

# **ETDs in South Africa: Current Status**

by

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## **Opening Comment**

Those of us who followed the recent debate on “Digital and traditional libraries” in Diglib listserv might recall that Henry M. Gladney said that the debate reminded of an old joke that he often heard in IBM Research:

The world contains three kinds of people.  
--- those that make things happen,  
--- those that watch what's happening, and  
--- those that, when they awaken, ask, "What happened?"

We can fit ourselves into one of the categories above.

I want to thank Gail McMillan, Ed Fox and Jean-Claude Guédon for making it possible for me to be at this conference to enrich my knowledge of developments in the ETD arena.

## **Abstract**

The paper examines the developments in the ETD scene in Africa in general and South Africa in particular. A survey of the scene in South Africa was carried out with a brief questionnaire that was sent to the directors of university and technikon libraries. Of the 37 universities and technikons in the country, only four request students to submit digital files of their theses and dissertations. Two other universities and a technikon are at the planning stage. The issues and constraints of the ETD projects are discussed. The ETD initiatives by SEALS, SABINET Online, COSALC and the National Research Foundation are also discussed. The way forward for a speedy involvement of academic institutions in a national ETD project is presented.

## **Introduction**

South Africa's tertiary educational system is entering an exciting but challenging era. Following the report of the National Working Group (NWG) that was set up to advise the Minister of Education on the appropriate arrangements for restructuring the provision of higher education on a regional basis, higher education in South Africa is set to undergo transformation through the development of new institutional and organisational forms, including institutional mergers and rationalisation of programme development and delivery (South Africa, DoE, 2002). The NWG has recommended a reduction in the number of higher education institutions from the current 36 to 21 in the future, the reason being the need to ensure the "fitness of purpose" of the higher education system to discharge its teaching and research mandate. The University of South Africa, a distance education institution, is not among the 36. The vision as stated in the Education White Paper 3, is to develop a single, national, co-ordinated higher education system, which is diverse in terms of the mix of institutional missions and programmes (South Africa, DoE, 1997).

The goals identified as central to achieving the overall goal of the transformation of the higher education system in the country include the building of high-level research capacity to address the research and knowledge needs of South Africa, and the building of new institutional and organisational forms, and new institutional identities, through regional collaboration between institutions (South Africa, DoE, 2001).

It is envisaged that a transformed higher education system should lead to increased graduate enrolments and outputs at masters and doctoral level. In the year 2000, the higher education system enrolled 37,393 masters students and 6023 doctoral students, while the output was 5776 masters graduates and 815 doctoral graduates (Skene, 2002).

The intellectual wealth of nations is becoming increasingly visible online. There is, therefore, a need for the creation and maintenance of knowledge repositories for theses and dissertations (TDs) as well as the improvement of access to this knowledge. Some efforts in this direction are now being made in African and various other countries.

## **Developments in the ETD arena in Africa**

Africa has to participate in the global efforts to make TD information available, and there are increasing initiatives to that effect. As mentioned in the Unesco *Guide for Electronic Theses and Dissertations*,

access to ETDs may be the only recourse open to those in developing countries who cannot afford to make purchases from Proquest, who cannot wait for expensive shipping of copies through interlibrary loan, who cannot attend the myriad conferences that demand the considerable expenses related to travel, or who cannot pay for expensive journals (that only may have short summaries of thesis or dissertation results) (Fox, 2001).

Presently, most of the TDs produced in Africa are not easily accessible to other students or researchers. The vast bulk of research conducted in Africa remains as grey literature and is thus effectively lost (Sturges and Neill, 1998)

It is encouraging to note that there are serious attempts to make African TDs available to the international community. The dearth of information on African research output, and the inaccessibility of theses and dissertations completed in the region, many of which contain local empirical data that is not available in the international literature, prompted the Project for Information Access and Connectivity (PIAC) to convene a meeting in Nairobi in January 1988 to plan a feasibility study for a pilot project to index, abstract, and distribute theses and dissertations completed in African universities (Materu-Behitsa and Levey, 1998). The meeting agreed that there is a critical need to get research on Africa, by Africans, into the global knowledge pool; a pilot Database of African Theses and Dissertations (DATAD) could play an important role in meeting that need; and that the Association of African Universities (AAU) is the most appropriate organization to lead the DATAD process.

