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Usage of Digital Resource at PSNACET Library Based on the Greenstone Digital Library Software

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Abstract – **This paper discusses about the usage of various electronic resources available in digital library of PSNA College of Engineering and Technology, Dindigul (PSNACET). Various formats of digital collections such as e-resources, audio and video materials, question papers etc have been provided in PSNACET digital library software for the use of faculty members and students community. This paper also describes briefly about Green Stone Digital Library (GSDL) software installation steps and few customized screenshot which are being currently used in the library. The use of GSDL for digital archiving can help in transforming the PSNACET library into a knowledge dissemination centre and the librarian as knowledge manager or information scientist.**

Keywords: **Usage of Digital Resource, E-Resources Usage, Digital Library Open Source Software Usage**

I. Introduction

When one thinks of a library, the image that springs to mind is huge hall and rows and row of shelves with books, a musty smell, and dark corners with single light bulb hanging from the ceiling. But times now have changed; the advent of digital library has paved the way of reducing the size of libraries from biggest to the very small. In fact, modern digital libraries are moving towards smaller and smaller but with rich potential of digital information. This smallness of libraries is due to digitization of information which has gradually replaced paper based records. The changing in tune with the time and technologies, and librarian has become an information manager, knowledge manager, knowledge provider or information scientist who keeps the library on a desktop and retrieve digital information to their users by using digital library software. The digitized information is mostly used in libraries which are widely accepted by the modern user and high tech reader. Academic libraries can no longer confine their document collection to the traditional print materials alone, it will be advanced multimedia environments housing all digital collections. In addition to print materials, modern academic libraries need to select, collect, organize, maintain and serve resources in various digital formats. Edward A Fox says that *"The benefits of Digital Libraries will not be appreciated unless they are easy to use effectively"* So, we the Librarians need to familiarize, learn and utilize opens source software effectively like *GSDL, D Space, E-Print, My Library and CDS* etc which all are widely used in many libraries for managing their digital collections in an effective manner.

II. About Greenstone Digital Library Software

Greenstone is open source digital library software is produced by the New Zealand Digital Library Project at the University of Waikato. UNESCO has been promoting, arranging user testing, helps with internationalization and workshops on GSDL. It is open source multilingual software for building and distributing digital collections on the internet and or on removable media. Greenstone has been very popular in developing countries as it is very easy to create collections in Greenstone as well as it has one of the important feature of exporting collections on external storage devices, this has been found very useful where Internet connectivity are not yet available. It can run under LINUX and Windows platforms. User can create files using various formats. The aim of the GSDL is to archives and retrieval of digital resource such as e-books, e-journals, audios, videos, course materials, syllabus, photos, and previous year question papers etc… through internet or intranet.

III. Objectives

The ultimate goal of digital library is usage of its digital collection by its user which is defined to be "a process of establishing a contact between the right reader and the right document/information at any digital format at the right time in a right personal way". The specific objective of the present study is to find out how the digital library resources have been used by PSNA CET digital library user.

IV. Open Source Software

Open source software is software whose source code is available for modification or enhancement by anyone."Source code" is the part of software that most computer users don't ever see; it's the code computer programmers can use to change how a piece of software works. Programmers who have access to a computer program's source code can improve that program by adding features to it or fixing parts that don't always work correctly. Open source first evolved during the 1970s with Richard Stallman, from MIT who coined the term "free software".

V. GSDL Installation Procedure

To install the Windows version from the CD-ROM, insert the disk into the drive (e.g. into D:). If the installation procedure does not start automatically after about 20 seconds, click on the Start menu, select Run and type D:\ setup.exe, where "D" is the letter that identifies your CD-ROM drive. For Windows, select Run from the "File manager" and type D:\Windows\win3.1\setup.exe. For the simplest installation, just accept the default at each point by clicking the Next button. That's all you need to do! Greenstone is installed in the directory C:\Program Files\ gsdl. Once installation is complete, to start your Greenstone system click on the Start button, open the Program menu, and select Greenstone Digital Library. This brings up a dialogue box: just click Enter Library. This automatically starts your Internet browser and loads the Greenstone Digital Library home page. You can enter the Greenstone Demo collection by clicking on its icon.

