



Evaluation of digital library websites

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This report is submitted for the fulfillment of the Module 5 – Access to Digital library, International master in digital library learning program.

**International Master in Digital Library Learning
Parma University, Italy**

October, 2011

Executive summary

The aim of this report is to evaluate digital library websites, and make a critical analysis. For this purpose, four digital libraries, namely the Public Library of Science (PLOS), International Children's digital Library, North South University, and International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) have been considered as an example. This evaluation report has thrown light on users' perception of the digital library environment from three different points of views that is usefulness and value of the content, richness of functionality, and ease of use. The evaluation is followed by a general discussion and conclusion. It may help policy makers to identify ways in which they can motivate their management for building digital library interfaces and help library managers to identify their user's different requirements in the digital library interface.

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Evaluation of digital library web sites

1 Introduction

The purpose of this report is to provide an evaluation on four digital library websites that could be taken as an example of the good digital library. There are numerous communities interested in digital libraries. Each has a differing conception and definition, affecting the conceptual nature. Moreover, there are several definitions for digital library given by several authors. This evaluation report concentrated on the digital libraries that are built for research, university communities or fictions. For the purpose of the report, the working definition of digital libraries is considered as, Digital libraries are libraries with the same purposes, functions, and goals as traditional libraries, with specific digital content collection development policy, management, subject analysis, index creation, reference work, long time preservation, and the contents are accessible thorough the interface of the library website. This report evaluates four digital library websites, two in International perspective:

- i) Public Library of Science (PLoS),
- ii) International Children's digital Library,

and in a specific country, Bangladesh perspective:

- iii) North South University, and
- iv) International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B)

This evaluation report has discussed each of the digital library initiatives from three different points of views:

- a) Usefulness and value of the content,
- b) Richness of functionality, and
- c) Ease of use.

Later the evaluation followed by discussion and conclusion.

2 Reasons behind choosing these digital library websites

For this report, to make a balance between different kind of digital libraries like, public, children, university communities, and special digital libraries and rational in case of choosing libraries. However, there is a condition for choosing two from international perspectives and two from the own country perspective. Follow on all the conditions and to grab a balanced picture about digital library websites, this report chooses the successful digital libraries that reflect different kinds of digital library. In case of selecting the digital libraries, the users' community has been also taken into consideration.

2.1 Public Library of Science (PLoS)

The Public Library of Science (PLoS, website address: <http://www.plos.org>) is a nonprofit publisher and advocacy organization with a mission of leading a transformation in scientific and medical research communication. This initiative began early 2000 as an online petition initiative by Patrick O. Brown, a biochemist at Stanford University, and Michael Eisen, a computational biologist at the University of California, Berkeley, and the Lawrence Berkeley National Laboratory.

