Access to Electronic Theses and Dissertations: Literature Review with Global Perspective

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Abstract

This paper critically examines the literature published in the first two decades of the 21st century on access to electronic theses and dissertations and presented in chronological order. The study is conducted with the primary objective of assessing the current scenario of ETD projects worldwide. The inferences drawn from the literature review reveal that the current status of ETD projects are not satisfactory, as most of these projects do not have a proper budget allocation, necessary tools and proper IT Infrastructure facilities especially in underdeveloped and developing countries. Most of the research literature published on ETDs is from developed countries, compared to underdeveloped and developing countries. Published literature also stressed the need for improvements and further research in providing universal access to ETDs.
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Keywords
Electronic Theses and Dissertations; ETDs; ETD Repository; Review of Literature.

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1) INTRODUCTION

Universities are the backbone of education system. They were established to provide an effective teaching and research environment and to serve the community. One broad way of achieving thisaim is to encourage research at undergraduate and postgraduate levels to produce quality output documents like theses and dissertations. In the recent years, the reputation and ranking of the university also depended onthe quality of research work conducted and published by research scholars of the universities.

Information and knowledge were considered as sources of wealth and progress. Student's theses and dissertations (TDs) can be regarded as part of information and knowledge produced in the country. The growth of the internet and its applications have added new dimensions to scholarly communication and helped in the faster retrieval of information which is the need of the hour. Apart from journal articles and e-prints, electronic theses and dissertations are the most frequent educational resources consulted by the scientific community.

Theses and dissertations are the fundamental pillars for applying and developing knowledge. They provide tangible evidence of the scholarly development of students and their ability to discover and communicate research findings and explain the innovative ideas of researchers.These Primary information resources are the most scholarly output of any research and acts as basis of further research as new researchers derive ideas and concepts from works done earlier in their domain. So, it is very important from a research perspective that the current researchers should reach the output of previously done research. The ETDs are similar to its paper predecessor with contents like figures, tables, footnotes, and references. Unlike print theses, they have the title page with the author's name, the university's official name, the degree sought and the name of the committee members. It describes why the research was done, how it relates to previous work as recorded in the literature, the research methods used, interpretation, discussion of the results,summary of findings, suggestions, and conclusions.

Earlier ETDs were submitted to universities are primarily in text format and many libraries do not have open access policy for them. Providing open access to these scholarly harvests of universities is vital because these intellectual assets in the form of

theses and dissertations can be used for the betterment of society. The open-access publishing model triumphs over the dilemma of financial barriers in the free flow of information and makes the research publications freely available to institutions and individuals. Hence, in recent years ETDs were promising to be highly advantageous to scholars, especially in developing countries.

With the massive growth of textual data on the web, including ETDs, the issue of organizing, managing, and disseminating information has got a lot of attention. It has led to many efforts, such as content analysis, knowledge management, text categorization classification, search strategy, semantic web and linked data to improve the information retrieval of systems and their performance for decision making. Meanwhile, it has also lifted certain issues and responsibilities for libraries, such as improved and open access to resources and proper maintenance of the huge information on the web server. Hence, developing and maintaining sustainable open access ETD repositories for users has also become challenging for library professionals.

2) NEED FOR THE STUDY

Literature published at the global level revealed an increase in the number of PhDs awarded worldwide and their importance has also helped further academic research. There is a need to study the present scenario worldwide of academic institutes with the recent trends in electronic publication, open access and state-of-the-art understanding of ETDs to the research community. Many of the previous studies were carried out only on content analysis of single institutional repositories of that nation. However, no research was conducted worldwide, particularly a chronological study from the twentieth to twenty-first centuries. So, to bridge this gap, this study has been carried out.This study is helpful for library science professionals to know various initiatives and access to ETDs from the global perspective and also helpsin understanding the various methods applied for enhancing and promoting open access to ETDs.

