Importance of doctoral theses and its access:

a literature analysis

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Abstract

Academic research is quantitatively and qualitatively considered as the foundation for furthering the future investigation in any field. At the same time, the results of doctoral research is not disseminated in public domain due to various reasons of policies such as copy right, IPR, time lag, publication procedures etc. Information Communication Technologies playing a major role in the drastic change of academic scholarship during the last decade, especially in creation, access and dissemination of information. Web publishing makes the Universities to alter and strengthen the process of creation and communication of academic research through reconsidering the ways and practices in scholarly publishing and archiving practices. We are fortunate that Universities and policy makers already started taking advantages of web publishing in this important area of scholarly communication.

Doctoral Research in Universities

In a global scenario, doctoral research programs are considered to be essential to the development of Higher Education, where Universities are the key players in carrying the major responsibility for molding good researchers at different stages in their career. In fact Universities are substantially investing in conducting of research, which leads to degrees like Ph Ds. It is also found that the number of students undertaking and completing higher degree theses has been growing rapidly, all over the world in recent years, and a country wise statistics of some potential countries are provided here. According to *National Science Foundation (NSF)* survey, during the 10-year interval between 1988 and 1998 the U.S. universities collectively awarded almost 400,000 doctorates, as compared to a total of 316,413 for the preceding 10-year period. They have awarded more than one million doctorates (1,174,442) over the last 40 years, of which 33.8 percent were granted during 1988-98 (*NSF, 1998).* The latest survey from *NSF* shows that 423 universities in the United States that conferred research degrees awarded 40,710 doctorates during the 2002-2003 academic year, that shows an increase of 1.9 percent from the 39,964 doctorates awarded in 2002, and a 4.5 percent decline from the all-time high of 42,645 in 1998 (*NSF, 2003).*

Between 1996 and 2000 there was a 27% increase in the number of doctorates awarded by UK institutions, which stood at 13,670 at the end of 2000 (*Beckett, 2002). Genoni and Cowan* estimated that the 19,254 enrolments in the year 1991 for higher degree by research programs in Australian universities rose to 37,374 by 2000. They also accounted that during the same period higher degree by research completions rose from 2491 to 5325. That means a total of 26,620 PhD theses were completed during the decade from 1991 to 2000 in Australia (*Genoni and Cowan, 2002). Lee, Kim and Hwang* say that in Korea approximately 3,500 doctoral degrees are awarded every year comprising all Universities (*Lee, Kim and Hwang, 2001).* Indian Higher Education system has around 320 Universities and other institutions of national importance offering Doctoral Programs (*UGC Website, 2005).* University Grants Commission, the apex body of Indian Higher Education provides the statistics of Doctorates awarded in India during 2000-01 as 11,534 and during 2001-02 as 11,899. (*UGC Website, 2005).* Again another statistics based on Ph D Theses Database received at Information and Library Network (INFLIBNET) shows that nearly 8000-10000 Ph Ds are awarding in India, every year (*Vijayakumar and Murthy, 2001).*

Importance of Doctoral Theses

The term PhD is short form for Doctor of Philosophy (Philosophiae Doctor), which is frequently referred to as a Doctorate. As a PhD scholar, one is expected to pursue structured, supervised research into one of the many related fields in which the Faculty has expertise. At the end of this period they are expected to write an extended thesis, demonstrating evidence of their capacity to pursue scholarly research. The results of this research should make an original contribution to knowledge and be of a standard appropriate for publication. Before pursuing for a Ph D one need to be sure that he/she has a keen personal interest in the topic to be researched - and an interest in the process of research along with a strong academic background with a good first degree (*Lancaster University Management School, 2005).*

Thomas, Nelson and Magill pointed out that although the dissertation is intended to be a vehicle for the publication of new research, its traditional five or six chapter format renders it unsuitable for publication without substantial revision to make it conform to the genre of the journal article. Due to the extensive revision, 1/3-1/2 of all dissertations remains unpublished (*Thomas, Nelson and Magill, 1986).*

It is a fact that a thesis or dissertation must be "an original contribution to scholarship". Another purpose of a thesis is to be the basis of a book that, when published, will become part of the scholar's documentation in his professional career and scholarship. There is no doubt about that Doctoral theses are contribution to the world of knowledge. Further the results, conclusions and recommendations invariably have impact towards the economical and social up-liftment. In addition, the thought content also paves way to new vistas of investigation and encourage inter-disciplinary approach, which will strengthen the fabric of life styles in the society. Thus this is an ongoing process in the higher education scenario.