Based on the results of the feasibility study by PIAC, the AAU has embarked on the initiative to build DATAD. In a three year pilot phase in which eleven universities and one social science consortium will participate, TDs in the selected institutions will be indexed and entered into a single database, and made available via the Internet and on CD-ROM. It is envisaged that DATAD would be marketable outside of Africa as well as within. The Ford Foundation has provided a grant of US\$300,000 towards the project and the Rockefeller Foundation has provided US\$217,677 out of the total budget of more than US\$800,000. It is anticipated that DATAD will become, in the long term, a self-financing project.

In July 2000, the AAU formed an Advisory Committee for the DATAD pilot project. The committee consists of nine members, drawn from Egypt, South Africa, Namibia, Côte d'Ivoire, Nigeria, and Ghana. The Advisory Committee is expected to provide professional, technical and expert advice and guidance on the planning and implementation of the DATAD project.

At the first meeting of the Committee held in Accra, Ghana in September 2000, which the author attended, the Secretary General of the AAU, Professor François Rajaoson, in his opening address, reiterated the importance of the project in disseminating academic research output in Africa. He also noted the centrality of the input of the Committee to the successful implementation of the project. Issues pertinent to successful implementation of the project, including copyright and intellectual property rights (IPR), strategies for management, data quality control and standardization, and CD-ROM production, were discussed. The author is privileged to be a member of the Committee, and has chaired it since inauguration.

The Advisory Committee established a technical sub-committee to work with the Project Coordinator on the technical aspects of the project. Mary Materu-Behitsa, the Senior Programme Officer responsible for DATAD at the AAU, informed the committee members in April 2002 that

site visits for installation of equipment and software was accomplished in Eduardo Mondlane University, University of Ghana, Addis Ababa University,

Ain Shams University, University of Zimbabwe, University of Dar es Salaam, Yaounde 1 University, Makerere University, Cheikh Anta Diop University and CODESRIA. The development of the integrated database at AAU was being done in collaboration with the participating institutions.

A further DATAD Advisory Committee meeting and workshop is scheduled to take place from June 11<sup>th</sup> - 13<sup>th</sup> at Addis Ababa University in Ethiopia, and will review the progress of the project.

DATAD is now one of the core programmes of the AAU under the theme: *African universities and the challenge of knowledge creation and application in the new century*, Sub-Theme 5: *Improving management and access to African scholarly work*. The components of this sub-theme include:

1. The Database of African Theses and Dissertations (DATAD)
2. Digital Library for Theses and Dissertations
3. Guideline for Copyright and Intellectual Property Rights
4. Collective Acquisition and/or access to Academic Literature

DATAD is envisaged as an information resource that will

- create capacity in African universities for the collection, management and dissemination of theses and dissertations electronically;
- provide visibility and improve access to the work of African scholars both within and outside of the continent;
- facilitate the development of relevant copyright procedures and regulations which will promote the protection of the intellectual property rights of African university researchers;
- provide support for AAU programs which aim at capacity building in the area of research, cooperation among member universities and networking of institutions with access to a central source of information; and
- contribute to the creation of an environment conducive for research and publication in African universities and the region as a whole. ([http://www.aau.org/coreprog/0104/themes.htm#Sub-Theme 5: Improving management and access to](http://www.aau.org/coreprog/0104/themes.htm#Sub-Theme_5:_Improving_management_and_access_to))

While DATAD is a retrospective project, the objective of the Digital Library for Theses and Dissertations is to initiate electronic submission of theses and dissertations.

