Management at EASLIS because the ABCD makes it possible to create databases from scratch and better still it is possible to create databases from pre existing database models such as MARC 21 and CEPAL. ABCD can be applied in the above course content to teach database structures and how to actually develop a database. Below is a screenshot showing the Database Administration Module in ABCD

**Screenshot 3: Showing the Database Definition Module in ABCD**
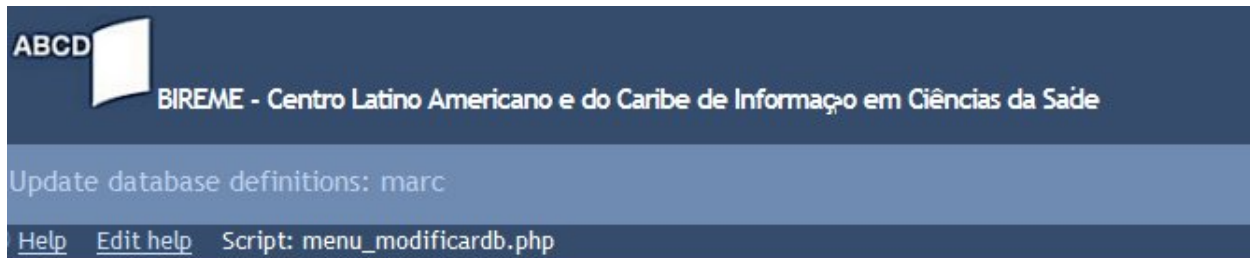
From the above screenshot, ABCD offers a variety of useful features for database administration such as the Field Defintion Table (FDT) which makes it possible to define database fields such as repeatable fields, subfield delimiters, pre-literals and input type such as HTML types, date, table, password and upload file. The Field Selection Table (FST) is also important because it makes indexing of records possible and determines the search outcome; the display format is used for formatting by either allowing creation of new formats or using existing formats to control what is shown on the screen. Other features include worksheets which act as forms for putting data into the system, record validation which ensures accuracy of the records, advanced search form which.., list of available databases which shows other databases in ABCD, Help files on the database fields which shows all the database fields, Configure Database in IAH which allows configuration of the OPAC, and the statistics features which enable generation of statistical reports with graphical representations.

3.3 Course Module Three: Web Document Management

Web document management is a course taught to third year students of Bachelor of library and Information Science and covers aspects relating to basic HTML. The purpose of this course is to

enable students get knowledge and basic skills in designing and planning web pages, creating web pages with HTML as well as formatting web pages. ABCD is a fully web-based system with PHP, AJAX allowing advanced multi-media and linking features such as HTML editor with HTML codes which are used to build websites and this can be a perfect example to teach students at EASLIS. Below is a screenshot of an HTML editor in ABCD.

