ELECTRONIC THESES AND DISSERTATIONS (ETD) INTIATIVES TO PROVIDE OPEN ACCESS TO PUBLIC FUNDED RESEARCH IN INDIA

T K. Gireesh Kumar

Technical Assistant
International Advanced Research Centre for Powder
Metallurgy and New Materials (ARCI),
Balapur, Hyderabad
Andhra Pradesh.
gireesharci@gmail.com

M. Jayapradeep

Reference Librarian
Kerala University of Fisheries and
Ocean Studies Panangad
Kochi, Kerala.
mjayapradeep@gmail.com

INTRODUCTION

Managing knowledge is one of the most important tasks for modern society. Knowledge Management (KM) deals with organizational processes and strategies to manage this critical asset. Knowledge Management is important for the survival and success of the organizations. The primary difficulties are related to the location of knowledge especially explicit knowledge. These problems have been tremendously simplified with Information Technology (IT).

The purpose of the thesis is to provide an experience in scholarship, which will be of enduring value to the student in understanding how new knowledge is acquired and communicated within the chosen field. Every year, nearly 8000-10000 PhDs are awarded in India[1]. Indian universities play a major role in generation and dissemination of knowledge by research and produce PhD theses as a unique genre of information source. Open Access online PhD theses are highly connected to the purpose of universities and the value of scholarship. It advances the university's interest and fulfils its mission to share the knowledge it produces.

The volume of theses and dissertations represent the quantity of the intellectual output of the academic and research institutions. It is also considered to be the most important group of information resources in an academic institution. However, in most of the universities and research institutions, theses/dissertations are not accessible to the users since its circulation is restricted to the university community only. Doctoral dissertations are the results of four to five years of intense research work involving huge investment of resources built on public money. A thesis should reflect quality of research work conducted by a student and the ability of an institution to lead and support original work of research in a given discipline.

Electronic Theses and Dissertations (ETD), many a times is a sub set of local institutional digital repositories of documents. It expands the access and visibility of

doctoral research and provides a platform for researchers to both deposit and make their work accessible worldwide. Research scholars can be familiar with the format and structure of the theses thereby producing better theses. Trends in the western countries indicate that the Universities build Digital archives for their growing number of PhD theses/ dissertations and provide unrestricted web access to the scholarly community. It facilitates the users to access the resources, which were kept as closed access, un-tapped and under utilized assets till now. Thus, Open Access to research maximizes research access and thereby research impact, making research more productive and effective.

According to The Guide for Electronic Theses and Dissertations there are two types of electronic theses and dissertations:

1. ***All-electronic documents***: Characteristics of this type are (a) they are prepared using electronic tools (e.g. Microsoft Word, LaTeX), (b) are submitted as digital documents to an online collection, (c) may be converted into an alternate digital format that is easy to preserve and archive, (d) can contain hyperlinks and multimedia components (e) support full-text searching; easy to share and discover research

2. ***Paper documents***: converted to digital documents: Characteristics of this type are (a) digital file is created by scanning in the pages of theses or dissertations (b) need more e-storage space (c) do not easily support full-text searching.