3) METHODOLOGY

The present study is based on an intensive literature search performed on various scholarly databases. The book chapters and articles were collected from the repositories, online databases, conference papers and various journals. Articles and book chapters published after 2001 were considered and chronologically analyzed to make the research more specific and relevant. The Keywords used to retrieve the articles are “Electronic Theses and Dissertations” and “ETDs”. Only articles that match with the article theme, i.e.,“Access to Electronic Theses and Dissertations from Global Perspective” were selected for the study. The findings, suggestions, and recommendations were mainly highlighted to accommodate more results.

4. SCOPE AND LIMITATIONS:

The scope of the study is limited to a literature search performed on the online databases, conference papers and various journals. Only the articles published after 2001 were considered for the study.

4) ACCESS TO ELECTRONIC THESES AND DISSERTATIONS

C. Ruth Nellis& M. Duane Nellis. (2000) describes the ETDs geographic information systems in West Virginia University research, which were readily diffused to the worldwide community by using remote sensing and geographic information systems.This system allows educators to download embedded maps and images from the ETDswebsite to facilitate more effective learning environments. Further authors illustrated the new approaches that helps to address the need for ETD projects.

Larry, A.(2001) discuss potential benefits of ETDs that have impacted Virginia Tech scholars for providing immediate, free, and global access to ETDs. Study highlighted the access restrictions, how these restrictions have thwarted attempts to verify the existence of ETDs and why some of these restrictions are no longer necessary in today’s publishing climate. Further the author also examined the current Virginia Tech policies and suggested some improvements for ETD projects, which helps in the visibility of ETDs.

Marconeset al. (2002) analyze the experience of various Brazilian institutions, which provide integration and unified access through web gateway for the full-text electronic theses and dissertations.Authors highlighted the increase and impact of academic free electronic publishing and results of pilot experiences developed under the coordination of IBICT and technical and technological aspects of the information system model adopted. Other aspects such as metadata element set, protocols for the automatic gathering of

metadata, union catalogue databases, user interface and integration with other Brazilian STI systems are also analyzed. Further, author recommends some measures to increase the visibility of the Brazilian electronic theses consortium.

Bakelli, Y., &Benrahmoun, S. (2003) describes the chain cycle of the ETD system, international standards, digital archiving techniques and long-term preservation mechanisms in Algeria. The author feels that digital archiving techniques, standards issues, methodology, policy aspects are unsatisfactory and need further development.Looi, E. N., &Yeng, S.W. (2003)gives a framework for ETD initiatives within the Malaysian context and discusses the various issues and concerns, including accessibility/availability, searchability, security and scalability of the electronic theses and dissertations. Further authors also provide a verifiable model on the collaborative ETD system.

Marcondes, C. H., &Sayao, L. F. (2003) analyze the various Brazilian institutions intending to provide integration and unified access to full-text electronic theses via aweb gateway. various aspects are analyzed, including metadata sets and formats, union catalogue databases, protocols for automatically gathering metadata, and user interface integration with other Brazilian STI systems.The further author focuses on developments and the enlargement of the Brazilian Digital Library of theses and dissertations.The author believes that academic institutes have made significant progress in building ETD repositories in Brazil. Further, they discusses about the future developments and enlargement of the Brazilian Digital Library of theses and dissertations. Paul Genoni& Roberta Cowan. (2003) focuses on Australian Higher Degree theses and recommends compiling comprehensive access to the bibliographic record of Australian higher degree research for improved coverage, enhanced subject retrieval and subject information about individual theses. Further the author recommends for improved access to ETDs by providing free and universal access to knowledge.

Susan Copeland & Andrew Penman. (2004) surveyed the UK's production patterns and usage of doctoral theses. The survey includes about 2,000 PhD students, 1,740 supervisors and 125 librarians.The survey revealed that most researchers found it useful to consult theses in their literature searches. Furthermore, the survey results indicated that, by this time majority of theses were produced initially in electronic format and most students were positive about the idea of their work being made available on the web.