There seems to be a general awareness among many universities in Africa of the need to collect digital information on TDs; and some universities are now apparently requesting students to submit digital copies of their TDs. This is a welcome development that will lead to the addition of TDs produced in Africa to the global knowledge pool.

## **The South African Scene**

In South Africa, development in the ETD arena started in 1996 when Rhodes University (RU) undertook an investigation into the holding of electronic copies of theses and dissertations. The Senate of the University in April 1997 approved mixed submission of both print and digital copies of student theses and dissertations. With the support of Virginia Polytechnic Institute and State University (Virginia Tech) which donated free software to Rhodes, the University mounted its first digital thesis on the World Wide Web in 1998, and became the first institution in Africa to do so. Since then, the number of theses and dissertations available at RU's electronic archive has steadily increased.

RU joined the Networked Digital Library of Theses and Dissertations (NDLTD) Initiative, in May 1997 thus becoming the sixth institution in the world to do so. NDLTD was first funded as the National Digital Library of Theses and Dissertations. The US Department of Education's grant of September 1996 established a national programme. By early 1997, international demand broadened the scope into a global effort (hence 'Networked' instead of 'National', made possible by a friendly federation among universities (Fox, 1999). The objectives of the NDLTD are

- to improve graduate education by allowing students to produce electronic documents, use digital libraries, and understand issues in publishing;
- to increase the availability of student research for scholars and to preserve it electronically;
- to lower the cost of submitting and handling theses and dissertations;
- to empower students to convey a richer message through the use of multimedia and hypermedia technologies;
- to empower universities to unlock their information resources; and
- to advance digital library technology. <http://www.ndltd.org/>

In order to build a digital library of theses and dissertations in South Africa as well as promote collaboration between research programmes among the universities, Rhodes University, in July 1999, invited other institutions to join the NDLTD initiative (Ubogu 2001).

### **Questionnaire findings**

In preparing this paper, a brief questionnaire was sent to the 22 universities and 15 technikons in South Africa, soliciting information on their TDs as well as information on their ETD projects if any. The responses received to date, are presented in Appendix 1.

Of the 22 universities in the country, only four request students to submit digital files of their TDs. These are

- ❖ Rand Afrikaans University
- ❖ Rhodes University
- ❖ University of Port Elizabeth
- ❖ University of Pretoria

The University of Port Elizabeth has no TD available online on the web nor on the intranet. At the Rand Afrikaans University "Full text theses/dissertations are not made

available across the network, only bibliographical detail and abstracts. Full text is only made available on the Intranet. A copyright warning/message is also placed on the Intranet.”

Both Rhodes University <[http://www.ru.ac.za/library/electronic\\_resources](http://www.ru.ac.za/library/electronic_resources)> and the University of Pretoria <<http://upetd.up.ac.za/ETD-db/>> make the abstracts of their TDs available on the Internet.

It appears that the University of Pretoria has adopted a policy to make its TDs fully available on the Internet. This is in line with the goal of the Networked Digital Library of Theses and Dissertations (NDLTD) that seeks to make TDs widely and freely available. Of the 135 ETDs on Rhodes University’s web site only one has full text. Of the 21 ETDs available on the University of Pretoria’s web site on 17 May 2002, 19 had full text. The University of Pretoria is the only institution that has provision for electronic submission, having adopted the NDLTD software. The University of Pretoria’s ETD web page was created with the support of the NDLTD.

Whereas Rhodes University provides no information on TDs with restricted access, the University of Pretoria provides information on author, email, URN, document title, degree, department, supervisor, keywords, date, availability, abstract, and files (filename, size, approximate download time (hours: minutes: seconds)).

Two other universities are planning their ETD projects. These are the University of South Africa and University of the Witwatersrand. Of the 15 technikons only one, Port Elizabeth Technikon, has plans for an ETD project. It should be mentioned that many of the technikons only recently embarked on higher degree programmes and some have not done so.

The issues and constraints that most academic institutions in the country have to deal with are similar to those facing any institution that has or is planning an ETD project.