Dissemination of Doctoral Research

Isaac and Stephen identified that its access have traditionally been quite limited as to what they can say and do, and even more restricted with regard to when, where, how and to whom they are accessible. They pointed out that these limitations are established and maintained in part, through policies set by committees, departments, graduate schools and libraries, which reflect the regulatory bodies' limited conceptualization of what the dissertation is and should be. They established that accessibility by the scholarly community to Dissertations has not historically been a priority, where as typically, only two copies of a print dissertation exist and are available without a fee—the archival copy, which remains a permanent part of the university library's collection, and the circulating copy, which may be available through inter-library loan in few countries (*Isaac and Stephen, 1992).*

Brace argued that the importance of published theses as a primary source for the scholars who are pursuing research at present varies by discipline. Humanities scholars regularly search through dissertation abstracts for finding out dissertations relevant to their topic. There are many disciplines in which the dissertation is not used often as a primary source where it will show up as a book or journal article. For these disciplines, the dissertation has another function that of a kind of proto-document that will be turned into a book or scaled down to articles in peer-reviewed journals. This practice reveals that there is an assumption that if the information is "good enough" it will show up somewhere else in a more "respectable" form. However we notice that the fact is about half of dissertations have never got published in another form. Could it really be the case that all of this information is irrelevant or unimportant? (*Brace, 2002).*

Urs identified the lacunas in publication, control and access theses information in India, where most unpublished theses are hard to get hold of, as they are filed only in the university library where the student has worked. The Indian doctoral literature is beset with many problems like Lack of Systematic acquisition, Lack of Access, Uncertain publication practice, Enormous Growth in the number of theses etc. Printed theses remain locked in the libraries and are consigned to be frozen assets. (*Urs, 1999).*

All such observations are relevant while dealing with the Doctoral theses, with considerable educational, social and economic value to the community at large, which form a rich information source of original research data enveloping the entire world of

subjects. Even a part of this research information is disseminated through journal articles or books, much of it unpublished or published in an abbreviated form. Now a days, the decrease in publication of academic monographs and the growing number of theses being awarded, where the full dissemination of this valuable information has become insufficient. Even the Universities and their libraries collecting, recording and providing access to printed copies of theses, the access to it suffers from the absence of a single, easily accessible bibliographic source which provides comprehensive coverage of completed theses, regional, national and international level.

Present Scenario of Ph D Theses Collection

Isaac and Quinlan identified the limitations of access and publications of doctoral theses as traditional because of the policies of regulatory bodies *(Isaac and Quinlan, 1992)*. *Edminster* supports this finding in the doctoral research *(Edminster, 2002)*. *Mathews and Wiggins* opine that graduate schools and university libraries take great pains to ensure that theses documents are prepared according to accepted standards and are preserved for future scholars to examine, because of its valuable information content *(Mathews and Wiggins, 2001)*.

Ives and McLean describe the problem of keeping only paper copies of dissertations, without reliable back-up in different medias to avoid its loss due to theft, fire and decay and to save valuable shelf space. They also give the example of USA where, Pro Quest is the designated "national repository" by the Library of Congress, who deems the Pro Quest dissertations as a remotely held collection. The Library was interested in having their retrospective titles placed in this collection since microfilming and digitizing an institution's dissertations and master's theses are important ways to showcase its research and academic history, provide access for students and researchers from a single entry point and enhance the institution's standing in the international academic arena *(Ives and McLean, 2004)*.

