

Health science digital library: a model of the Tamilnadu Dr.M.G.R.Medical University in India

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Abstract: Health science digital library describes the distribution of the digital resources and digital library initiative of the Tamil Nadu Dr. M.G.R. Medical University. It discusses the brief information about the e-resources available in this University. It explains the method of digitization of previous examination question papers of Under Graduate and Post Graduate courses of Medicine. The total number of question papers digitized for all the courses is 17,489 numbers. A total number of 4652 question papers were digitized under the U.G. course (Medical), 3801 for U.G. course (Para Medical), 4678 for the Post Graduate (Medical) course, 1693 for the Post Graduate (Non-Medical), 1377 for Higher Specialties and 1288 Question papers for Diploma courses. Totally around 19614 users accessed this e-resource through the University's website from January to December 2007.

Keywords: Digital library, medical university, India.

Introduction

Digitization is one of the recent trends among the different user communities to preserve the valuable documents and information for a longer period at minimum cost with the distinctive feature to retrieve at a later stage at different locations. This article highlights about the various aspects and activities of the Tamil Nadu Dr. M.G.R. Medical University and its role of digitization activities and how it had developed over a period of time to cater to the needs of the society. Nowadays, it has become inevitable to make it more digitization of all the documents and also highlights the salient features and its role in the digitization of Question Papers of the Tamil Nadu Dr. M.G.R. Medical University.

Review of literature

The review of literature is very essential to any research investigation, which gives necessary input to the investigator to frame for her/his research study on the chosen topic. The following are some of the studies carried out in this area.

Breithbach *et al.* (2002) describe the digitization project containing 19,537 wildlife slides in Colorado State University Libraries. Gatenby (2002) focused on the role of the National Library of Australia in ensuring that significant Australian resources in online form are collected, archived and made available for use in the long term. Kumaresan (2002) projected the emerging scenario of Library and Information Science professionals in the Indian environment

and emphasised the future challenges of the librarians with knowledge of network and digital information retrieval systems. Woodyard (2002) in his report gave high priority to digital material preservation with all its collection strategies having a direct or implied digital component for the British Library. Arora (2003) outlines the efforts made by Indian libraries and institutions towards formation of consortia of libraries for having access to electronic resources. The present status of digitisation of Indian Management libraries through a survey was carried out by Gaur (2003) in 500 management libraries in India. The digital device both in UK and the USA were examined by Hull (2003). Anjali Gulati (2004) discussed the status of information and communication technologies usage in Indian libraries with reference to special libraries and the efforts made by various institutions to propagate e-information products and services. Collier (2004) described the European Library project, which aims to give digital access to the combined resources of the national libraries of Europe, operating under the auspices of the Conference of European National Librarians (CENL). McMartin (2004) explained the activities of MERLOT (Multimedia Educational Resource for Teaching and Online Learning), an international consortium comprising of over 20 institutions. Partha Bhattacharya (2004) focuses on digital library initiatives in India with reference to the policy of the Government of India towards digital library development. Anuradha (2005) stated that Institutional Repositories (IR) are digital collections that capture, collect, manage, disseminate, and preserve scholarly work created by the constituent members of the individual institutions. According to Koganuramath and Mallikarjun (2005) digital Libraries are the systems providing users with the organised information access to repository of information and services at knowledge base. Sreekumar and Sunitha (2005) found that the motivational and emotional bonding among the stakeholders are melting down eventually as the digital library development process gets fired up. Sinha *et al.* (2006) presented an overview of the latest developments, that has been taken place in the area of digital library.

Need for digitalization

Digitization helps to preserve the precious materials and to reduce wear and tear on fragile

items. This does not mean however, that digital copies should be seen as replacement for the original documents. Even after digitization, original documents and artifacts must still be preserved.

It is often said that digital information is transforming the way we learn, the way we communicate, even the way we think. It is also changing the way that libraries and archives not only work, but more fundamentally, the very work that they do. It is early to overstate or underestimate the transformative power of a new technology, especially when we do not yet understand the full implication of its many applications. Librarians everywhere hear the voices of people speaking enthusiastically, urging the conversion of text and visual materials into digital form as if conversion per se were a self-evident good.

While we may not yet fully understand the ways in which this technology will and will not change libraries, we can already discern some simple, yet profoundly important, patterns in digital applications that presage their effective and creative use in the traditional library functions of collecting, preserving, and making information accessible.