## **Issues**

### *Submission software*

Most of the institutions require students to submit their TDs in portable document format (PDF), using Adobe Acrobat. Only the University of Pretoria has set up submission software using the NDLTD software, and also has made it mandatory that students from a particular department may only submit electronically. At Rhodes University, the Library offers assistance with PDF conversion at a fee.

Automated procedures for submission streamline workflow and save time and labour. This procedure eliminates some of the concerns often raised about ETDs, especially the concern that the digital file submitted by students may not be the same as the final approved copy of the file.

### *Submission Guidelines and Training*

Institutions provide some guidelines but, with the exception of University of Pretoria, no training is provided. One institution deems training as a very important aspect.

Guyllaine Beaudry observes that

Many universities undertaking electronic theses projects have uncovered serious skills gaps in terms of creating tables, of integrating figures and images, and using functions that automatically generate tables of contents or lists. Clearly, basic training must be offered to better prepare students for the process of writing important documents like theses. Student training must be offered through many forms such as workshops, on-line tutorials and personal consultations (Beaudry, 2001).

#### *Intellectual Property Rights*

Copyright policy varies among institutions. Some compel students to sign over the copyright to the institution. A Director of Research at one technikon justified the retention of copyright by institutions because the institution provided supervision as well as the infrastructure. She expressed the opinion that increasingly the international norm is for institutions to hold the copyright of TDs as well as own the intellectual property. The legality of this is yet to be challenged in a court of law.

#### *Quality Assurance*

All the institutions have mixed submission (print and electronic), except the University of Pretoria, as mentioned above. A great concern of institutions that have mixed submission is how to ensure that the hardcopy and the electronic version are one and the same thing. Often institutions indicate that they do not have the personnel to verify the readability of the files, the presence or absence of particular characters, as well as the presence in both electronic and paper form of all the non-textual elements (images, sounds, etc). The methods used in checking the conformity of the two versions include

- declaration from students and heads of department;
- checking electronic copy against paper copy;
- acceptance of only one form of submission – paper or electronic.

Jean Paul Ducasse observes that the mixed submission

should be seen as a step towards the completely electronic submission, but it is also a satisfactory solution for establishments lacking the infrastructure and personnel needed for electronic submission (Ducasse, 2001).

He further notes that electronic submission removes the risk of non-conformity inherent in mixed submission, as all print copies must be generated from the electronic version. However, the system requires the support of many different types of structures including a relatively complex computer infrastructure, digital cameras, and video capturing / manipulation system.

#### *Archiving*

None of the institutions has given much consideration to the issue of archiving. It appears that institutions would be happy for Sabinet Online to deal with the issue of long-term preservation of electronic archive. Sabinet Online is an established and experienced information and service provider in South Africa. More detail of Sabinet's involvement is given below.

### *Personnel issues*

None of the institutions has hired additional staff for the project. Where teams exist, the team members have accommodated the project as part of their normal tasks. The University of Pretoria hopes to eventually have a general quality controller.

### *Hardware requirements*

None of the institutions has provided additional hardware infrastructure. The ETDs are housed on either the library or the institutional server.

### *Membership of the NDLTD*

Three universities are members of the NDLTD.

### **Constraints**

The constraints faced include lack of expertise, budget constraints, and in particular, inadequate staffing. Most of the institutions are of the view that additional personnel will be required when projects have developed to full capacity.

## **Regional (Provincial) and National Initiatives in South Africa**

### **South East Academic Libraries System (SEALS)**

The South East Academic Libraries System (SEALS) is a formal academic library consortium under the Eastern Cape Higher Education Association (ECHEA). Following a proposal to the Mellon Foundation, SEALS, in June 2000, received a grant of \$79,609 for the purchase of software and associated hardware for a co-operative digital theses and dissertations project. SEALS was to be the first consortium in Africa to undertake such a resource-sharing project that sought to provide electronic access to theses and dissertations produced in universities/technikons in the province by establishing a distributed database of digitised theses and dissertations. Other aims of the project were

- to prepare scholars for their professional careers by giving them practical exposure to electronic publishing;
- to provide visibility and improved accessibility to the work of scholars both within and outside the country;
- to promote collaboration between research programmes at separate universities/technikons by making research work visible and accessible via a network archive;
- to enable more efficient and economical use of each institution=s library and administrative resources; and
- to develop capacity in member institutions in collection, management and dissemination of theses and dissertations electronically (Ubogu and Wilson, 1999).