In NDLTD website, *Fox and McMillan* admit that due to the services provided by UMI access to dissertations has increased in recent decades at International level. With a database containing about 1.5 million abstracts, UMI microform archive allows printing on demand of microform or paper copies. But they point out that even though this service is useful, the high cost of copies and other concerns lead to relatively few purchases, almost never more than 7 per year for any one title. Their study of circulation data from the Virginia Tech library indicates that the average number of times a thesis or dissertation is checked out per year is small (2 or 3, respectively, during the first 6 years after completion. They also agree that theses may be locked up --- the only method of restricting access --- but it is important only when there are issues of security or proprietary information or pending patents *(Fox and McMillan, 1997)*. *Young* informs the latest service of U M I from 1997 by making new dissertations available in an electronic form, which can be ordered, for about $20, over the Internet *(Young, 1998)*.

Weisser and Walker point out that traditional method of archiving and storing theses and dissertations are inefficient and unwieldy. They also point out that print forms have limitations: they cannot include multimedia elements, they cannot include interactive elements, and accessing them through interlibrary loans or repositories such as UMI can be time consuming, expensive, and limiting. They for see the changes in electronic publishing of theses by changing how scholarship was produced and disseminated, where technological innovations are having an impact on our conceptions of reading, writing, research, and publication *(Weisser and Walker, 1997)*.

Friend outlines the scenario from U K and identifies that even when a good indexing tool to theses exists in a particular country, such as the *Aslib Index to Theses* in the UK, there is a time-lag between the completion of the thesis and its appearance in the indexing publication. He says that if universities were commercial organisations they would want a potential market to know quickly about their achievements, but so often within universities the completion of the thesis is seen as sufficient in itself, without any need to make the results of the research available to anybody else *(Friend, 1998)*. It is true that the best research is often published soon after the completion of the thesis in commercial publications like academic journals, but what happens to the thousands of theses that are completed and are not published? The answer is that they languish on library shelves, taking up valuable space and are rarely consulted. UK

Theses Online Group conducted a survey in UK Universities and identified that Theses are used in libraries rather than in departments and found that consulting theses is difficult because of the physical constraint of consulting in a particular place, a library building *(Roberts, 1997)*.

From Australia, *Bate* reports the lack of easy access and lack of usage of theses literature due to a number of factors: lack of knowledge that the thesis exists; lack of information about the contents of the thesis; lack of ready availability. She advocates that electronic theses are easily located as well as easily and readily accessible if delivered over the web *(Bate, 1999)*. *Cowan and Genoni* admit that it is an issue of considerable importance that theses are adequately recorded in easily accessible and searchable bibliographic sources. They also admit that despite the work done by libraries in collecting and recording theses, access to this material currently suffers from the absence of a single, easily accessible bibliographic source providing comprehensive coverage of completed theses *(Genoni and Cowan, 2002)*.

Things are not different in other parts of the world. *Ubogu* says that the unavailability of information on T&Ds in most African countries has been a source of challenge to many librarians. There have been various efforts at some form of bibliographic control of T&Ds produced in some countries through the compilation of bibliographies or abstracts of theses and dissertations, some at national levels and others at institutional level. These compilations rarely leave the borders of the institutions/countries where they were compiled *(Ubogu, 2001)*. DATD (Database of African Theses and Dissertations) Project website says that access to theses literature is not easy, even within the institutions where they are submitted. In Africa particularly, they are an under-utilised information resource, because the nature their production in very limited and the only copy available for public access is usually in print and can only be consulted physically in a university library *(DATD Website, 2005)*. In China also even though Theses and dissertations have long been regarded as the basis to researchers, most of them languish in obscurity in university libraries and archives *(Jin, 2004)*.

Bibliographic Control of Doctoral Theses

Since the Doctoral Theses constitute an important part of scholarly information, there were initiatives in several countries and at international level to have a sufficient mechanism for its bibliographic control, through printed indexes or online databases. *Dissertation Abstracts International*, *Dissertation Abstracts On disc* and *ProQuest Digital Dissertations* (all are from ProQuest / UMI), *Index to Theses by ASLIB*, *The BRITS Index* from British Library, *American Doctoral Dissertations and Comprehensive Dissertation Index* from USA, *Union List of Higher Degree Theses in Australian University Libraries*, *TESEO Database* and *Catalog of Spanish Theses* from Spanish Universities, *TESIUNAM* from Mexico, *SITE-Theses System* of Brazil, *DATD* of African Universities and *SUDOC* of French Academic libraries, *TESI ONLINE* from Italy, *Die Deutsche Bibliothek Online Catalogue* from Germany, *DissertationDataBank* from Austria, *TESIS EUROPEAS SOBRE AMERICA LATINA* from Latin America, *Catalogue of Norwegian Libraries* from Norway are the few examples to cite. There are disciple wise Indexes like *Doctoral Dissertations in Musicology* (*DDM-Online*), which is an international database of bibliographic records for completed dissertations and new dissertation topics in the fields of musicology, music theory, and ethnomusicology, as well as in related musical, scientific, and humanistic disciplines *(DDM-Online, 2005)*.