Definition of digital libraries

There are number of definition regarding digital libraries, a few of them are listed below:

"A digital library is a managed collection of information, with associated services, where the information is stored in digital formats and accessible over a network" (Arms, 2000).

"Digital libraries are focused collections of digital objects, including text, video, and audio, along with methods for access and retrieval, and for selection, organization, and maintenance ... involves two communities: end users who are interested in access and retrieval and librarians who select, organize, and maintain information collections" (Witten & Bainbridge, 2003).

Characteristics of digital libraries

- Digital libraries are the digital face of traditional libraries that include both digital collections and traditional, fixed media collections. So they encompass both electronic and paper materials.
- Digital libraries will also include digital materials that exist outside the physical and administrative bounds of any one digital library
- Digital libraries will include all the processes and services that are the backbone and nervous system of libraries. However, such traditional processes, though forming the basis digital library work, will have to be revised and enhanced to accommodate the

differences between new digital media and traditional fixed media.

- Digital libraries ideally provide a coherent view of all of the information contained within a library, no matter its form or format.
- Digital libraries will serve particular communities or constituencies, as traditional libraries do now, though those communities may be widely dispersed throughout the network.

Technical architecture

The first issue is that of the technical architecture that underlines any digital library system. Libraries will need to enhance and upgrade current technical architectures to accommodate digital materials. The architecture will include components such as:

- a. high-speed local networks and fast connections to the Internet
- b. relational databases that support a variety of digital formats
- c. full text search engines to index and provide access to resources
- d. a variety of servers, such as Web servers and FTP servers
- e. electronic document management functions that will aid in the overall management of digital resources

Challenges in creating digital libraries

Creating effective digital libraries pose serious challenges. The integration of digital media into traditional collections will not be straightforward, like previous new media (e.g., video and audio tapes), because of the unique nature of digital information--it is less fixed, easily copied, and remotely accessible by multiple users simultaneously.

Advantages of digital libraries

- a. Brings the library to the user
- b. Easy access to non-print formats
- c. Increased durability of information
- d. Information can be shared quickly and easily between patrons
- e. Increased find ability

History of the University library

The main objective of this University is to promote research in areas which will act as an effective link between Health Care Delivery System and knowledge in Health Sciences. It has been necessary for the Tamil Nadu Dr.M.G.R. Medical University (TAMMU) to establish various Research Institutes and also to maintain a Central Medical Library.

The Director-General of Health Services, Government of India, New Delhi has given accreditation to this University Library as a Regional Medical Library for the Southern Region. The Medical Informatics Centre was upgraded as

a Digital Library in 2002, later as Virtual Library in 2005 with the adequate assistance of the Government of India. To this end, it is imperative that this Centre needs to be improvised to extend its services to a wider range. The prime objective of this Virtual Library is to act as a subject gateway providing access to the information resources of various libraries and information services both internal and external, all in one place, enabling users to search, browse and download any required data needed quickly and easily. The Virtual Library can be accessed via the University website: www.tnmmu.ac.in/library.html.

Network environment

The Virtual Library's major mission is to digitalize the collection, organization, resource mobilization and services of the Tamil Nadu Dr. M.G.R. Medical University Library and the Medical Informatics. Networking at the campus wide links (LAN) and the Regional Network (WAN) to link all the 209 medical and Para-medical institutions in Tamil Nadu affiliated to TAMMU through University website. The web page furnishes hyperlinks to access the following:

a) E-Question Bank, b) E-Journals, c) E-Dissertations, d) E-Databases, e) E-Books, and f) Useful Links.

Each of these, on click leads the user to the respective page. These gateways are to promote easy and quicker entry into respective info-base. A brief on each page is described subsequently.

Content Creation

It offers access to a set of Question papers in the courses offered by the University. This E-Question bank database comprises of set of old question papers in all the courses and subjects since 1990 to till date. This is categorized as Undergraduate, Post graduate, Diploma and Super Specialty. Each of this has a 'drag down' menu to choose the desired course. On selection for e.g. M.B.B.S. will display in a screen with a list of subjects & year. On choosing the year, the question paper of the chosen subject and year will be displayed for browsing.

Need for this study

The Tamilnadu Dr. M.G.R. Medical University conducts examination twice in a year. The model question papers are available in the Examination wing which is given to the library. The students who are in need of the question papers have to come to the library to take photocopy of the question papers.