Bevan, S.J. (2005)discusses issues such as the choice of software, thesis submission workflow,metadata issues, information retrieval, timeframes and usage of electronic theses in Cranfield University andalso describes how the service has expanded from e-theses to other types of material and to the development and expansion of an institutional repository.Further the author recommends adopting the latest technologies to run the ETD Project at Cranfield University Library.Susan Hall et al. (2005)conducted a study on the administration of electronic theses and dissertations in the US Institutes using the survey method.The results show that ETDs offer more freedom to research scholars because they provide enhanced features like multimedia, computer simulations and active links to other related resources. Further successful implementation of ETD needs comprehensive campus support.In addition to advantages to electronic submissions, training, Information technology, infrastructure, copyright, and intellectual property rights were observed as problematic in handling the ETDs.

Jewell, C et al.(2006) discuss issues associated with open access (OA) to electronic theses and dissertations (ETDs) and provide full-text metadata to the union catalogue of Canadian institutes. The author opinions that the E-theses project supports authors rights while minimizing access restrictions and encourages innovations while respecting the value of gradually evolving thesis standards and traditions. Further, the author highlights the success factors involved in the University of Waterloo E-thesis Project, sustaining perennial ideals and progress toward the OA paradigm for theses and dissertations. Further the author concludes the study by stating the need for collaboration with like-minded organizations to achieve the institutional goals.

Park, E. G et al.(2007) Confirm that Korean integrated electronic theses and dissertations project (IETD) is progressing toward developing an integrated system for sharing and exchanging electronic theses and dissertations.The author recommends focusing on standardized metadata sets to discuss and communicate more about electronic resource sharing and network development, presents a discussion of relevant issues and suggests measures for further implementation.Park, E.G et al.(2007) explore the issues related to the production and dissemination of ETDs in Canada and develops a

basis for full implementation of ETD programs. Further the author recommends the Canadian Universities to implement their electronic thesis program to find technical solutions and set up protocols and practical procedures.

Troman, A., et al.(2007) conducted a study to know the recent developments in electronic service for UK theses. The authors believe there is a need to reorganize the current EThoS project because this model is unsuitable for the current scenario.The author highlights the initiative British Library and other UK universities took in developing the project, which provides open access to ETDs by creating a central hub that offers digitization, discovery and preservation functions of electronic theses. Further the author gives many recommendations on EThoS policy framework especially on technical, busines, legal, and operational aspects and suggests all the higher education institutes of the UK to join the EThoS project.

Das, Anup Kumaret al.(2007)discuss the topic of Indian national ETD Initiatives in an emerging digital environment. ETD initiatives are still in the development phase where more action plans are needed and stakeholders are waiting for a concrete policy framework by the nationally accredited and fund-grating agencies. Open access to theses will help in avoiding duplication of research, so the author urges that open access to ETDs is a need of the hour, especially in a developing country like India.

Usman Alhaji, I. (2007) have conducted an evaluative study on the Digitization of theses and dissertations in Nigerian university libraries. The author's general view is that with the development and extensive application of information technologies and networks, it is universally recognized that Digitization of theses is cost-effective and the booming development in organizing, storing, preserving, retrieving, sharing,disseminating and ensuring effective usage of information. Further author discussed about three major challenges faced in the digitization process.Firstly, procurement of facilities for the project should be in earnest to support the immediate take-off of digitization projects in all Nigerian universities. Secondly, they must begin to articulate and implement viable funding and operational strategies for developing and sustaining the digitization projects and lastly need individual universities to develop efficient workforce.

Asner, H., &Polani, T. (2008)discusses about ETD Project at Ben Gurion University Israel and describe that rapid advances in information technology, finance conditions and information technology skills are the three forces that appear to be of utmost importance in ETDs Management.

Michael Boock& Sue Kunda. (2009) found that Oregon State University Library is moving from print to electronic ETDs, saving time in several technical service areas. The author identifies human resources, proper IT Infrastructure and assistive technologies as major challenges in implementing ETDs in Oregon State University Library. The author recommends creating student-oriented descriptive metadata, automatic generation ofMARC records, proper processing, cataloguing of ETDs, retrospective conversion and metadata creation of ETDs during the ETD submission process.