Collection of an ETD can be of Doctoral, MPhil or Masters Dissertation submitted in electronic format. UGC in its regulations in 2005, recommend for submission of metadata and full text of doctoral theses in electronic form to create a National theses database and also to have a bibliographic control of theses and dissertations produced by the universities. Recently UGC issued the gazette notification mandating the Universities to sign MoU with the national agencies or digitizing and keeping their PhD theses content as archives available publicly and also made policies and rules for collecting e-format of PhD theses from the students. National Knowledge Commission (NKC) and other advisory bodies also recommend universities to disseminate Theses and Dissertation through Open Access channels. In line with the UGC regulations, some of the universities and national institutes initiated a movement towards the creation of ETDs at their own or became the part of National initiatives. Some have already introduced online submission of theses and dissertations of their students and scholars, customized browsing facility etc. However, most of the universities and institutions have not started their Open Access ETDs. Issues relating to ownership, copy right, plagiarism, access limitations, long term preservation, publishers view, cost of hardware, software, infrastructure and maintenance are yet to be streamlined. The yeomen services rendered by these agencies and INFLIBNET have created a trend for national level ETDs at Universities or National Institutions. However, national ETD initiatives are still in developmental stage where more action plans are needed.
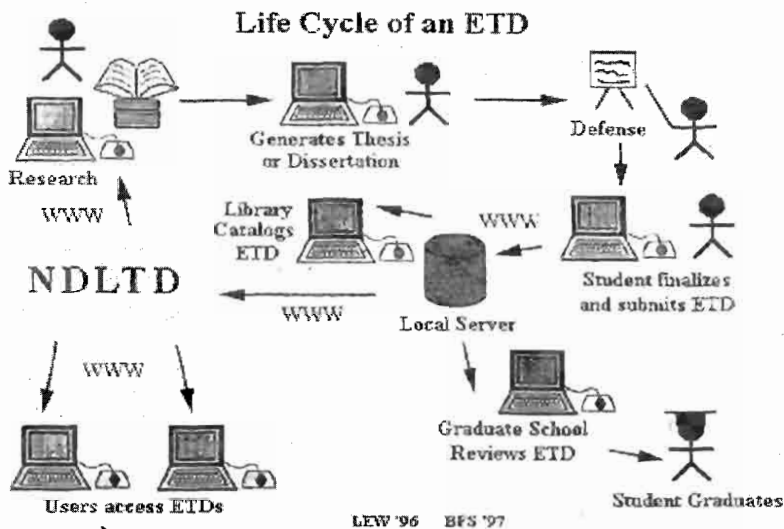
Fig. 1 Life Cycle of an ETD (Courtesy *http://quod.lib.umich.edu/)*

OBJECTIVES AND METHODS

Main objectives of the present study are:

> * To compare the features of major ETDs available in India

> * To investigate the type of resources/collection, coverage and accessibility options of the above ETDs

> * To list out the comparative advantages and limitations of other organizational/institutional electronic theses and dissertation databases available in India.

METHODOLOGY

ETD initiatives in India have been identified through literature survey and Internet search using different type of search engines and online information sources. Directory of Open Access Repositories (DOAR) and Registry of Open Access Repositories (ROAR) have also been consulted to identify the ETDs that exist in India. Analysis of web contents of these ETDs and expert's opinion at universities were also used for the comparison of the databases.

251

ADVANTAGES OF ETD

- Encourages and supports Open Access
- Helps to prevent plagiarism in Theses submitted to universities.
- Provide easy and faster access to the research output any time, for any user.
- Helps in raising the standard and quality of research
- Ease of accessibility on 24 x 7 basis for any user at anywhere.
- Provide rich interaction with hyperlinks, audio-video multimedia, dynamic pictures, color diagrams, charts, programs and codes etc.
- Reduces the cost of TD submission, which is beneficial to the research worker.
- Enhances the standard and quality of future research works
- Explores the opportunities of electronic publishing trend in academic sector
- Helps to scholars to understand methodology, standards, format etc used in different environments
- Benefits the researchers by enhancing the quality of the research work at initial level and showcase the universities intellectual achievements worldwide.
- Helps university/organization to develop their digital library services
- Great relief to Authors since it involves zero paper cost, and to Libraries since it saves shelf space.

ETD INITIATIVES IN INDIA

Open DOAR is an authoritative directory of academic open access repositories. Directory of Open Access Repositories (DOAR) lists 53 digital repository initiatives from India. Out of 53, only 25 repositories list Theses/Dissertations as content in their repositories. Four are exclusive ETDs. KrishiPrabha of ICAR is not listed in DOAR as on 22 Feb 2012. Registry of Open Access Repositories (ROAR), which aims to promote the development of open access by providing timely information about the growth and status of repositories throughout the world, report 80 Indian digital repository initiatives (as on 22 Feb 2012). The ETD initiatives have been started in India in late nineties.