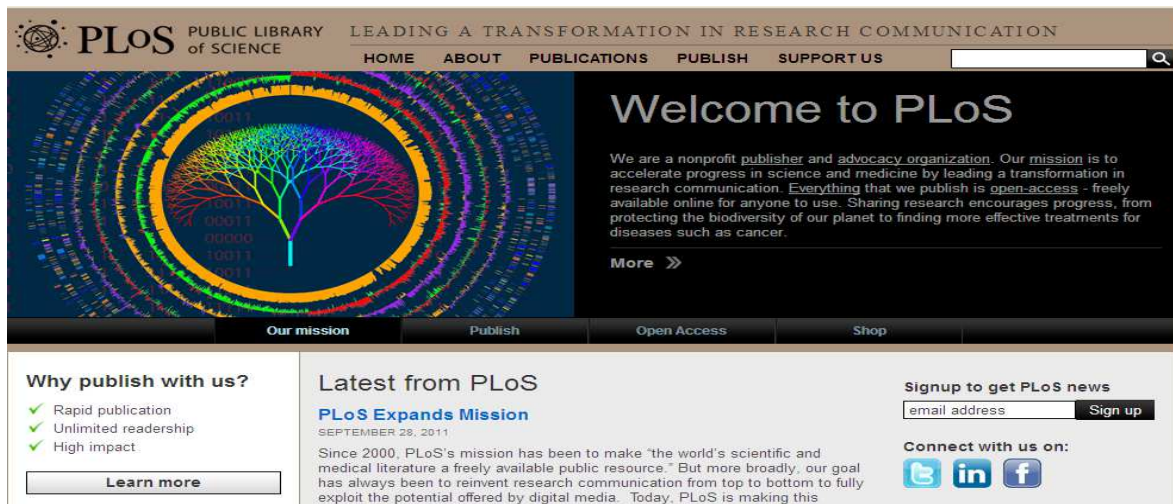


Figure 1. Home page of the Public Library of Science

The petition called for all scientists to pledge that from September 2000 they would discontinue submission of papers to journals which did not make the full-text of their papers available to all, free and unfettered, either immediately or after a delay of several months.

Since its founding in 2000, PLoS's mission has been to make "the world's scientific and medical literature a freely available public resource." All material published by the Public Library of Science, whether submitted to or created by PLoS, is published under an open access license freely available online for anyone to use. It allows unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. PLoS publishes seven peer-reviewed open-access journals, namely, PLoS ONE, PLoS Biology, PLoS Medicine, PLoS Computational Biology, PLoS Genetics, PLoS Pathogens, and PLoS Neglected Tropical Diseases. The journals vary in their selectivity and contain differing amounts of commentary articles from opinion leaders in a variety of scientific disciplines.

2.1.2 Usefulness and value of the content

The designated user community of PLoS consists of everyone, from researchers, educators, and patient advocates to funders, policymakers, and the public who are interested in medical research or bio-diversity, climate change, etc. One of the aims of PLoS is to minimize the delay between the generation and publication of new research. The content is peer-reviewed, citable, publicly archived, and included in PubMed. By facilitating and accelerating the sharing of new findings and ideas, PLoS accelerates the research cycle itself. The authors use Google Knol to write their submission and are in complete control of the appearance of their article. Submission to publication can take place in a matter of days and there are no publication fees.

2.1.3 Richness of functionality

A wide variety of functionalities are available in PLoS site. For example, there are simple search box with the option of advance search for expert users. In addition the search box appears on every screen while browsing, that helps users to use the time maximum rather than go back to home page. The simple search can be further filtered by subject categories, journal name, article types, etc. The Instructions for constructing search is always available on the right hand side of the advance search option. In addition, while exploring the journals it gives at a glance on recent research, featured discussions and most viewed articles, which help a user to be up-to-date with the research community.

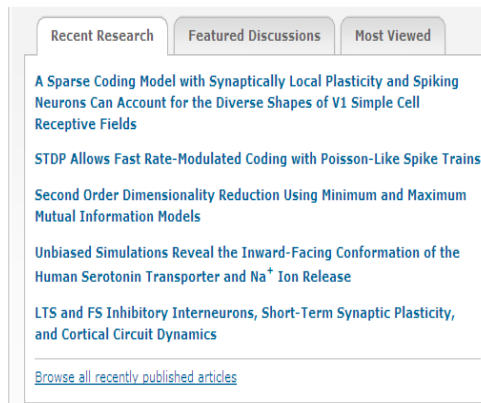


Figure 2. Quick navigation bar

The majority of the contents is broken down according to respective discipline. Users can browse the articles by publication date, collection name, subject, current issues or can give a look to the journal's archives.

2.1.4 Ease of use

The interface is a very friendly and all the functionalities are visible at a glance. There is a global navigation bar which provides links with useful information for its readers and authors who want to submit their article.



Figure 3. PLoS on Twitter

The footnote provides information on the license policy that the website adheres to this. The bottom of the website provides other useful links with information to – privacy statement, terms of use, information for advertisers, media inquiries and site map. Moreover, there are web 2.0 technologies embedded in the site like blogs and twitter that simply enhance the communication between the user community and keep them updated.

2.2 International Children's digital Library

The International Children's Digital Library (ICDL, website address: <http://en.childrenslibrary.org>) launched in November 2002, is a free online library of digitized children's books. This is the largest collection of its kind.