Lihitkar, Shalini et al.(2009) Conducted a study on major institutional repositories in India. The authors have analyzed 33 institutional repositories and observed that D-Space and E-Prints were the most commonly used software's for building institutional repositories. The author highlights the absence of well-defined institutional policy in establishing repositories and copyright issues. Further, the author suggested measures like the government's need for policy decisions in setting upETDs and awareness among user community in gaining access to ETDs.

William Gee & Cindy Shirkey. (2010) were unhappy about the digitization project in East Carolina Universitybecause; the government is forcing large budget cuts for digitization projects.Further the author states that if such budjet cuts continue,the ETD Projectswill be closed in the future. Koulouris, A. and Anagnostopoulos, A. (2010) analyze the value-added e-submission system and its proceduresat the National Technical University of Athens. The results show that these new tools helped users submit their e-theses and helped staff organize theETDs efficiently into theDSpace system. Further the author recommends establishing a strategic preservation plan for the ETDs.Early, Mary G. and Taber, Anne Marie (2010) reveal that universities in North Carolina do not have proper facilities and human resources for ETD Projects. The author argues that Libraries need more budget to convert print theses and other ETD Projects.

Alsalmi, J et al.(2011) assess the adoption and development ofETD programmesin the Arab Gulf States and measure the impact of ETDs on the research community. Further the author recommends to include promotional activities related to ETD programs in the Arab Gulf States.Park, E.G. and Richard, M. (2011) assess the metadata element sets of electronic theses and dissertations that are currently used at Canadian academic institutional repositories and also discuss the issues related to variations and inconsistencies in Dublin Core data used in ETD repositories and addresses some issues affecting standardization of practice in this area. Further, the author recommends following newer metadata protocols such as ETD-MS, which continues to develop and offer users improved access to library and university resources.

Ezema, I.J. and Ugwu, C.I. (2013) substantiate that university libraries in Nigeria took many benefits from ETD projects. These benefits include enhancing scholarly communication, promoting global visibility and enhancing research dissemination.Further the author recommends the government bodies to design a pragmatic approach for the development of an ETD programs, increase funding, dedicated budget for ETD Projects, formulate copyright policies and a good strategy for the aggregation of the theses and dissertations in the country.Ramlogan, Rabia Mrs. (2014) expresses his concern that, many of the universities inthe West Indies have not started the ETD Project. For the uniform work flow and completing the universities mission, author recommends to form a bridge between faculty, students and research scholars.Shuto, M et al.(2014)conducted a study on the Japanese government's current open access initiative on doctoral theses by covering all universities offering doctoral programs.The author highlighted the present situation and various efforts taken by the Japanese government on the open-access ETD movement. Further, the author recommends the Japan governmentto design the advanced policies and frameworks for initiatiating ETDs services.

Ahmed, A., et al.(2014) Conducted a study on ETD repositories in Asia. The study reports that there are 247 ETD repositories in Asia. Out of the total 247 e-thesis repositories in Asia, Japan has contributed more of theses, followed by India, China, Taiwan and Indonesia. Among the six commonly used software by the organizations and institutions in Asian countries to create e-theses repositories, DSpace has more installations with 159 (64.4 per cent), followed by E-prints 45 (18.2 per cent). Further the author highlights the awareness of research being conducted in Asia and its contribution to a global knowledge base and recommends for creating a unified database to be coordinated by a central agency to spread the process of the ETD movement.Edward Phillips, M. et al. (2014) analyze the 4335 URL reference in north Texas university ETDs. Reports that ETDs at the University of North Texas include URL references have increased in the last 14 years from 23 to 80 percent. URLs are being included in ETDs in the majority of cases. Further research establishes that web resources are being widely cited in ETDs and there ia a study growth in citing these ETDshas been observed. Finally, the increase of URL inclusion in ETDs allows libraries and archives responsible for curating these resources to consider collecting and preserving the resources and scholarly context linked to these documents.