In India, Association of Indian Universities started publishing of Doctoral Bibliographies in all subjects and Theses of the Month column through its weekly publication University News *(AIU Website, 2005)*. In 1994, INFLIBNET hosted a regularly updated free online union database of Ph D theses submitted to Indian universities. At present it is freely available for searching at INFLIBNET website and contains around 1,52,000 of unique bibliographical records covering all subjects and all universities. Being the data supplied by the Universities themselves, it is considered as the only authoritative online-tool available to find-out the research out put of Indian Universities. *(Vijayakumar, Hosamani and Murthy)*. Earlier with the support of NISSAT and later from Ford Foundation, University of Mysore initiated a project called "Vidyanithi" to host individual full-text doctoral theses from various universities who are willing to become a member of this venture *(Vidyanidhi Website, 2005)*. Apart from these initiatives, there are lots of publications and journals features Doctorate awardings in

India. The major role played by INFLIBNET in Bibliographic Control of Indian Doctoral Theses is narrated in Annexure III at page 137**.** National Social Science Documentation Centre (NASSDOC), ICSSR has a library of Ph.D Theses in social sciences (approved by the Indian universities) form a part of its core collection. As a national institution, NASSDOC aims to build a truly representative collection of Ph.D. theses in each of the areas that make up the social sciences *(NASSDOC Website, 2005)*.

From TDs to ETDs

The emergence of electronic publishing and digital technologies changed the campuses worldwide, and it is more visible in digital publishing of institutional scholarships such as theses. Lots of projects started at Institutional, Regional and National level along with ETD Consortia during recent few years. A few and important initiatives selected from different regions are identified here.

The concept of electronic theses and dissertations (ETDs) was first openly discussed at a 1987 meeting in Ann Arbor arranged by UMI, and attended by representatives of Virginia Tech, University of Michigan, SoftQuad, and Arbor Text. After lots of workshops and meetings, the Networked Digital Library of Theses and Dissertation (NDLTD), which was originally called the National Digital Library of Theses and Dissertations, was established at Virginia Tech in 1996 with the initial funding of Southeastern Universities Research Association (SURA). Its mission was to coordinate ETD-related activities in terms of diffusion of the ETD-DL and support for adoption and implementation of the innovation. NDLTD is a voluntary international federation of universities and other institutions who have an ETD-DL or are interested in learning more about ETD-DLs. It has 174 members as on March 2005 worldwide, which includes 30 effective members who contribute content and 154 Universities from various countries *(NDLTD Website, 2005)*.

The formation regional consortium like the Appalachian Regional ETD Consortium (AR-ETD) and Ohio Link are also underway in various countries. In 1999, the Ohio graduate deans' group in USA, the Regents Advisory Committee on Graduate Study (RACGS), asked Ohio LINK to create a single, commonly shared ETD site to represent the work of Ohio's scholars. The ETD Center launched in 2001, as a joint project of OhioLINK and the Regents Advisory Committee on Graduate Study (*OhioLink ETD Website, 2005)*. Issue number 7 of Transforming Libraries, published by Association of Research Libraries (ARL) summarizing the current state of electronic theses and dissertations (ETDs) by reporting on efforts in 13 institutions in USA and Canada, including NDLTD and UMI. *(Transforming Libraries, Issue 7, 2001*]. UMI's ProQuest Digital Dissertations™ (PQDD), a key part of the ProQuest® line of research databases since 1997, has renamed to ProQuest Dissertations & Theses (PQDT) and the project will be functional by the year 2005. The system developed by Berkeley Press supports the users to submit their Theses. *(ProQuest Website, 2005)*.