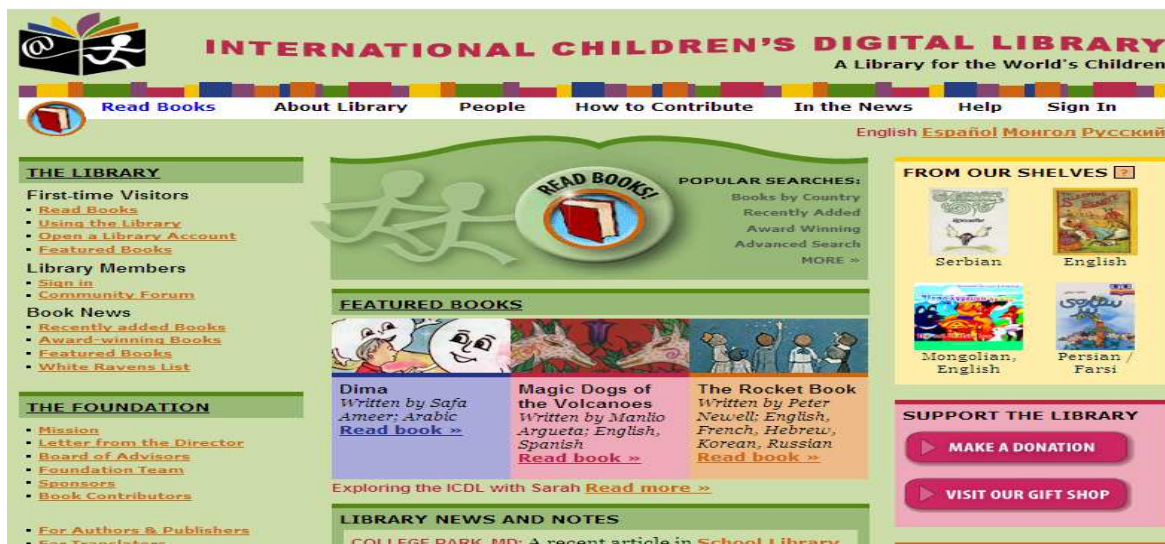


Figure 4. Home page of the International Children's Digital Library

The Library is housed by the International Children's Digital Library Foundation and was originally developed in the College of Information Studies and the Human-Computer Interaction Laboratory at the University of Maryland. The ICDL Foundation's goal is to build a collection of books that represents outstanding historical and contemporary books from throughout the world. Ultimately, the Foundation aspires to have every culture and language represented, so that every child can know and appreciate the riches of children's literature from the world community. The goal of the library is to excite and inspire young readers to become better world citizens by leveraging technology to reach underserved children who have little access to libraries. The ICDL is offered free of charge to everyone, everywhere with no advertising.

2.2.1 Usefulness and value of the content

"Denial of access to information in one's mother tongue is equivalent to a denial of a human right." - UNESCO (2005). One of the fundamental principles of ICDL is that children and their families deserve to have access to the books of their culture, as well as the majority culture, regardless of where they live. The ICDL spans the globe with thousands of children's books from over 73 countries, in a wide range of beautiful languages with attractive illustrations. It is designed specifically for use by children ages 3 to 13.



Figure 5. Short description of books

The ICDL has a collection of thousands books, completely free, in dozens of languages. Books are selected based on quality and appropriateness and are presented in their original language with copyright permission from publishers or authors. All books have summaries in English and the native language of the book, special support for readability - by zooming text (for many books) and many books translated into other languages too.

2.2.3 Richness of functionality

The Home page showed language option for English, Mongolian, Spanish, Russian languages. Other than that users can select Arabic, Chinese (Simplified), Chinese (Traditional), Croatian, Filipino/Tagalog, French, German, Hebrew, Italian, Persian/Farsi, Polish, Portuguese, Thai from language selection option. However, as it demands as international, therefore it should try to cover all the languages of the countries that are member of the United Nations. However, the collection is built on 73 different languages that is quite an excellent gathering.

2.2.4 Ease of use

The interface is easy for user, especially for children. It has a simple search box, beside it there is search for books by countries, advanced search, keyword search, recently added books, award-winning books, collection, featured book, etc. Children can search for books by location, color, length, intended age group, content type, and emotional quality, among other qualifiers.