Baro, E. E., &Otiode, P. G. (2014)investigates the extent of implementing Electronic theses and dissertations (ETDs) in African university libraries. The study used quantitative and qualitative research methods, showing that many university libraries have already adopted ETDs. Many universities in Africa have made it mandatory policy for research scholars to submit their theses and dissertations in electronic form.The study also identified challenges such as lack of funds, absence of ETDs policy, lack of skills, copyright issues and lack of metadata standards.Further the author makes some of the recommendations such as policy formulations for mandatory submission of ETDs, cooperation between the universities in Africa, funding from the government agencies and provision of proper training for library staff. Emmanuel E. Baro, etal. (2014) conducted an in-depth analysis and found that there is a need for improved access to ETDs. Further author investigated the extent of adoption of electronic theses and dissertations in university libraries in Nigeria and discussed the benefits of electronic theses and dissertations such as improved university ranking, visibility, increased access to the theses and dissertations, space-saving in the library, enabling persistent URLs, preserving the work for future generations and cost-saving for students. The author also recommends formulating policies on mandatory submission of ETDs, establishing cooperation across universities in Nigeria, Copyright issues and other legal requirements. Tella, A., et al.(2016) conducted a study to determine the perception of open access electronic thesis and dissertation by undergraduate students of the University of Ilorin, Nigeria.The

findings reveal the benefits of open access electronic thesis and dissertations to the University of Ilorin undergraduate students, including saving of time and efforts, quality information, 24hrs availability, the possibility of simultaneous use by a number of researchers and user-friendliness. The author recommends that the library administrators organize periodic training for undergraduate students on electronic theses and dissertations.

Kisemiire Christine Kagoro, et al.(2016)discusses the current status of ETD repositories and examines the constraints faced by academic libraries and of universities in the Digitization of theses and dissertations in some selected African countries. The study found a lack of appropriate infrastructure in universities such as scanners, poor internet connectivity, improper file formats, slow Digitization process and lack of a streamlined procedure in handling the submitted theses.The author also focuses on various constraints faced by some academic libraries in the Digitization of theses and dissertations,which includes poor digitization policies, inadequate library staff training, copyright policies, poor network connectivity, deterioration ofdigital media and shortage of cataloguers.Further, further the author recommends conductingseminars and workshops on the Digitization of ETDs by library and information science experts. Al-Busaidi, I. S., &Alamri, Y. (2016)conducted a study on publication rates and characteristics of undergraduate medical theses in New Zealand. The study's findings show that ETDs received higher citations and significantly impacted research publications. Further the author suggests New Zealand government to provide financial assistance for ETD Projects. Ifeanyi J. Ezema& Harriet U. Igbo. (2016) found a lack of availability of required technology in African university libraries and therefore ranked low among the other regions of the world on the production and communication of research findings. The author highly recommends building the proper ICT Infrastructure because improper ICT Infrastructure does not provide the required platform for establishing ETD Repository in the university libraries.

Kisemiire Christine Kagoro, et al.(2017)examines the Digitization of theses and dissertations in south African institutes to understand the satisfaction of students, libraries and different partners. The results show that the digitization project of ETDs is very slow in South African institutions because of insufficient fund and staff. Futher author recommends the universities to allocate more funds to build technological infrastructure, digitization activities, develop human resources, develop digitization plans, policiesand the long-term preservation of ETDs. Ndungu, M.W. (2017)Surveyed Bibliographic control of theses and dissertations in Kenya. Through this study,the author reported some of the difficulties in ETDs bibliography control like unnecessary delays in the libraries getting their designated copies, ineffective coordination between the different university departments in the deposition process, deposition of soft copies, delays in capturing theses and dissertations in the library OPACs and lack of consistency and uniformity in the bibliographic records. Further the author recommends the national documentation centre of Kenya to take national responsibility for the bibliographic control of ETDs in Kenya. Perera and Rahman. (2017) conducted a study on bridging information disparities through ETDs in academic libraries to compare the situation between Sri Lanka and Bangladesh.They applied a case study methodology. The author found that most of the IR's and archives of university libraries in Bangladesh and RCSS Library in Sri Lanka maintained a closed access system for the institutional members. However, researchers from outside might request to have a particular thesis and dissertation to the respective library. The study alsoidentified that the Digital Archive on Agricultural Theses and Journals (DAATJ) was the onlycollaborative network on ETD initiatives in the Agricultural sector of Bangladesh.