UNESCO is also playing an important role in promoting ETDs at international level and developed an ETD Guide, as a resource for graduate students who are writing theses or dissertations, for graduate faculty who want to mentor ETD authors, for graduate deans who want to initiate ETD programs, and for IT administrators at universities. *(UNESCO ETD Guide Website, 2004*]. UNESCO also established an ETD Clearing House in collaboration with Humboldt University, Germany *(UNESCO ETD Clearing House Website, 2005)*.

The Brazilian Digital Library (BDL), as a Brazilian gateway try to integrate electronic full-text journals, electronic full-text proceedings, Internet interesting resources for science and technology, various university OPACs, some ETD data banks, the Brazilian National Library OPAC and various electronic archives. The first attempt to integrate Brazilian theses and dissertations in a unified database was the SITE-Theses System, coordinated by Institute of Brazil for Information Communication Technologies (IBICT) in 1996 and today integrates more than 140 000 records of theses and dissertations from 15 universities. *(Ciência da Informação Journal, 2001)*. *Southwick and Pavani* update us about this project that to date, approximately 50 universities have received software and training for implementing an ETD system. With the support of UNESCO, the project has also reached universities in other countries from Argentina, Colombia

and Uruguay, who started pilot-projects using the technology supplied by IBICT *(Southwick and Pavani, 2004)*.

In 1997, Canada started "Theses Canada Portal", as a follower of National Library of Canada's Canadian Theses on Microfiche Service launched in 1965. This aims to acquire and preserve a comprehensive collection of Canadian theses at Libraries and Archives of Canada and to provide free access to this valuable research within the country and around the world, through partnership with the many Canadian universities *(Theses Canada Website, 2005)*. Apart from this various individual Universities also started their ETD Programmes and the universities already involved in ETD projects have strengthened their initiatives, and serve as a pilot in the national process *(Bonnelly, 2003)*. French Universities are also initiated several ETD Programmes and a *Multi Disciplinary Theses Server* is hosted with limited content and access.

MacColl reports that the ETD movement has not yet taken root in the UK up to 2000. Theses *Alive* is one of three projects in electronic theses funded by JISC. The others are *DAEDALUS*, led by Glasgow, and *E-theses in the UK*, led by the Robert Gordon University. *Theses Alive* will work with both of these, and will share an advisory structure with the latter. *(MacColl, 2002)*. National Library of Portugal initiated a project in 1999 and re-started in 2001 called DiTeD which is open to 14 public and 10 private universities existing in Portugal, as also to the several hundreds of polytechnic schools and similar *(Borbinha and others, 2004)*.

The DiVA –project (Academic Archive On-line) was initiated at Uppsala University in Sweden and has evolved from being a project at one university to a joint project with partners from seven universities in three different countries (Denmark, Norway and Sweden). *Moe and Muller* undeline that taking part in a joint project offers several advantages both financially and when it comes to implementation and further development and it has already produced a system for submitting, retrieving and archiving ETDs and reports *(Moe and Muller, 2004)*. The Online Doctoral Thesis Server (TDX) is a digital collection of doctoral theses presented at some Spanish universities. It allows for remote consultation of the complete text of theses over the Internet, additionally allowing the user to construct searches by author, title, knowledge area, university of publication, etc. This service, coordinated by the Consortium of University Libraries of Catalonia (CBUC) and the Supercomputing Centre of Catalonia (CESCA), and sponsored by the Department of Universities, Research and the Information Society of the Generalitat (government) of Catalonia *(TDX Site, 2005)*.

In Africa, Rhodes University mounted its digital thesis on the World Wide Web in 1998 and became the first institution in Africa to do so, and made it mandatory for students to submit digital files of their theses and dissertations. *Ubogu* foreseen that the joining of universities in the Southern African region would lead to the building of a digital library of theses and dissertations in the region. In addition, the South East Academic Libraries (SEALS), a library consortium of tertiary institutions in the Eastern Province of South Africa, is considering an ETD programme *(Ubogu, 2001)*. University of Namibia developed ETD using Green Stone software for the entire country *(Namibian Theses Website, 2005)*.