Screenshot 4: Showing an HTML Editor in ABCD
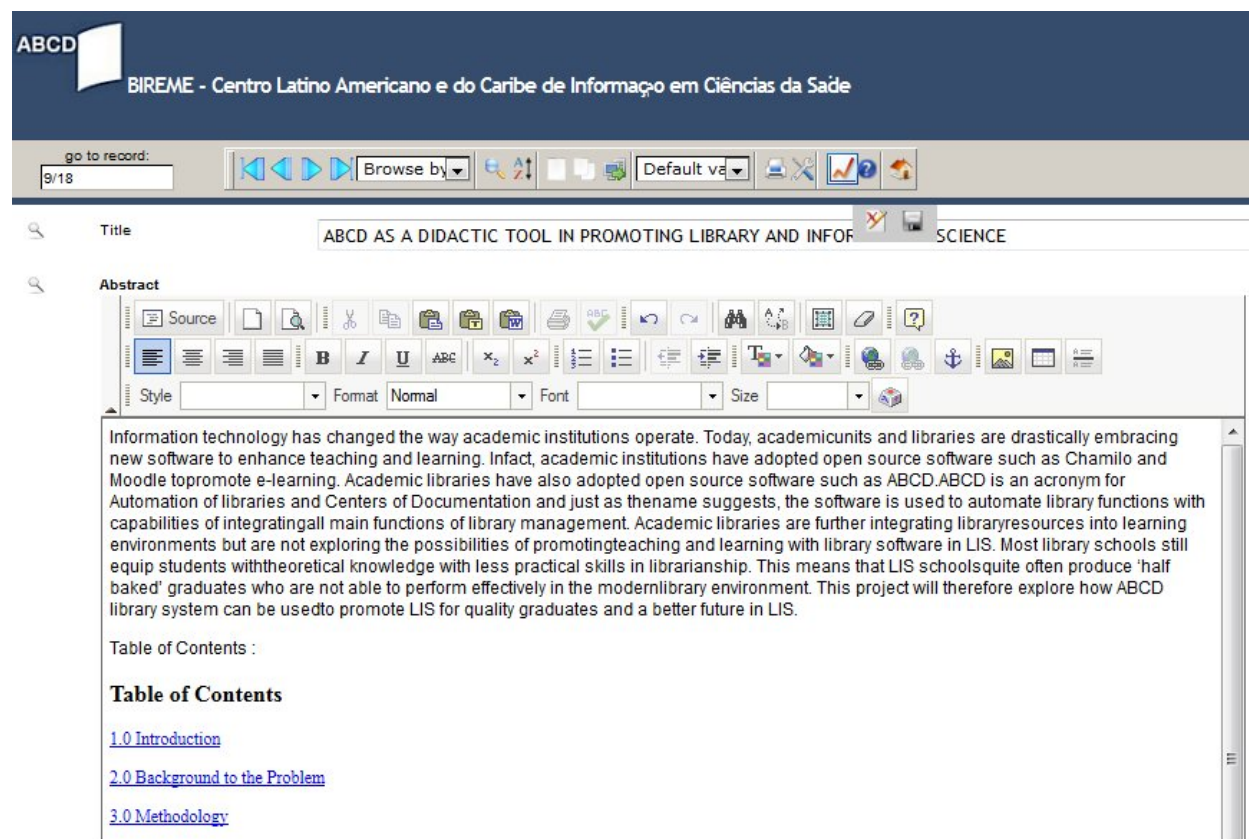
3.4 Course Module Four: Multimedia Librarianship

Multimedia is all about the ability to combine text, audio, video, animation, interactive features and still images in a variety of ways though technology. Multimedia librarianship is a course offered to second year Bachelor of Library and Information Science students at EASLIS and it covers different multimedia formats as mentioned above in librarianship as well as how they are used in libraries. The course also aims at introducing students to techniques of managing information materials in other forms other than paper. In ABCD Integrated Library System, there

is a possibility of integrating text with images which is makes it a good tool to illustrate multimedia librarianship to students at EASLIS. The screenshot below shows the combination of text and images in ABCD.

Screenshot 5: Showing Text and Images and multimedia hyperlinks in ABCD

3.5 Course Module Five: Indexing and Abstracting

Indexing and Abstracting is also a course offered at EASLIS to both bachelor and diploma students. The course is intended to equip students with knowledge and skills of indexing and abstracting to facilitate information retrieval in libraries. The course covers different aspects relating to preparation of abstracts, subject analysis and vocabulary control, thesaurus

construction and computer assisted indexing. Teaching of this course can be partly enhanced by use of ABCD to show practical demonstrations of how indexes are constructed as well as the different indexing methods. ABCD allows full text indexing of records and can be a useful tool for teaching this module. The screenshot below shows an index in ABCD

Screenshot 6: Showing Indexing Features in ABCD

Furthermore, the indexing in ABCD can be illustrated by the classification codes which can easily taught to students for practical lessons. The classification codes in ABCD are illustrated below;