First ETD repository was created in Kerala Agricultural University in 1998 as part of the KAULIS project. At that time there was no Digital Library software like Greenstone or DSpace available in India. Even the term Digital Library was not coined or normally used. University prepared a database of its dissertations in MS Access. The record contained bibliographical as per Common Communication Format (CCF). Dissertations were digitized and prepared as electronic books using pdf format. Chapter, subheadings.

photographs, illustrations, tables etc were all book marked. The search mechanism took the user to the concerned page where the information searched for occurred. Even though database of about 3000 dissertations were prepared only about 500 theses were digitized and linked to the database. The repository was available in the library site of KAULIS for a short period. A searchable digital library in CD ROM which can be installed in any system, consisting about 500 dissertations was also prepared. But the University could not continue the project for various reasons.

First institutional Repository which also contained ETD was started at IIT, Bombay in 1999[5]. IIT Bombay created their repository with Greenstone digital library software and now covers all PhD works of the institute in engineering science and has around 3000 full text T/D downloadable in the campus network.

Sheeja and Surendran give 11 institutional and university initiatives as major repositories of doctoral theses in India. Content-wise. DOAR indicates that there are only four exclusive ETDs as follows:-

1. University of Mysore-Vidhyanidhi @ http://www.vidhyanidhi.org.in
2. SodhGanga Inflibnet @ http://shodhganga.inflibnet.ac.in/
3. Mahatma Gandhi University, Kottayam @ http://www.mgutheses.org/
4. Indian Institute of Science, Bangalore @ http://etd.ncsi.iisc.ernet.in/

In 2005 UGC enacted Submission of Metadata and Full-text of Doctoral Theses in Electronic Format Regulations which created awareness on ETDs as well as generated interest and provided some standards to creation of electronic dissertations in universities. This is about 10 years after a university in India developing and testing a successful Full Text Digital Library of Theses, which went without any follow up. Even now that prototype developed in 1998 can stand with any modern ETD collections. Search efficacy and standards of that archive is still admirable.

VIDYANIDHI

Vidyanidhi can be considered as the first initiative for creating a national level open access electronic theses and dissertation in 2000. Vidyanidhi (means *Treasure of Knowledge* in Sanskrit) is a national repository of electronic theses and dissertation of Indian research output initiated by the Department of Library and Information Science of University of Mysore as a sponsored project and supported by Department of Scientific and Industrial Research (DSIR), NISSAT, GOI, Microsoft India and Ford Foundation. It aims to develop and build an online repository of doctoral theses and dissertations submitted to Indian Universities by forming a consortium of select Indian universities.
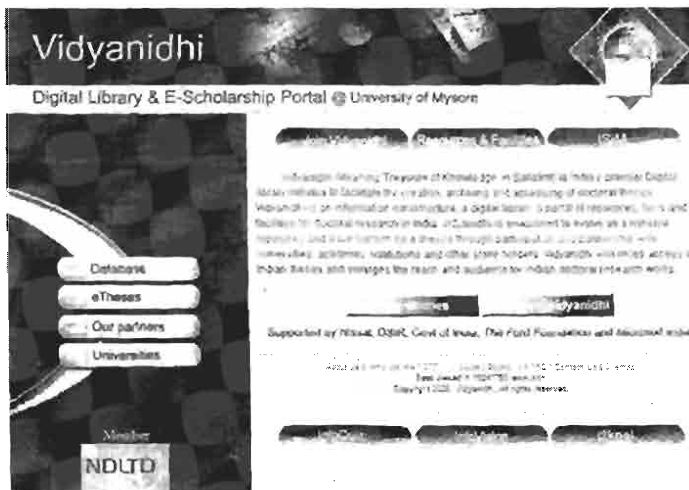
Fig. 2 Home Page of Vidyanidhi

Vidyanidhi comprises national repository of full text ETD and bibliographic database of full text theses from various Indian universities. It has partnership with Universities and academic institutions such as NASSDOC, University of Hyderabad and Jamia Islamia for sourcing ETDs. It hosts about 15000 theses in full text and 85000 bibliographic records of theses. Vidyanidhi is a member of the Networked Digital Library of Theses and Dissertations (NDLTD), a global initiative for hosting electronic theses and dissertations with more than 174 members from different countries of the world.