Bangani, S. (2018) investigates the academic and societal impacts of the engineering electronic theses and dissertations (ETDs) at the North-West University, South Africa. The results show that the 612 theses and dissertations attracted 931 citations, translating to 1.52 citations per thesis on average. 41.2% of theses and dissertations received at least one citation and the conversion rate into academic research output was 16.8%. Further the author recommends to follow ETD submission policy for both masters and PhD students.Dotson, Daniel S. (2019) analyzed the usage of the Ohio State University's electronic theses and dissertations. After analyzing the data, the author reported that departments from multiple disciplines saw significant downloads with the highest average download rate and the average download count for all ETDs is 571.13. Further the author recommends measuring the success of ETDs in terms of the number of downloads and citation rates. Abubakar Saka, et al.(2021) clarify that university libraries in Nigeria

are not in a position to provide the best service for research scholars as libraries face challenges in Digitization, digital preservation, digital resources and access. Further the author recommends the universities provide adequate funds for purchasing computers, scanners, and storage media and collaborate with national Library of Nigeria and university libraries of Nigeria to compile a comprehensive National Union Catalogue of ETDs. Further the author highlights the need of awareness programmes among Nigerian library association, users of university libraries, researchers and other stakeholders in the field of library and information profession about the access to the databases of the available ETDsin various universities irrespective of their locations.

5) MAJOR INFERENCES

1) It is found from the review of published literature that majority of studies are published from developed countries and only a few studies are published in developing countries. Though India has one of the largest education systems in the world, ETDs infrastructure is not yet developed properly and some of the leading institutes are not yet providing even minimum ETDs access to users.
2) It is found from the review of published literature that access to ETDs across theworld is reluctant and somewhat slow inproviding services to research scholars, particularly in underdeveloped/developing countries.
3) Majority of the studies were focused only on need, initiatives, and implementation of ETDs and other categories such as users benefits were somewhat neglected.
4) Developed countries ETD Repositories have shown a higher percentage of user satisfaction and better support service than developing countries ETDsrepositories like India
5) The literature review found that the majority of the ETD projects worldwide suffer from acutefinancial problems that lead to poor infrastructure facilities, lack of resources,services and efficient personnel, which ishampering them to provide sufficient services to the research community.
6)The literature review shows that ETD projects worldwide are lagging behind in using Information and communication technologies to provide services to the research community.
7) It is found from the literature review that ETD services offered by the universities are significantly less. Also,many research scholars are unaware of the services being provided to them.
8) It is found from the literature review that many institutes have taken various institutes in providing the open access to ETDs across the globe.
9) Majority of the authors argued for significant improvements in physical accessibility, resources, services of ETDs to provide better and quality services to the research community. They also stressed the need for further intensive research in the area of ETDs.
10) From the present study, it is found that many western researchers think there were no initiatives from Indian Educational Institutes/Universities. This study shows that there were many initiatives from renowned Indian educational institutes/universities

6) CONCLUSION

Making ETDs accessible to the public will achieve the goal of 'Information for all' and address the major issue of social inclusion to a large extent. ETDshelps in the wider dissemination of research results to society and helps in getting maximum citations. It is evident from the literature review that the current scenario of ETD projects is not very encouraging particularly, in developing and underdeveloped countries. Academic libraries are now slowly recognizing the need to provide access to ETDsand recent researchdevelopment activities, especially in the era of Information and Communication Technology, has made it quite obvious for ETD Projects to progress in that direction. The research work published worldwide in the last two decades indicates that, academic institutions are realizing the need to provide uninterrupted access to ETDs. Providing proper IT Infrastructure and access to ETDs is not only the mission of the academic libraries but also preserving them for the nation's development shortly.

Further, the literature review revealed that developed countries ETD repositories have shown higher user satisfaction and better support service than developing countries ETD repositories like India. Another lacuna of Indian ETD repositories is that they will not provide service in any Indian regional languages, which led to unfamiliarity and frustration for the research scholars. This clearly shows that Indian ETD repositories are failing to meet the growing needs and expectations of Indian research scholars.

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