Screenshot 7: Showing Classification Codes in ABCD
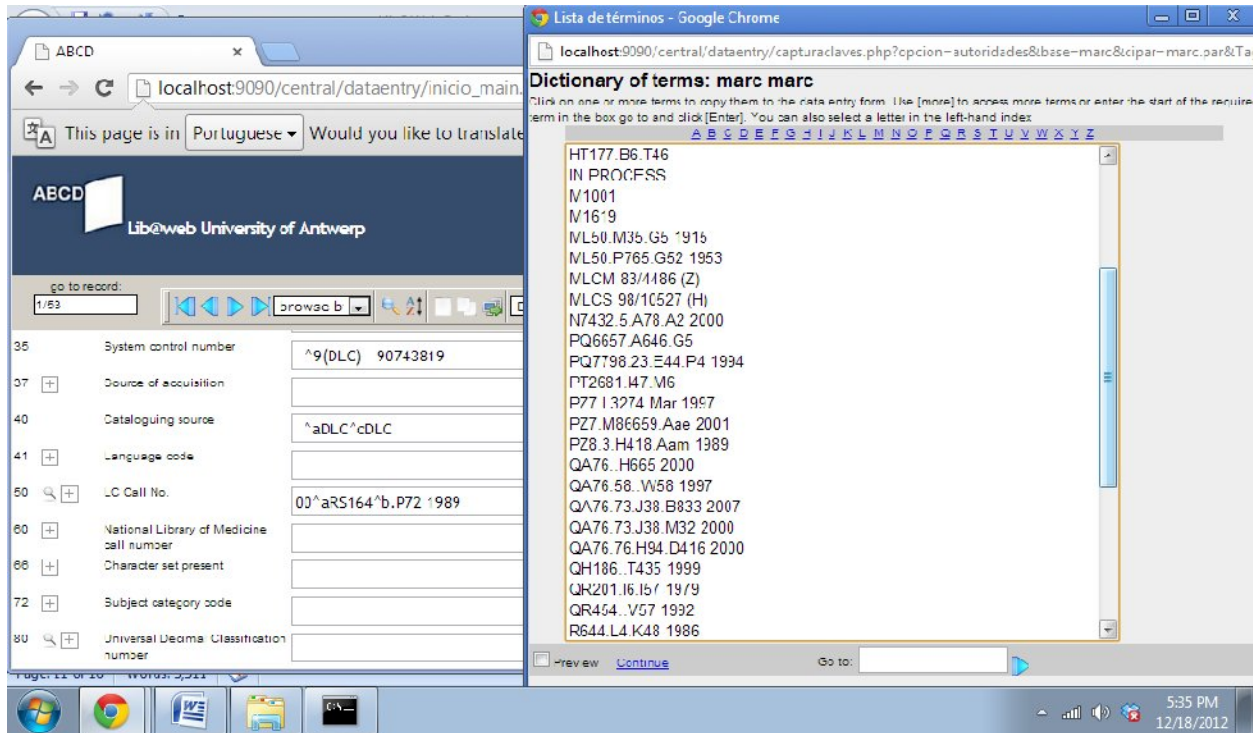
3.6 Proposed Additional Courses to EASLIS Curriculum

Librarianship in the 21st Century calls for changes in the existing traditional LIS curricula to meet the demands of the new information age. EASLIS as a school should be highly adaptable to such changes by frequent revision of the LIS curriculum to include new courses that reflect technological changes in librarianship. Some of the proposed courses supported by ABCD include the following

- **Content Management systems**; this should aim at equipping students with skills to use a content management system such as learning how to prepare content for the web through categorization, adding images, adding keywords, related content and external links, learning how to edit and publish content. ABCD supports the above functions through making possibilities for web creation.

- **Information Retrieval;** this should entail basic techniques of searching information systems, evaluation and interface aspects, web search, link based algorithms, web metadata, web clustering and classification. This module can easily be supported by

ABCD especially with the advanced search form in ABCD Central where Boolean searching operators are applied.

- **Management** ; this is an important aspect in modern librarianship and can be supported by ABCD for instance in the loans module, the loans configuration matrix of ABCD can help in defining a loan policy

- **Web-server Configuration and Programming HTML with PHP**; are also an important addition to the existing curriculum. This can be also be supported by ABCD through the Apache configuration with ABCD virtual host and the PHP software embedded in ABCD respectively.

4.0 The Way Forward

Implementation of ABCD Integrated Library software in teaching of LIS at the East African School of Library and Information Science will take the following phases.

1. **Readiness Assessment:** For any project to suit the purpose it is intended for, it is important to ensure that the people involved in it are ready for it. Implementation of ABCD at EASLIS requires that the staff of the school are ready to take on the software and apply it as a teaching and learning tool. Conducting a readiness assessment at EASLIS will involve disseminating findings from practical experiments with the software to the staff and having one on one interviews with the different staff with the intension of soliciting the ideas of the staff regarding their readiness to adopt ABCD integrated library system in teaching LIS courses.