SHODHGANGA

Shodhganga is a portal for the repository of Indian Electronic Theses and Dissertations submitted to various Indian universities. It is to facilitate Open Access to theses throughout the academic community by INFLIBNET (Information and Library Network) Centre Ahmadabad in 2010 using DSpace, an open source digital repository software developed by MIT (Massachusetts Institute of Technology) and Hewlett-Packard (HP). PhD Theses of various departments and schools of universities can be accessed on this network and 45 Universities signed MoU. As on January 2012 47 Universities are contributing for digitization of old theses as well as by hosting their current theses in the repository. Shodhganga received e-INIDA award for the year 2011 under digital learning category. Universities are required to sign a MoU with the INFLIBNET Centre to participate in the Shodhganga project. Member Universities made it mandatory for research scholars to submit theses in electronic format also as they have to be uploaded to Shodhganga. Scholars of the member Universities can submit their theses or dissertation

online/offline (CD/DVD ROM) in electronic format after completing the student's approval form to add into the repository.

Fig. 3 Home Page of ShodhGanga

MG UNIVERSITY THESES (NityaD'Arch)

The online theses library programme was started in 2008 by the then University Librarian[2]. It was a project with time limit and 1200 dissertations available at the time in the university were digitized and uploaded in the web in 6 months. It uses software customized for this specific project and the package is multilingual which can handle all Indian languages. ETD of Mahatma Gandhi University provides full text open access to all the doctoral dissertations of the university accepted for awarding research degree since 1983.

Fig. 4 Home Page of MGThes

it is the first university in India which received the recognition for its digital resource as one of the best web resource for education and research by INTUTE, a European Consortium of Universities funded by Government of UK's Joint Information Systems Committee (JISC) and the Arts and Humanities Research Council (AHRC). Moreover this is the first ETD archive hosted in an indigenous bibliographic cum full text retrieval software, named Nitya D'Arch and it claims that none of the digital library solutions have the facility for multilingual searching and deep indexing/retrieval of its resources. As majority of ETD initiatives are based on DSpace, which could not address Indian situations earlier, MG University ETD took a unique and different approach which addressed all multilingual and search problems that may occur in different regions of India. ETD home page is inviting, very simple and is exclusive for ETD of the university.

INDIAN INSTITUTE OF SCIENCE BANGALORE (ETD@IISc)

ETD @ IISc is an initiative of Indian Institute of Science, Bangalore and maintained by National Centre for Science Information (NCSI). ETD@IISc is implemented as a production service since February 2005 and facilitates better means to capture, store, process and disseminate the intellectual output of IISc. It holds full text subject collection in Pure and Biological Sciences and Engineering and Technology in electronic form and also contains digitized collection of theses. Online access of IISc theses give improved visibility for IISc research complementing the IISc e-print archive. IISc also provides guidelines for submission, document conversion guidance, theses templates and sets the workflow for online theses submission. Registered users can set up e-mail alerts to notify them of newly added relevant content.
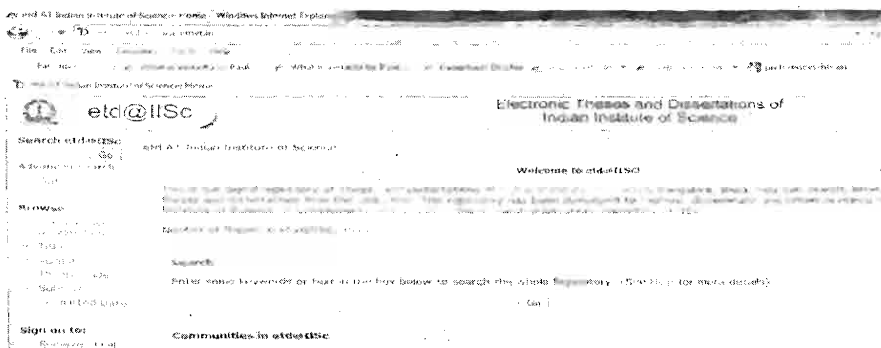