The project was to be based in each of the seven institutions in the consortium. The project was viewed as having national implications, and it was seen as expedient to involve some institutions that had embarked on ETD projects in order to draw up national standards.



The first meeting to discuss the project was held on Wednesday 25 October 2000 in Port Elizabeth. The meeting agreed on the obligations of ECHEA/SEALS and Member Institutions (MI), key deliverables, project management, project activities, provisional budget for each member institution, an ETD model for SEALS, and work plan. SEALS was fortunate that Professor Edward Fox, Director of the NDLTD, was able to attend that meeting.

In particular, the experience of Rhodes University was to inform any model that was to be used. Time should not be squandered reinventing the wheel. The key teething problem in the experience at Rhodes University was the nature of digital files submitted by students (see Appendix 2).

SEALS however is now implementing a new library system and the ETD project there has had to take a back seat. The principal driver of the initiative however, has taken up appointment in another province, where an ETD project has again been initiated.

### **Sabinet Online**

Sabinet Online is an established and experienced information and service provider in South Africa, with all the academic libraries and more than 500 corporate (government and private) libraries actively using its services. In addition to this, Sabinet Online also has extensive experience as an electronic publisher, and currently publishes or hosts more than 31 academic journals, as well as the Government Gazette, the Tender Bulletin, the SA Statutes, Provincial Legislation, Daily Law Reports and a full-text electronic press clipping service. Its Academic and Library Division is dedicated to serving all academic institutions, government libraries and other library clients with value-added access to information services, cataloguing- and interlibrary loan support services < <http://aclib.sabinet.co.za/>>.

Sabinet Online provides access to various databases including a Union Catalogue of Theses and Dissertations at South African universities (UCTD), and a database of South African Technikon research (NAVTECH). The databases contain bibliographic records of theses and dissertations at master and doctorate levels submitted to universities and technikons in South Africa since 1918. The databases are limited in their information content, and lack essential elements such as abstracts and specific subject headings.

Recently, Sabinet Online sent a proposal to South African academic institutions for the establishment of a full-text database of South African theses. The proposal has drawn some interest from libraries. Sabinet Online proposes to

- host the theses and dissertations published by South African Universities and Technikons electronically in full-text on its servers;
- do the basic indexing of the content in cases where the bibliographic records are not present in UCTD, NAVTECH or SACat;
- build an electronic archive of all the submitted theses and make the archive available to all contributing Universities and Technikons;
- set up a database and web page for all South African theses, and maintain it on an annual basis;

- carry out retrospective conversion of materials published prior to 2002 (depending on subject area);
- provide free access to contributing institutions;
- combine UCTD and NAVTECH bibliographic database with the service;
- sell access to non-contributing users and / or organizations. This would include access on a subscription and on a pay-per-view basis; and
- use the revenue derived from selling subscriptions to non-contributing institutions and from selling documents towards recovering some of the costs that Sabinet Online will incur to establish and maintain the project.