VI. Steps to Creating Digital Library Using Gsdl (2.85)

1. Collect information
2. Describe the Meta data
3. Configure the collection
4. Build the collection
5. View the collection
6. Working with collection

VII. Salient Features of Digital Library

1. It provides access to very large collection of information.
2. It focuses on providing access to primary or complete information, not merely surrogates or indexes.
3. It supports multimedia contents and user friendly interface.
4. Unique referencing of digital objects and network accessible.
5. Enables link representation to local and external hyperlink.
6. It supports advanced search and retrieval.
7. It available for a very long time and should not be dependent on specific hardware and software.
8. It supports traditional library missions of collection development, organization access and preservation.
9. It supports publishing, annotation and integration of new information.
10. It fulfills the 5 laws of library science.

VIII. Data Analysis and Discussion

Table I reveals the overall usage as well as each one collection of digital resources based on the user visits. It also indicates that digital resources have been classified into 3 broad categories. The data used for analysis is collected during the period from 01/11/2013 to 30/11/2013.

A. e-resources

It's noted that the overall 32% of the users utilized the e-resources which includes the e-collections of e-books (43%) , Monographs (9%), ASTM Digital Library(5%), Applications Downloads(3%), Course Materials(3%), IS Code Books(3%), Tamil e-Books(8%),

TABLE I OVERALL USAGE OF DIGITAL RESOURCES BASED ON THE DATA COLLECTED FROM GSDL SOFTWARE

Available E-Resources	Usage Count	Overall %
CATEGORY I (E-RESOURCES)		
E-Books	2825 (43%)	
Monographs	600 (9%)	
ASTM Digital Library	306 (5%)	
Application Down Loads	170 (3%)	
Course Material	635 (10%)	
IS Code Books	189 (3%)	
Tamil E-Books	550 (8%)	
Staff Publications	526 (8%)	
Telephone Directory	428 (7%)	
Library Circular	181 (3%)	
Newspapers	150 (2%)	
Total	**6560**	**32%**
CATEGORY II (QUESTION PAPERS)		
Previous Year Questions	9258 (81%)	
Gate Question Papers	289 (3%)	
Solved Question Papers	1002 (9%)	
Interview Questions	403 (4%)	
Syllabus	478 (4%)	
Total	**11430**	**56%**
CATEGORY III (AUDIO & VIDEO MATERIALS)		
NPTEL Videos	1161 (47%)	
Placement Videos	186 (7%)	
Audio Books	381(15%)	
Higher Education TVs	572 (23%)	
Utility Software	191 (8%)	
Total	**2491**	**12%**

Staff Publications(8%),Telephone Directory(7%), Library Circular(3%), News Papers (2%). It reveals the second ranking in terms of usage of these e-collections during the usage data collected for this study period.

B. QUESTION PAPERS

It is found from the Table 1 in category II that question paper collections comes in first place with over all usage of 56 percent followed by first category e-resources. The majority of the students and faculty members utilized the question paper collection in which Anna University previous year question papers (81%), Gate Question Papers (3%), Solved Question Papers (9%), Interview Questions (4%), and Syllabus (4%). It may conclude that these e-collections are found to be the most usage among the academic community of PSNA College of Engineering and Technology for their academic and research needs.

C. AUDIO & VIDEO MATERIALS

The overall (12%) of the users were used audio and video materials available in the digital library which includes NPTEL Videos (47%), Placement & Training Videos (7%), Audio Books (7%), Higher Education TVs (23%) and Utility Software (8%). All the 261 NPTEL videos are stored in our digital library server and it can be viewed at any time within the campus without internet connection. Further, these videos have been hyper linked to NPTEL website *http://nptel.iitm.ac.in/* as well as YouTube www.youtube.com/user/nptelhrd and Placement and training videos have been linked to *www.btechguru.com/*,

Audiovisual materials are important sources of information, education and entertainment. Our library holds audio visual material such as DVD, films, pictures and photographs, audio and video cassettes etc. These resources are allowed to borrow for overnight. Recent developments in storage media, compression and encryption technology have made it possible to store large amount of multimedia documents on hard disk and disseminate through internet or intranet. The Higher Education Televisions Channels also hyper linked and our user can watch the TVs without any interruption since PSNACET network bandwidth speed is 132 mbps.