Fig. 5 Home Page of etd@IISc

KRISHIPRABHA –INDIAN AGRICULTURAL DOCTORAL DISSERTATIONS REPOSITORY

KrishiPrabha is a full-text electronic database of Indian Agricultural Doctoral Dissertations submitted by research scholars to the 45 State/Deemed Agricultural Universities during the period from 01 Jan 2000 to 31 Dec 2007. This database, listing about 7500 Doctoral Dissertations with full text of about 6000 Dissertations has been created by Nehru Library. Ch. Charan Singh Haryana Agricultural University, Hissar with financial support from Indian Council of Agricultural Research (ICAR), New Delhi under its National Agricultural Innovation Project

Fig. 6 Home Page of KrishiPrabha

Several ETD initiatives have been completed in State Agricultural Universities (SAUs) under this project. Digital repositories of Indian Agricultural Research Institute (IARI) and Central Marine Fisheries Research Institute (CMFRI) include ETD as one of the component of E-print repository of these institutes. Agricultural science being an integrated science, theories and practices are drawn from basic science. ETDs in the basic science and social science shall act as a catalytic agent for meaningful research in agricultural sciences.

IIT KANPUR

In 2005, IIT Kanpur started their ETD initiative using the digital library software, DSpace. Now it holds full text PhD works of 9289 records in engineering science. It has all the default browsing options of DSpace such as browse by Communities and Collections, by Authors, by Titles, by Issue Date, by New Collection and Recent Submission and by Subjects. Apart from these default options IITK customized the browse option and upgraded the browsing options with Supervisor/s and Citations and also with the search option Cross collection Search. ETD of IITK also facilitates to find out the Strength/Count of each Browsing element, number of items guided by a person, item created by an author, items related to a particular subject and the number of citations for a particular item. IITK redesigned the software to provide the additional options, i.e. Roll No., Degree and Department in the Registration form. A link to 'cited thesis/theses' from the existing IITK theses collection, as mentioned by author in 'References' showing citation impact of the theses by the IITK scholars, has been provided as an additional feature. Feedback form has the features like incorporating additional personal details of scholar, i.e. email-id, designation, degree, department, PF No./Roll No. etc and a set of features related to the facilities, and/or description parameters concerning content/metadata and workflow etc to solicit ratings on defined parameters from the scholars submitting theses to the library.

CSIR Explorations – e-theses e-database

Council of Scientific and Industrial Research (CSIR) Explorations is a digital library of electronic dissertations, theses and research reports of the fellowships supported by CSIR. Recently it is initiated under fellowship programme that at the time of submission of PhD thesis to an Indian University, the CSIR Fellow submits an electronic copy on CD-ROM to CSIR's unit for Research and Development of Information Products (URDIP) along with a descriptive set of metadata for inclusion in the CSIR Explorations. The e-theses database has 659 theses and serves as a valuable source of information about doctoral theses submitted to Indian universities. Currently access is restricted only to metadata level and proposed to scale up with full text of theses.

National Institute of Oceanography (NIO), Goa, the constituent laboratory of CSIR, provides comprehensive ETD on the subject of oceanography. National Chemical Laboratory, (CSIR) Pune ETD@NCL is an institutional initiative in the subject area of Chemistry and Biological sciences to share their PhD resources with all other CSIR labs.

Dyuthi@CUSAT , the repository of the Cochin University of Science and Technology, ETD@ Pondicherry University, Digital Library of the University of Madras, IIT Delhi, IIT Kharagpur, IIAP, Bangalore are the new ETD initiatives in India.