Since then the Virtual Library was started and the project of digitisation of question papers and made accessible through the University's website www.tnmmu.ac.in/virlib.htm. This has been a great boon to the students' community in the medical and para medical disciplines. The

students are much benefited as they need not come to the Library personally whether they are in remote, rural or urban places.

Objectives of the study

This study attempts to: a) to give the features of the Tamilnadu Dr. M.G.R. Medical University Virtual Library, b) to highlight the need and purpose of digitization, c) to enumerate the various steps involved in digitizing the resources of TAAMU Library particularly Question Bank and d) to bring out the maximum benefit of the e-services provided by the Virtual Library to the student community.

Justifications

Though there are six e-resources namely : E-Question Bank, E-Journals, E-Dissertations, E-Databases, E-Books and Useful Links, this study is confined only to the E-Questions resource of the Tamilnadu Dr. M.G.R. Medical University, Chennai due to time constraint.

Method of digitization of question papers

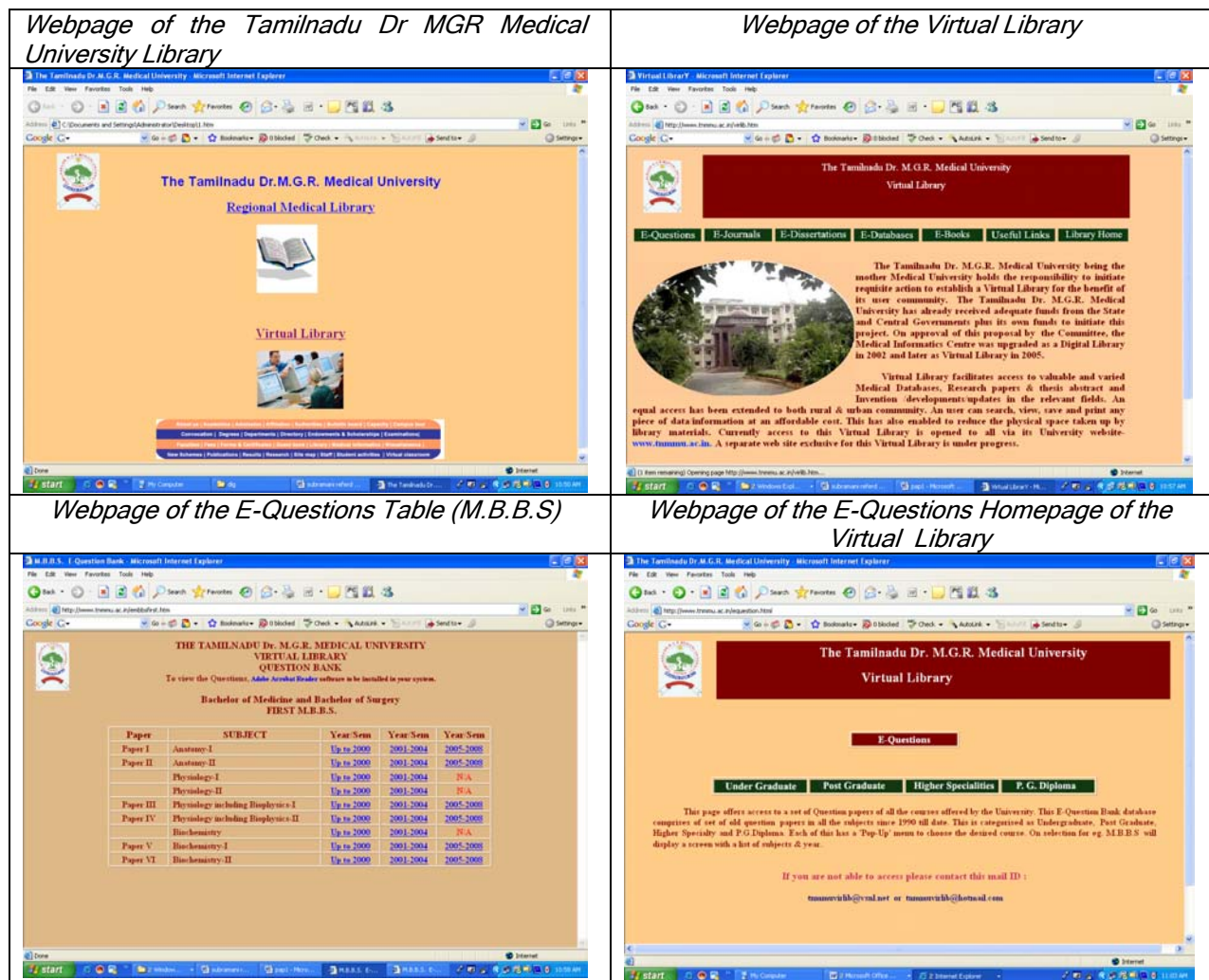
Scanning: The Question Papers are scanned as a first step by using an hp scan jet 5400c scanner. The scanned question paper is saved as tagged image file format (tiff) through Adobe Photoshop 7.0 version. The question paper is then opened with Adobe Photoshop and the canvas size of the paper is adjusted to 11.5 inches width and 8 inches height.