Figure 6. Simple search interface

An advanced search option is also provided for more experienced or older users, and all users can register to save search preferences and favorite books. Apart from this, there are number of options for choice to read books according to length of books like short books, medium books, long books; according to the nature of stories like fairy tales and folk tales, kid characters, real animals; according to pictures character like imaginary creature character, picture book, chapter books; according to age like three to five, six to nine, ten to thirteen , also it give the user to choose books according to color of covers like Rainbow , red, orange, yellow, green, blue and many more choices.

2.3 North South University

North South University (NSU, website address: <http://library.northsouth.edu>) is one of the pioneer universities in Bangladesh in the private sector. The University Library launched in 1992 and using Bilingual Library Management Software, developed by them.

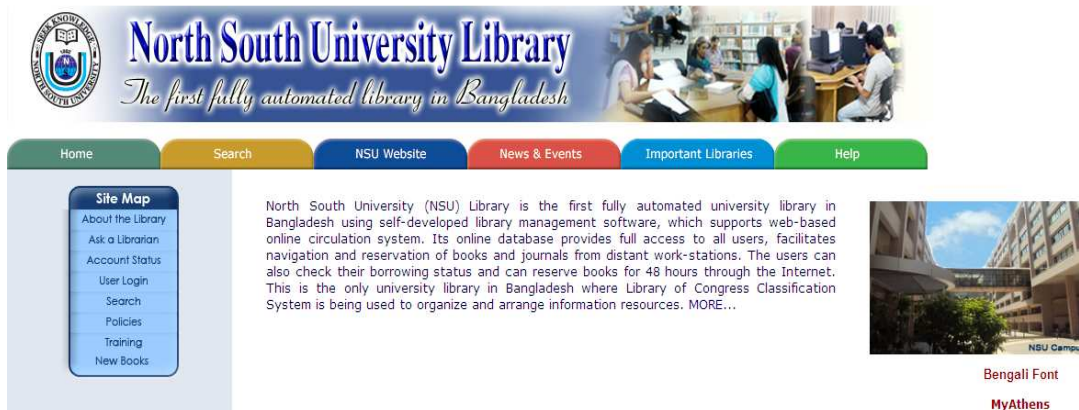


Figure 7. Home page of the North South University Library

It supports both Bengali and English languages, web-based online lending, reservation, browsing databases of full-text e-books, online journal archives, books, CDs and journal catalogues, auto email alert services, user statistics, etc. Its online databases provide full access to all users, facilitates navigation and reservation of books from remote workstations through its own website. NSU has developed an Institutional repository by using its own software in 2003 and have a collection of approximately 22,000 articles and reports and 2,000 full-text e-books.

2.3.1 Usefulness and value of the content

The NSU digital library allows its university users' community to access a lot of different e-resources, repositories, print archives etc. that are subscribed by the same university. However, the access is not free and it needs membership, which is a valid university ID. It covers all the discipline and courses that taught in that particular university. Beside that the university preserved the preprint or post print of articles that are published in peer-reviewed journals by the university communities.

2.3.2 Richness of functionality

The digital library is supports web-based online circulation system. Its online database provides full access to all users, facilitates navigation and reservation of books and journals from distant work-stations.

Search

NSU Website

News & Events

Important Libraries

Help

Details for Book

Title

Author

Publisher

Publication Year

Edition

Call Number

Apache: The Definitive Guide

Ben Laurie

O'Reilly & Associates, Inc.

1999

2nd

TK5105 .888

005.713769

L39

1999

View Full Text

Status of Books

Accession	Volume/Part	Edition	Location	Availability	Loaned To	CD Accession	Reserv
50000052		2nd	LIB	Available	N/A		<div></div>

Figure 8. Book details interface

The users can also check their borrowing status and can reserve books for 48 hours through the Internet. At the same time, users can read and download full-text of all the subscribed e-journals, e-books, and digitized materials of the institutional repositories. It is a combination of digital library systems and automated library system. As a result, users need not to explore two sites for the same purpose.

2.3.4 Ease of use

The interface is friendly, but it needs login as well the user should have a valid university ID.