Bibliographic control of theses and dissertations is also now seems possible with ETDs. **Delhi Library Network (DELNET)** hosts bibliographic records of PhD theses submitted in various universities in India consist of nearly 5000 bibliographic records.

Association of Indian Universities (AIU) publishes list of theses awarded in various universities in its weekly publication 'University News'. National Social Science Documentation Centre (NASSDOC), wing of ICSSR, hosts a library with PhD theses for providing bibliographic data to the user community. NASSDOC systematically acquires PhD theses in social sciences submitted to the Indian universities. Currently, the NASSDOC has 4924 PhD theses in social sciences in its collection.

INFLIBNET's National Online Union Catalogue of Doctoral Theses covers the bibliographic Metadata of Doctoral Theses submitted to more than 130 Universities/ Institutes in India including Agricultural Universities. Acharya NG Ranga Agricultural University (260), Ch Charan Singh Haryana Agricultural University (1049), Dr. YS Parmar University of Horticulture and Forestry (407), GB Pant University of Agriculture & Technology (621), IARI (1997), Punjab Agricultural University (1746), UAS Bangalore (345) etc are some of the agricultural institutes linked to this Union List (figure in brackets indicate the number of records updated as on 27 Dec 2011). It has over 1,53,206 unique records from all subject areas. This data is contributed by participating Universities under the INFLIBNET programme. Cross Archive Search Service for Indian Repositories (CASSIR) as a part of the project "Development of OAI-Based Institutional Research Repository Services in India" sponsored by Department of Scientific and Industrial Research and being carried out at NCSI and IISc, Bangalore. The service will harvest metadata as per the OAI-PMH protocol from the registered OA repositories in India. It also provides web-based search/browse functionality over the harvested metadata. These are some important services towards bibliographic control of PhD theses in India.

Table 1 Comparative Features of National ETD Initiatives

Characteristics	ETDs				
PROJECT NAME	VIDYANI DHI	SHODHGANGA	MGUTHESES	ETD@IISC	KRISHI PRABHA
Host Organization	University of Mysore	INFLIBNET	MG University, Kerala	IISc Bangalore	Nehru Library, Ch.CSHAU. Hissar
URL	http://www.vidyanidhi.org.in	http://shodhganga.inflibnet.ac.in/	http://www.mgutheses.org	http://etd.ncsi.iisc.ernet.in	http://202.141.47.8-8080/equesttheisis/
Year started	2000	2000	2008	2004	2008
Software Used	Dspace	DSpace	Nitya D'Arch	DSpace	eQuest
No of Full text	5000	NA	1300	1552	6000

Characteristics	ETDs				
PROJECT NAME	VIDYANI DHI	SHODHGANGA	MGUTHESES	ETD@IISC	KRISHI PRABHA
Subject Covered	Pure&Applied Sc..E&T, Social Behavioral Sc, Arts& Humanities Gen. Studies	Multidisciplinary	Multidisciplinary	Applied Science, Pure Science and Engineering	Agriculture,Agriculture Engineering & Technology and Basic Sciences
Membership in other ETDs	NDLTD	NA	NA	INDEST	NA
Support/collaboration/Partnership	NISSAT,D SIR, Ford Foundation & Microsoft	UGC	NA	NCSI	ICAR
No of Member Universities	155	51State Universities	NA	NA	43
Submission Policy	Online	Online/Offline CD/DVD ROM	CD ROM	Online	CD ROM
Recommended File Format	PDF TIFF	PDF/Open Office doc., MS Office, Tex, LaTex, etc	PDF	PDF	PDF
Theses Coverage	1992	1905	1983	NA	2000
Search Facility	Simple Advanced Field Specific Subject Author Directory	Simple Advanced	Simple Advanced	Simple Advanced	Keyword Basic Advanced