Editing: Then the dots or any other unwanted black lines are erased using Adobe Photoshop and then saved as Adobe PDF file. The PDF file is opened with Adobe Acrobat Reader 6.0 standard. The Month and year of each paper is added as Header on top of each paper by inserting the same, giving Arial bold as the font style and font size to be 14'. The Header is fit into margins as top as 1, side as 2.5 inches. The file is saved again as .tiff file.

Storage: Once all the question papers are scanned and edited after adding month and year for all the papers, one of the .tiff files is opened with Adobe Acrobat. All the .tiff files are added thus by creating multiple files from "Create Adobe PDF" option. All the papers are thus added and made into a single PDF file containing question papers ranging from all the years from 1990 to 2007.

Rearranging the question papers according to the years: The PDF file containing the question papers are divided into three parts: Question Papers from 1990 to 2000 given the code number as KC; Question Papers from 2000 to 2004 given the code number as KL; Question Papers from 2005 to 2007 given the code number as KQ; The KC file is renamed as code number of the Question Paper for example: 265016 KC and also

Fig. 1. Digital access to E-Question Bank in the Tamilnadu Dr.M.G.R.Medical University



the KL and KQ files are renamed the same way. **Table creation:** For each course a table is created giving the subject name, year or semester as the case may be and the question paper files are arranged according to the years. The .pdf files can be opened only when the computer system is supported with Adobe Acrobat Reader. The reader can also be downloaded from the Question Bank webpage provided in the top of each page so that the students are benefited. **Links:** The hyperlinks to each PDF file is done by giving the respective file name in the option Hyperlink from the menu "Insert". **Webpage:** A pop-up menu is created giving the Undergraduate, Postgraduate, Higher Specialities and P.G. Diploma. (<http://www.tnmmu.ac.in/equestion.html>) from which the students can choose the course and link to the webpage: <http://www.tnmmu.ac.in/virlib.htm> (Fig.1).

Data analysis

Table 1 reveals the data that the total number of question papers digitised for all the courses is 17,489 numbers. The years are divided into three

blocks : Upto 2000, 2001-2004 and 2005-2007. The courses Under graduate and Post Graduate are divided into Medical and Para Medical disciplines. A total of 4652 question papers were digitised under the U.G. course (Medical), 3801 under U.G. course (Para Medical). The papers digitised under the Post Graduate (Medical) course is 4678, 1693 under the Post Graduate (Non-Medical), Higher Specialities (1377) and Diploma courses (1288) papers were digitised. The maximum number of Question papers digitised (4678) of Post Graduate (Medical) is revealed from the Table 1.

Conclusion

Medical library in recent years depends on an efficient and systematic management for the flow of medical information in digitalized form. The preservation of the digital information has become a major challenge to the society. Due to digitalization radical changes are taking place in information storage and dissemination. The present study has attempted to find out the special features of the virtual library and found that E-

Table 1. Digitised question papers- all courses

Year	Under Graduates (Medical)	Under Graduates (Para Medical)	Post Graduates (Medical)	Post Graduates (Para Medical)	Higher Specialities	Diploma	Total
1990-2K	2032	1901	2273	650	714	705	8275
2001-4	1729	1141	1515	584	365	379	5713
2005-7	891	759	890	459	298	204	3501
Total	4652	3801	4678	1693	1377	1288	17489

Source: <http://www.tnmmu.ac.in/equestion.html>

Questions has benefited for the users community.

The total number of users accessed this e-resource through the University's website is 19,614 for the year 2007.

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