The contract specification states that

- unless an institution contributes to the project, access to the electronic content is subject to an annual subscription fee, or by paying to view a thesis;
- the revenue that Sabinet Online generates through the sale of the electronic content will be used towards recovering the costs that Sabinet Online will incur to establish and maintain the project;
- contributing institutions will have to supply Sabinet Online with lists of subscribers or IP addresses on a regular basis for the purpose of managing access;
- **contributing institutions will be required to supply Sabinet Online with the full-text content of theses in .pdf (Adobe) format;**
- contributing institutions will be required to catalog theses on the SACat database;
- Sabinet Online will create and maintain a database of all theses. (This database will form a subset of SACat.);
- Sabinet Online will be responsible for all costs incurred in terms of the creation of the database, and the development of the portal and web, as set out in this proposal;
- Sabinet Online will market and promote the service; and
- Sabinet Online does not insist on exclusive rights to publish the theses electronically. (Sabinet Online, 2002)

It should now be clear to academic institutions that Sabinet Online's proposal is to set up an electronic archiving and distribution facility but still require institutions to set up the infrastructure to enable students produce TDs in portable document format using Adobe Acrobat. Academic institutions should take particular note of the fact that **“contributing institutions will be required to supply Sabinet Online with the full-text content of theses in .pdf (Adobe) format”**.

It might seem sensible therefore to combine full-text with bibliographic details on the UCTD and NAVTECH. However, on 20 February 2002, the Ferdinand Postma Library, Potchefstroom University for Christian Higher Education, informed the academic libraries that the compilation of the UCTD for which it had been responsible, was to be discontinued. The Ferdinand Postma Library had been responsible for its compilation. The reason given for the discontinuation included cost and logistics, and also

because the UCTD's format and level of indexing do not really compare favourably with newer databases and because more acceptable alternatives are becoming available. NEXUS and SACat as well as SABINET's plans for a full-text database of Theses and Dissertations are examples of the latter (Larney, 2002).

Academic institutions now need to debate the model proposed by Sabinet Online and decide if that is the most appropriate model for the country. Gabriela Ortuzar notes that beside the **shared infrastructure** model proposed by Sabinet Online, other models that could be explored include

- shared software development;
- shared metadata; and
- shared documentation and training tools (Ortuzar, 2001).

On **shared software development**, Ortuzar notes that

Sharing of generic software, which is easily installed and maintained, can be a cost effective way of establishing an ETD program. This can be of particular benefit for institutions where staff with highly developed IT skills are in short supply. Collaborative development or modification of new versions of software can also be very cost-effective.

And on **shared documentation and training tools**, she notes that

Sharing of detailed documentation on all aspects of operating an ETD program is a very cost effective method of collaboration. The development of generic procedures and training programs, which can be customized for local conditions, can facilitate the participation of institutions in an ETD program. Sharing of documentation is also likely to reinforce the use of standards, which will ensure the ETDs are readily discoverable.

Past experience (for example, with SA-MARC has shown the need for South Africa to be involved at the international level whenever possible to avoid duplication of effort. For example, NDLTD's federated digital library supports multilingual distributed searching (<http://www.theses.org>) of all sites that provide suitable access (Fox, 1999).

### **The Coalition of South African Library Consortia (COSALC)**

COSALC consists of representatives from the five regional (provincial) academic library consortia in the country and other stakeholders (<http://www.uovs.ac.za/lib/lib-home.asp>).

COSALC has taken great strides to enhance access to information in South Africa and is presently actively involved in establishing a national site licensing initiative. The proposal by Sabinet Online has been discussed by COSALC and it hopes to place the issue on the agenda of the meetings of heads of the universities and technikons. However, COSALC did not canvas the views of stakeholders at institutional level on SABINET Online's proposal before taking the issue forward.

## **National Research Foundation (NRF)**

The NRF < <http://star.nrf.ac.za/>> has not shown any interest in ETDs but is also a stakeholder in this field as it sponsors many research projects. Its Nexus Database System contains information on over 118 500 current and completed research projects in South Africa, including abstracts of masters and doctoral degrees.

## **The Way Forward**

What should be the way forward for a speedy involvement of academic institutions in a national ETD project? Susanne Dobratz observes that

For universities, it seems most practical to participate in national ETD initiatives. For those initiatives it is advisable that the National Library, which is often in charge of archiving the country's literature, takes a leading role (Dobratz, 2001).