Catalogue	e-Resources	Repositories	Print Archives	Membership
Search Books	Online Journals	e-Journals	Print Journals	Policy
Search Audio-Visuals	Online Books	e-Books	Print Magazines	Application Form
New Collections	Subject Index	e-Magazines	Print Newspapers	Account Status
Book Reservation			User Manual	Book Requisition

Figure 9. Collections list at a glance

Through the interface user can search books, online journals, print journals, e-journals, audiovisual materials, online books, e-books, print magazines etc. They can also come to know about new collections, search subject index, e-magazines, print newspapers and check their account status, book reservation and send a requisition for new books. However, as a university digital library there is missing some functionality like user community, RSS feed

or virtual reference services. The limitation of the search is that user can search only one kind of materials at a time that is time consuming and barrier to see what other resources have at the same time.

2.4 International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B)

International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B, website address: <http://dspace.icddr.org/dspace>) - an international health research institution located in Dhaka, Bangladesh since 1960. It addresses some of the most critical health concerns facing the world today, ranging from improving neonatal survival to HIV/AIDS.

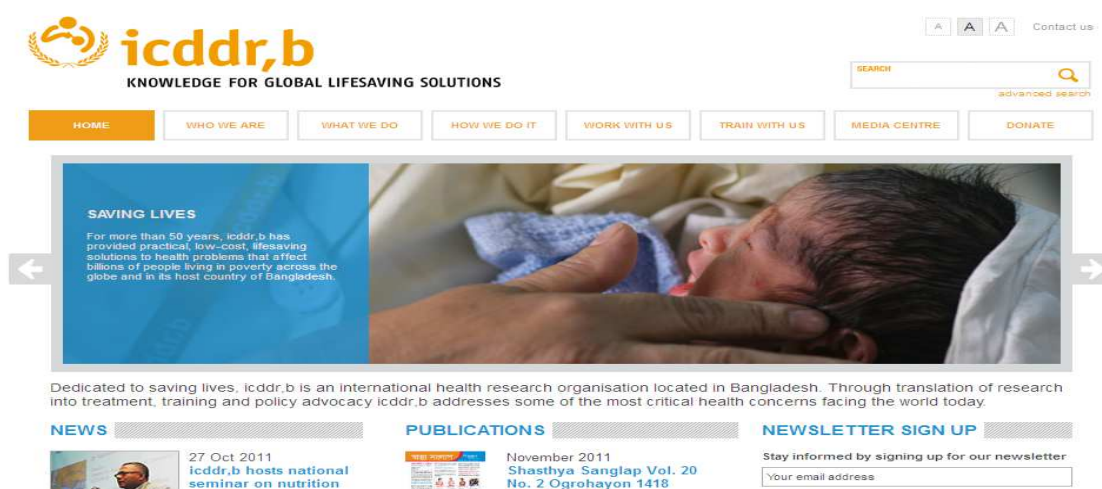



Figure 10. Home page of the International Centre for Diarrhoeal Disease Research, Bangladesh Library

In collaboration with academic and research institutions throughout the world, ICDDR,B conducts research, training and extension activities, as well as program-based activities, to develop and share knowledge for global lifesaving solutions. It has an institutional repository, in real sense it is a flavor of digital library but somehow in advance level. The mission of the Institutional Repository is to capture and preserve ICDDR,B's intellectual output and make them available online for global research community.

2.4.1 Usefulness and value of the content

The first user community is the researcher and staff of the organization. It is also available by anyone from anywhere in the world. However, as per organization policy the articles that are copyrighted by any publishers are only available to the research community of the organization with valid ID and password.



Log In to DSpace

[New user? Click here to register.](#)

Please enter your e-mail address and password into the form below.

E-mail Address:

Password:

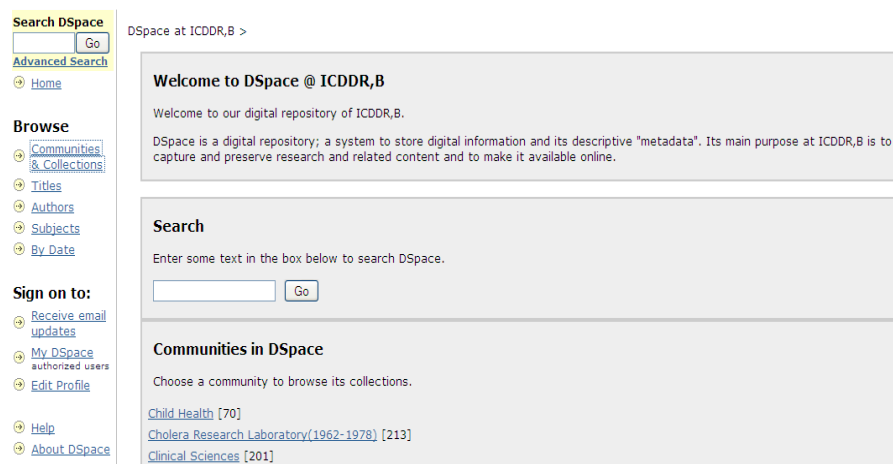
[Have you forgotten your password?](#)

Figure 11. DSpace Log In of ICDDR,B

Besides the immediate user community, document submitter can get access to Institutional Repository; in that case he/she also needs ID & Password. The system administrator gives the ID & password. The content covers a broad area of life sciences, and biomedical literatures, including Journal articles, abstracts, letter, conference proceedings, monographs, reports, and book chapters.

2.4.2 Richness of functionality

As the library is using open source software DSpace, there are some limitations about the richness of functionality. It is still using the defined basic functionalities of the DSpace software. For institutional repository users, it is quite all right, but sometimes it is time consuming to get a specific literature. For example, there are simple search box with the option of advance search for expert users. In addition the search box appears on the left side top corner of every screen while browsing. However, the simple search cannot be further filtered.



Search DSpace

[Advanced Search](#)

[Home](#)

Browse

[Communities & Collections](#)

[Titles](#)

[Authors](#)

[Subjects](#)

[By Date](#)

Sign on to:

[Receive email updates](#)

[My DSpace](#)
authorized users

[Edit Profile](#)

[Help](#)

[About DSpace](#)

DSpace at ICDDR,B >

Welcome to DSpace @ ICDDR,B

Welcome to our digital repository of ICDDR,B.

DSpace is a digital repository; a system to store digital information and its descriptive "metadata". Its main purpose at ICDDR,B is to capture and preserve research and related content and to make it available online.

Search

Enter some text in the box below to search DSpace.

Communities in DSpace

Choose a community to browse its collections.

[Child Health](#) [70]

[Cholera Research Laboratory\(1962-1978\)](#) [213]

[Clinical Sciences](#) [201]

Figure 12. Search interface of ICDDR,B's Dspace

The Instructions for constructing search is not available anywhere, so the users should be an expert internet user. The majority of the contents is broken down according to the user community. Users can browse the articles by communities and collection, titles, authors, subjects and publication date too.

2.4.3 Ease of use

The interface is a friendly, but all the functionalities are not visible at a glance. There is a global navigation bar at the right hand side. The bottom of the website does not provide any other useful links with information. There is no use of web 2.0 technologies that embedded in the site like blogs or twitter. However, the registered users receive updates about their research interest through e-mail.

3 Discussion

This report evaluated digital library websites of four different kinds. The first one is open access in nature and accessible by everyone, but the content (medical/biodiversity research) of the library itself decide about its user. The second one is for children that range from 3 to 13 years and the content is only fictional or pictorial books that suit its user community. The third one reflects university community and has controlled user community. Last but not the least, the fourth one is for research communities of life science and medical research with controlled access to some resources and free access as well for other resources. All of them have different approaches for usefulness and the value of content, originality and richness of functionality, and ease of use. It seems that they tried their level best to give the maximum flexibility to the user to get the right materials at the right time. An extensive diversity of ways to retrieve desired materials are also considered by those libraries. All of the interfaces are designed keeping in the mind of both the new users and expert users. Only one of them used the state of the art technology like web 2.0 to enhance more facilities between user communities. The majority of them followed the conventional way of digital libraries, but tried a lot to give maximum functionality according to the level of users.

4 Conclusion

In a nutshell, a digital library web interface is the key for users' access. This key should be built according to the needs of the users' communities. These library websites could be done in more improvise ways if they conduct a survey and consult the user feedback to develop and add more functionality for the respective websites. However, a new digital library project may consult these library websites to have ideas for their respective digital library web interface.

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