IX. PSNACET Digital Library Software

The customized home page of PSNACET digital library is shown in figure 1. The homepage will appear when you type http://www.psnadigitallib in the web browser.

It displays the category of the available e-resource in the GSDL software. Each title from the home page is hyperlinked to other relevant e-resources. The submenu has home button, simply clicking which will get back you to on home page. The scroll bars are just like windows scroll bars; They are appear on the side of the viewing area, or possibly at the bottom, when the document is too big to fit in the window. Click scroll bars to bring into view whatever's off the screen. At the bottom of this home page, a web page counter is displayed to tracks how many times a page has been visited, each time the pages loaded, the counter value is increased by one and the usage data will be stored in the usage folder *(C:\Program Files\Greenstone\etc\usage).*The counter provides useful information on how many times a digital collection has been utilized.

Fig. 1 The Home page of PSNACET Digital Library

Figure 2 illustrate the previous year of Anna University Question Papers with search result of particular keyword "java". It can be searchable through Meta data such as *subject name, regulation, semester, department, question paper code, month and year*. This search bar allows you Boolean query search. For example, ***java and 3rd sem and mca.*** From the Anna University Question Paper page search, you can make a query in these simple steps: 1. Specify what items you want to search, 2. Say whether you want to search for all or just some of the words, 3. Type in the words you want to search for , 4.Click the *Begin Search* button. When you make a query, the titles of twenty matching documents will be shown. There is a button at the end to take you on to the next twenty documents. From there you will find buttons to take you on to the third twenty or back to the first twenty, and so on. Click the title of any document, or the little button beside it, to see it. A maximum of 50 is imposed on the number of documents returned. You can change this number by clicking the PREFERENCES button at the top of the page.

Figure 3 shows the e-books available in PSNACET Digital Library and in Web. The GSDL constructs full-text indexes from the document text, and from the metadata elements such as title and author. Indexes can be searched for particular words, Boolean search, or phrases and results are ranked by relevance or sorted by metadata element. There are several ways for user to find information, although they differ between collections depending on the meta data available and the collection design. Many of the e-resources shown in the figure 4 are currently available on-line but some require readers to register.