In Egypt, all theses and dissertations are available on the Ain Shams University Network (ASUNET), including theses and dissertations of Egyptians who graduate from any other international universities are also recorded. The database entries contain bibliographical data as well as the abstract on each thesis. The University Information Network (UIN), which is headquartered at Ain Shams University in Cairo, serves as a national clearing house for theses and dissertations completed in Egypt, which carries out a set of activities very similar to those of UMI *(ASUNET Website)*. In Venezuela, a group of universities and research institutions created the National Network of Digital Libraries for Electronic Theses in October 2003 and Venezuelan Association of Public and Academic Libraries (ANABISAI) is the leading agency *(Rosales and Bauste, 2004)*.

Australian Digital Theses (ADT) program under the auspices of Council of Australian University Librarians (CAUL) is designed to improve access to, and enhance transfer of, the research information contained in theses by providing a full text version available from the desktop via the web. 26 Australian Universities are part of this programme *(ADT Website)*. *Genoni and Cowan* report that the program is based on a distributed database, with member institutions undertaking to load deposited theses

onto local servers in PDF format, and load the metadata which provides bibliographic access to the theses on a server at the University of New South Wales *(Genoni and Cowan, 2002)*. Apart from various Universities in Germany (See Annexure IV at Page 142) Humboldt University at Berlin started Dissertation Online project and later on it is undertaken by the Co-ordination Agency at the German National Library (Die Deutsche Bibliothek) since September 18, 2002 *(Dissertation Online Website)*.

Chinese universities have realized the importance of ETDs, and some local ETD programs have been carried out. Later on China Networked Digital Library of Theses and Dissertations (CNDLTD) project has been carried out by CALIS (China Academic Library and Information System) to improve the accessibility of local ETD collections. CALIS is a federation of academic libraries in China, and has more than 152 members and seven local centers *(Jin, 2004)*. Korea Institute of Science and Technology Information (KISTI) has developed a digital library for Electronic Theses and Dissertations (ETDs) as a web-based multilingual full-text system, since 1998 known as KIST ETD *(Zhang and and Lee, 2001)*.

Indian academic institutions are also started ETD projects in recent years. *Indian Institute of Technology* in Mumbai, Chennai and Kharagpur have their ETD collections made available on campus network. *Indian Institute of Science,* Bangalore and *National Chemical Laboratory,* Pune have recently established ETD project using DSpace software. *Vidyanidhi* Initiative at Mysore University tries to evolve as a national level repository of Indian Doctoral Theses. Few Indian Universities already made policies and rule for collecting e-format of PhD theses from their students.

It is a fact that, the ever rapidly developing networking and digital library technologies are the reasons for ETDs (Electronic Theses and Dissertations) gaining momentum on university campuses worldwide. ETDs allow more adventurous students to express their research results in creative and flexible ways that would not be possible if they were limited to paper based output. 'Born digital' theses may include audio and visual material and may not even be in a traditional linear format. There is some variation between countries in the use of terminology e.g. some universities refer to doctoral theses and some to doctoral dissertations. The term ETD accommodates these differences and is becoming used internationally. Digital libraries of electronic theses and dissertations (ETDs) offer an alternative to the waste of valuable academic scholarship in the form of Theses and Dissertations (TDs) and offer researchers and University Libraries opportunities to explore the possibilities of electronic publishing trend in academic sector.

CONCLUSION

In the twenty first century the Society is becoming more information conscious and millions of life is embedded with quality-based data and information to compete with each other. Academics play a very significant role in molding and creating new generation of scholars, researchers and better situations to meet these challenges at national and international level. Undoubtedly, higher education system contributes to the majority of this component. The most important ingredient of this happens to be that of Doctoral theses, which are the intellectual properties of the individuals in a particular domain, or subject, or a faculty, thus directly or indirectly contributing to the growth and development of individual and society. Unfortunately, there is no uniform standard followed even at twenty first century, where the information and communication technology is dominating and paving the way for easy and multi-user access with exhaustive information through computer based networks in an Open Access mode. However, the sporadic efforts are made in some parts of the world like; USA, UK, Germany, Australia and few other advanced countries in addressing the issues relating to making full text of this valuable information source to reach its intellectual component across the world and save time and duplication of the efforts for enriching multi-disciplinary projects.

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