However, various other models exist. In Canada and Germany, the National Library leads a national initiative, while in France the Ministry of Education drives the initiative. The National Library is often in charge of archiving the country's literature output. In Australia, the digital theses programme started as an initiative of seven Australian universities in association with the Council of Australian University Librarians (CAUL) <<http://www.library.unsw.edu.au/thesis/adt-ADT/info/aims.html>>

An ETD program is located at the institutional level where stakeholders should be involved in discussing issues and concerns. Ultimately it is the students who will be required to produce ETDs. Institutions

- initiate the establishment of procedures for the submission of electronic theses and dissertations by students as part of the conditions of the award of the degree;
- oversee establishment of internal ETD management teams;
- take responsibility for the management of their TDs and for the conversion of the theses and dissertations into appropriate archiving format;
- facilitate the development of relevant copyright procedures and regulations that will promote the protection of the intellectual property rights of the authors;
- provide a working environment that is conducive for the project; and
- provide staff for the execution of project activities.

There is a need to collaborate at the national level in South Africa, and to involve various interest groups including academic libraries, information technology departments, Sabinet Online, COSALC, the Forum of University Librarians in South Africa (FULSA), Inter-technikon Library Committee (ITLC), NRF and the National Library of South Africa. It is easier to canvas for funds at the national level, especially in a consortium.

Since SEALS no longer appears to have the capacity nor zeal to drive a national initiative, the three academic institutions that do have some substantial experience in

the ETD arena should form the nucleus of a national coherent ETD programme. They have experience that they can share and use as basis for a national programme, which could become a project under COSALC or FULSA/ITLC.

Susanne Dobratz has also stated that the principal tasks of a so - called central coordination bureau for national ETD initiatives are:

- providing a coordination structure for the cooperation of universities for political, organisational, technological and educational issues and developments;
- providing an organizational concept for funding local or regional initiatives, therefore negotiating and cooperating with national funding agencies;
- defining special interest and working groups in which representatives from universities can participate;
- organizing workshops for participating universities covering special topics in order to discuss and solve particular problems; and
- cooperating with the international initiatives, e.g. NDLTD, Cybertheses, MathDissInternational or PhysDiss (Dobratz, 2001).

## **Conclusion**

A digital library of theses and dissertations augurs well for Africa, as research information can be made readily available where it is needed. The present efforts at the continental level are thus a step in the right direction.

The NDLTD holds immense benefits for Africa and the AAU should seek to become a member of the network. Also, the AAU should vigorously encourage national ETD initiatives.

Presently the digitisation of the content of TDs in South Africa is uncoordinated with varied approaches taken by different projects. It is time to implement the knowledge of early innovators in the electronic theses and dissertations (ETD) arena to develop a cooperative and interactive national programme.

The graduates of the higher education system of the country will be required to work in an information society that is largely digital. It is therefore important that our educational institutions should equip the graduates with the capabilities to be able to participate effectively in this information society. Requiring students to submit digital TDs is one of the ways of fostering the information technology skills of the students. Fostering such ability will contribute to the building of digital libraries.

Thank you.

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## **Appendix 2**

### **Problems experienced with Electronic Theses' digital files submitted by students**

1. Missing parts of the thesis, e.g. questionnaires, content pages.
2. Missing graphics. For example, where photos and maps are pasted on to the paper copy. This is a common problem.
3. Graphics included in the text sometimes cause errors in the conversion process to PDF.
4. If unusual fonts are used in the thesis, then the font file should be included in the files submitted. For example, music symbols used in the text of a Computer Music thesis require a special font file.



5. Formatting problems are common. Page numbering often differs from paper copies; probably caused by different page settings on students' and the Library's word processor.
6. Sometimes the files submitted are not the final versions, or more than one version of the same file are included.
7. If a thesis is split into several files and the sequence is not obvious from the file listing, a key to the file names and the sequence should be included with the disk.
8. Theses created in older or DOS-based versions of WordPerfect do not convert successfully into WordPerfect 8.
9. Corrupt disks or files.