Fig. 2 Anna University Question Papers Search

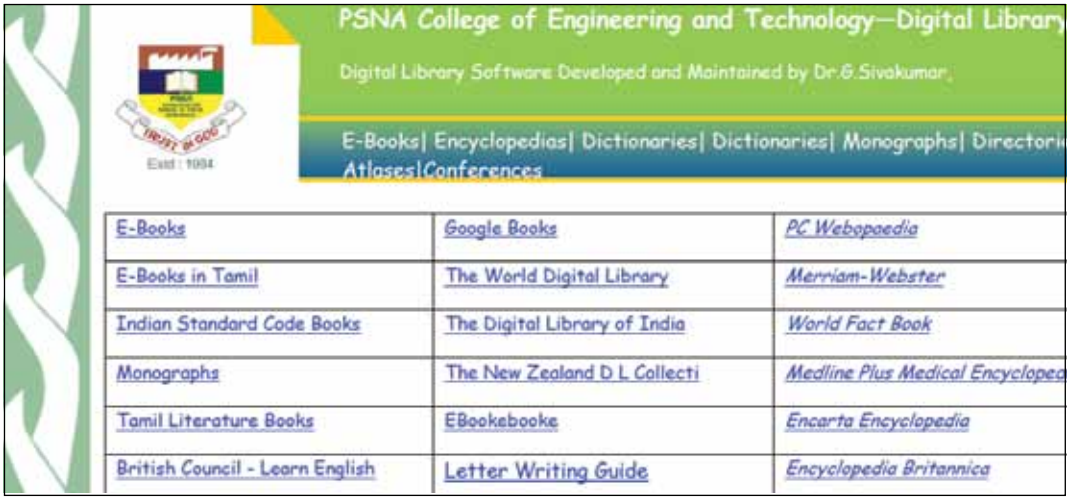

Fig. 3 E-book collection menu

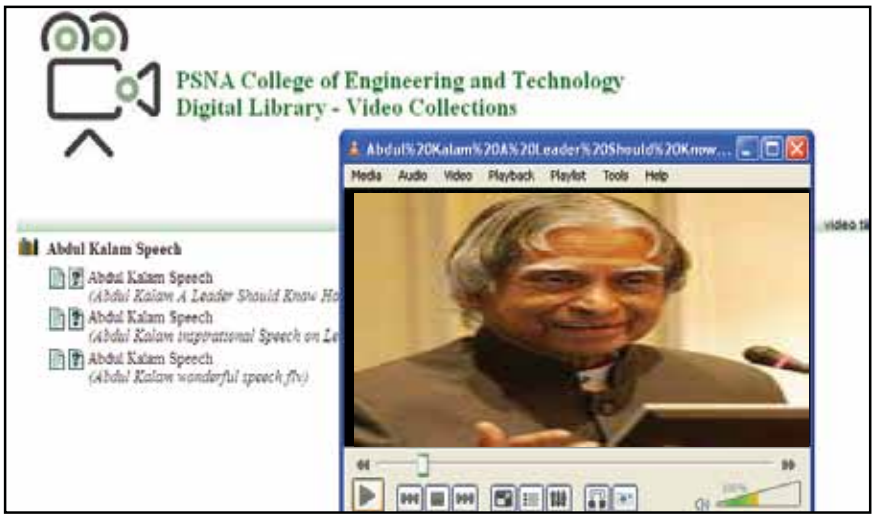

Fig. 4 Video Search and Views

Figure 4 shows the search result of video collection and viewed Abdul Kalam Speech in VLC media player. GSDL support a large number of video formats currently in use such as AVI (.avi extension), which stands for Audio Video Interleaved, This format was developed by Microsoft. MPEEG (.mpeg or .mpg extension), which stands for Motion Picture Expert Group. This format was developed by same group. QuickTime (.qt or .mov extensions).This format was developed by apple, .flv, MP3 etc. Apart from this, number of audio file formats is in use AIFF (.aif, .aiff, and .aifc extensions), which stands for Audio Interchange File Format. This was developed by Apple. AU (.au and .snd extensions).This was developed by Sun Microsystems. MIDI (.midi and mid extensions), which stands for Musical Instrument Digital Interface. Real Audio (.ra and .ram) WAV (.wav), MP3 etc. In the above screenshot figure 5, by clicking the ? mark icon (GSDL Unknown Plug-in) against each title, the video will be buffered and will then start playing automatically on your machine. If you are unable to play, you should install the VLC media player in your machine.

X. Conclusion

In general both students and faculty members like to use electronic resources instead of physical resources. They feel these resources are perceived as convenient, relevant and time saving to their work load. The inclusion of electronic resources in PSNACET digital library such as previous year question papers of Anna University, course materials, e-books, audio books and educational oriented videos are used to reduce the use of print material available in the library book racks. Most of the faculty members/students still taking printout the question papers, during this study period. Nearly 6797 printouts have been taken in library itself by students and staff. PSNACET library users use only the digital library collection more than the library for their academic activities and many of them believe previous year question papers are very much useful than other digital collections. They prefer digital collections for many reasons. One of the most important reason might have the access of these digital resources can be made from anywhere anytime inside the campus. When total processing and purchasing of hard copy of books and journals or document materials are taken into account, the e-resources reduce the cost and space in the library. Thus, such a dramatic usage from print collections to digital collections has created an impact of good e-resource available at PSNACET digital library and it definitely fulfills their research and academic needs.

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