2. **Convincing Management:** Upon establishing the readiness of the LIS academic staff at EASLIS, it is necessary to inform and convince top management about the use of ABCD system in teaching relevant LIS courses. This is because the success of the project is highly dependent on top management approval. Management at EASLIS involves the Dean of the school, the Deputy Dean, heads of departments and Quality Assurance Officers from central administration. This stage of implementation will involve presenting findings from software experiments to the top management with emphasis on how ABCD can be used to improve the quality of learning at EASLIS.

3. **Revision of BLIS and DLIS programs:** This is an important aspect in implementing the use of ABCD in teaching of LIS at EASLIS. The programs at EASLIS are revised every two years in order to address the information and knowledge society needs, balance theory and practice by enhancing practicum and field based training as well as to bring in new ideas to address the emerging trends in the job market. Revision of the BLIS and DLIS programs should therefore take into account the use of ABCD as a didactic tool in LIS at EASLIS.

4. **Installation of ABCD on the School Computers:** Once the programs have been revised to reflect new course content under different modules, installation of ABCD software can be carried out on the teaching laboratory computers. EASLIS is part of a bigger structure of the College of Computing and Information Science which means that there are several teaching laboratories. It is important to identify one big laboratory where ABCD software can be installed. This kind of laboratory should therefore be specially designated to teaching of the relevant LIS courses in relation to library software such as ABCD. The ABCD Site will have to be installed and configured according to the ABCD Site installation manual. The installation and configuration of ABCD software involves other technologies such as ISIS script, Java Script, ISIS formatting language, ISIS database, PHP, MySQL and Apache in which case some of these technologies may have to be installed first.

5. **Training of the Lecturers:** Training of staff is an important element of the implementation plan because it is pointless or useless to install ABCD software if the EASLIS academic staff cannot use it. Staff training will involve step by step demonstration of how different parts of ABCD software work and how they can be used to teach LIS courses at EASLIS. The demos will cover the Users' Administrative Module where the staff will be allocated administrator rights, Database Administration Module, Data entry/ Cataloguing Module, Acquisition Module, the ABCD OPAC, ABCD Site and ABCD Serials Control Systems

6. **Evaluation and Monitoring:** This is an important stage of every project where loopholes will be identified in the use of ABCD in teaching LIS courses and corrective action taken to improve teaching experience with ABCD. Evaluation will be done after a period of six

months to establish whether ABCD software is meeting its intended purpose at EASLIS. The evaluation will also involve identifying success areas of the software in which case successes will continuously be used to better the teaching experience at EASLIS.

5.0 Anticipated Challenges and Recommendations

Low Support from Management

EASLIS is still deeply rooted in traditional approaches to teaching LIS and therefore it may be had to get full support from management. As already mentioned above in 4.0, it is important to convince management about how best to improve LIS teaching with ABCD software. This can be done through presenting the benefits of ABCD to management with practical examples.

Resistance from Staff

EASLIS is made up of different categories of staff including the senior staff and the junior staff. It is likely that the senior staff will resist the use of ABCD in teaching of LIS subjects because they are not highly adaptable to technological changes while the junior staff will embrace it. It is thus important that the junior staff use the software and show the senior colleges the benefits of ABCD as a way of convincing them to adopt the software.

Poor Internet Connectivity

EASLIS has Internet Connection and Local Area Network but there are frequent challenges of slow connectivity which may render some difficulties in the use of ABCD Software in teaching at EASLIS. It is recommended that the the school and the university as a whole subscribe to broadband for faster Internet connectivity which will solve many problems and improve the quality of learning.

Power Shortage

EASLIS being in Uganda, a developing country, it is likely that the ABCD project will be affected by power cuts which the academic staff have no control over. The recommendation in this case is for the school to purchase a stand by generator to serve at all times and ensure that the project reaps benefits for the LIS students.

6.0 Conclusion

The changing technological environment has created numerous opportunities for academic libraries and library schools in Africa and beyond. Some institutions respond positively while others respond negatively to such opportunities. Libraries and academic institutions that fail to adapt to the dynamic technological environment are likely lag behind while those that embrace technology are in better position to gain a competitive advantage. There is a lot of available free and open software that can improve library functions as well as teaching of LIS in academic institutions. ABCD is a good example of such software that can promote teaching of LIS in the digital age. The East African School of Library and Information Science (EASLIS) in Makerere University in Uganda should therefore adopt the use of ABCD in teaching of LIS for better LIS professionals.

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