Characteristics	ETDs				
PROJECT NAME	VIDYANIDHI	SHODHGANGA	MGUTHESES	ETD@IISC	KRISHI PRABHA
Language Searches	English, Hindi & Kannada	English	English, Malayalam, Tamil, Hindi & Kannada	English	English
Metadata Standard	ETD-MS v 1.00	OAI-PMH	OAI-PMH	OAI-PMH V 2.0 and ETD-MS V 1.01	-
Access for fulltext	Internet	Internet	Internet	ID/PW	Intranet
No of Communities/Department	NA	NA	NA	7	45
Student Approval Form	Yes	Yes	No	No	No
Training Program for students	Yes	Yes	Yes	No	No
National committee	No	Yes	No	No	No
Search Options	Simple& Advanced	Basic& Advanced	Simple& Advanced	Simple& Advanced	Keyword, Basic & Advanced
Simple Search Options	Keyword & Text	Author, Guide, Keyword & Text	Contents, Title, Scholars, Guides & Accession No	Keyword & Text	Title, Author, Guide, Place, Year
Advance Search Options	Field Specific, Author, Supervisor, Subject & University	Keyword, Researcher/ GuideTitle, Subject, Abstract, Series, Sponsor, Identifier, Language (ISO)	Title, Content, Scholar, Guide	Author, Title, Subject, Abstract, Date, Series, Sponsor, Identifier, Language (ISO)	University/ Institute, Category/Faculty, Sub-Category/ Dept., Year Range,Title, Author,, Guide, Keyword
Boolean	ALL, EXACT, ATLEAST, WITHOUT	AND, OR, NOT	AND,OR, NOT	AND,OR, NOT	LIKE, EXACT, AND, OR
Usage Statistics	No	No	No	Yes	No
Cross Collection Search	No	No	No	No	Yes

Characteristics PROJECT NAME	ETDs VIDYAN IDHI	SHODHGANGA	MGUTHESES	ETD@IISC	KRISHI PRABHA
Links to Homepage	Yes	Yes	Yes	Yes	Yes
Links to other ETDs	No	Yes	No	Yes	No
Email/RSS Feed	No	Yes	No	Yes	No
Remote Submission	No	Yes	No	Yes	No
Copyright Information	No	No	No	No	No
Feedback form	Yes	Yes	No	Yes	No
User Guide/Manual/ Help	No	Yes	Yes	Yes	Yes
Theses Template	Yes	Yes	No	Yes	No
Guest Book	No	Yes	No	No	No

FINDINGS

Users increasingly expect instant access to information resources. ICT enables it. Accordingly, library professionals are trying to make information available to the users in electronic formats to promote education, research and the scholarly publishing. ETD initiatives are being promoted and a number of initiatives are coming up in India in different subject fields/institutions. However, no ETD initiative in India is comprehensive and exhaustive. It is found that the digital archives of these institutions are adapted and models are made according to their own requirement and not by meeting the objectives of ETDs. Analysis shows that institutions prefer to have open source software and DSpace is the widely used software. MG University ETD is found to be outstanding with its powerful search capability, multi lingual support, in-depth information retrieval, open access and very simple home page. MG University ETD is the only digital archives of PhD dissertations of India using a package developed in India.

TRANSPARENCY IN RESEARCH

ETD initiatives promote transparency in research by strongly encouraging authors to include full details in order to facilitate replication studies. Transparency in research aims to make the process of research amply visible to the readers. Peer-review process in research provides scrutiny of research and transparency in research provides readers full access to the data, methodology tools etc used in the study. ETDs make research an open, understandable, and replicable process. Thus, it acts as a public scrutiny for public funds involved in the research.

CONCLUSION

Submission of Theses and Dissertations in electronic format should be made mandatory for both the scholars and the universities. There should be training/orientation programs to make the scholars, faculties and management aware of the importance of ETDs. Creating ETDs for namesake will be a threat for the library systems. Like MG University all universities should establish an official Open Access archive PhD dissertations and ensure that dissertations are online within a specified period after its acceptance by the university. It may also be made compulsory to be in compliant with the national ETD by formulating standards and formats. Such an effort shall enable comprehensive treatment of ETDs and work as a single platform for right access of ETDs in a right manner. A national portal for ETD shall ensure access to authentic sources for research information.

Peter Suber and others commenting on the ETDs of India stated that every university should be capable of hosting an OA archive of its doctoral dissertation and newly accepted should be added to it within a week of its acceptance. Central agency can then make these individual repositories appear as one seamless digital library of dissertations by gathering all the metadata into a central search engine. When a potentially relevant document is found, the user will be redirected to the concerned institutional repository. This approach is supported by the Open Archives Initiative (OAI), which has developed a protocol for exchanging such metadata. Using the OAI's protocol for Metadata Harvesting (OAI-PMH), individual sites can make their metadata accessible to providers or discovery services, while maintaining complete control over own resources. Such archives will be accessible to public all the hours. This only can make the research accessible to the society, bring them into application and thereby prove its worth. This will put the work of a university into test and will ultimately ensure the quality and relevance of research.

As per the data collected for this study VidyaNidhi covers less than 3 percent of the PhD dissertations produced in India till now. INFLIBNET's Shodganga also covered nothing more than that. The only official repository of any university existing. MGU theses has covered only 70 percent of its dissertation completed in the first phase. Even though the university committed on uploading dissertations within 14 days of acceptance, not even a single dissertation has been uploaded during the last one year. Of the 450 universities in India, 99 percent has not come forward with an OA archive of their dissertations. Those who have launched such systems, at times turn back, for there will be heavy resistance from the scholars who have plagiarized, for it will bring their copying into public visibility and their Degree may get cancelled if some one challenges the matter. Only if UGC and organizations such as ICAR come with a strong legislation to make all these Open, and accessible and stops research funding to those who are not prepared to do so, our universities will not make their research transparent. It is not because of lack of fund or technology but the resistance from academic community, not sincere to research, and preventing transparency in research.

REFERENCES

1. Vijayakumar, J.K and Murthy, T.A.V (2011). Need for digital library for Indian theses and dissertations. CALIBER-2011, Goa University.

2. R. Mishra, S. K. Vijayanand, Noufal P. P. and Gaurav Shukla (2011). Development of ETD Repository at IITK Library using DSpace.

3. Shalini R. Urs. N.S Harinarayana and Mallinath Kumar, A Multilingual Multi-script Database of Indian Theses : Implementation of Unicode at Vidyanidhi.

4. http://curric.dlib.vt.edu/wiki/index.php?title=ETD_Guide:Introduction_-_What_are_ETDs

5. Ibid

6. Ibid

7. Sheeja, N.K. and Surendran, C. (2011) The Development and promotion of ETDs in Kerala, International CALIBER-2011, Goa University.

8. UGC (Submission of Metadata and Full-text of Doctoral Theses in Electronic Format) Regulations, 2005. http:www.ugc.ac.in

9. http://shodhgangotri.inflibnet.ac.in/

10. Op Cit. 5

11. Raman Nair, R. (2010). Mahatma Gandhi University Open Access Digital Library of PhD Theses: User Guide. Kottayam, Centre for Digital Archiving, MGU. http://eprints.rclis.org/handle/10760/15189

12. P. Jobish, Hemanta Kumar Biswal, Filbert Minj, T.B Rajashekar and S. Venkadesan, etd@IISc. A DSpace- based ETD-MS and OAI Compliant Theses Repository Service of Indian Institute of Science

13. http://etd.ncsi.iisc.ernet.in

14. Hirwade, M.A. (2011). Digitization of theses and dissertations: Status Quo India. Proceedings of the 14th International Symposium on Electronic Theses and Dissertations, Cape Town, South Africa.

15. OpCit. 6

16. http://drs.nio.org/drs/

17. http://indcat.inflibnet.ac.in/indcat/thesis.jsp

18. Suber, Peter and Raman Nair, R. and Hussain, K. H. (2009).Open Access to public funded research: a discussion in the context of Mahatma Gandhi University digital archives of doctoral dissertations. 2009. In CALIBER 2009, Pondicherry (India).