Abstract
This article describes developments relating to the management and use of electronic theses and dissertations, with particular reference to the DART-Europe E-theses Portal. This Portal provides free access to a wide range of full text research theses: currently access to over 400,000 titles from over 530 universities in 27 countries. It allows researchers to locate open access theses and it provides a means for universities to publicise the research output of their students.

DART-Europe: Access to European Research Theses

Susan COPELAND*

Abstract: Articolul descrie dezvoltările cu privire la managementul și utilizarea tezelor și disertațiilor în format electronic, cu accent pe Portalul DART-Europe E-theses. Acest portal oferă acces liber la o largă varietate de teze de cercetare în text integral: în prezent, el oferă acces la mai bine de 400.000 de titluri, din mai mult de 530 de universități, din 27 de țări. Portalul permite cercetătorilor să localizeze tezele în acces liber și pune la dispoziție universităților mijloace de a publica rezultatele cercetărilor studenților lor.

(teze/disertații în format electronic; ETDs; DART-Europe; Open Access)

Background

Access to the wealth of research findings and data included in doctoral theses and dissertations has become considerably easier in recent years. Just two decades ago it was a slow and laborious task to obtain a copy of a PhD thesis. Even in countries where a centralised thesis service existed, attempting to acquire such material was a daunting prospect. In Britain, for example, such an endeavour might involve checking an index and abstracts of theses held at the British Library, consulting with colleagues to find out who pays for an Inter-Library Loan, completing paperwork to request such a loan, waiting for notification that the item had arrived, obtaining a microfilm version of the thesis for use in a cumbersome machine within the library, reading the work to find relevant sections, and making sure all required notes were made before returning the item. A considerable amount of library staff time was involved in the process of obtaining a physical copy of a thesis and, on receipt, the reader was faced with limitations on where and when the item could be read. Given the effort involved, few researchers felt comfortable about requesting a large number of theses via Inter-Library Loan services. Moreover, given the work and costs involved, there could be an awkward atmosphere if a researcher took a quick look at a borrowed thesis and realised straight away that the item was not as relevant as the abstract suggested and that it was therefore not required. With such uncertainty of the relevance of the content, when this could only be judged on the abstract and keywords, there was even less incentive for researchers to travel long distances to access theses that were only available for consultation within the institution in which they had been produced. There was seldom consideration of locating and accessing theses produced in other countries; many researchers did not even know what PhD work in their subject area had been written up and submitted to an overseas university in the form of a thesis.

Recent developments

Over the last twenty years the means of locating and accessing theses and dissertations has undergone a radical transformation. It has improved significantly with the production of digital theses, the creation of open access repositories, and changes in institutional policies to encourage PhD students to allow their work to be made freely available over the Internet. Most doctoral students now produce electronic theses or dissertations (ETDs) so little additional work is required

* Dr. Susan Copeland is Information Resource Manager at the Robert Gordon University in Aberdeen, Scotland. E-mail s.copeland@rgu.ac.uk

to make their work accessible to everyone. While many universities now encourage the submission of ETDs for inclusion in an institutional repository, an increasing number have made this mandatory.

Making a thesis available via a Web page allows users across the world to access it at any time. However, the inclusion of a thesis in an institutional repository (IR) brings added benefits. A well-managed repository, and discussion between theses authors and the librarians who maintain the IRs, can ensure appropriate attention is given to aspects such as metadata and copyright. A major advantage is gained when bibliographic details of the ETDs in an IR are harvested by an appropriate aggregator and the theses are accessible to users via a recognised portal.

The DART-Europe E-theses Portal

Such a portal was developed by the Access Division of the **Ligue des Bibliothèques Européennes de Recherche (LIBER)** to provide access to the full-text of European research theses. This 'DART-Europe E-theses Portal' (http://www.dart-europe.eu/) is now maintained through the work of DART-Europe: a partnership of research libraries and library consortia which work together to improve global access to European research theses. DART-Europe is administered by UCL (University College London) and it provides partners with a networking forum to share ideas about ETD developments. There is no membership fee but potential partners are encouraged to become familiar with the information for contributors described on their Web page (http://www.dart-europe.eu/contributors/how.php) and to sign the 'DART-Europe Partnership Agreement' available from the same URL.

DART-Europe aims to collect details of doctoral theses and research masters theses (i.e. those which have no taught component). The theses must be available on open access: free for users to download and read. Metadata is collected using OAI-PMH. It is harvested in simple OAI Dublin Core format. The website (http://www.dart-europe.eu/About/documents/docs.php) contains a range of publications and presentations which illustrate the development of the service (since its foundation in 2005) and provide examples of activities relating to ETD developments in selected member institutions.

The geographical spread of use of the DART-Europe E-theses Portal

New items are added to the DART-Europe E-theses Portal every day: the portal collects data from repositories across Europe. The speed of growth is evidenced by the statistics on the 'search' page. In an article published in 2010, Moyle stated that, at that time, there were over 120,000 theses approved by 200 universities, sourced from repositories in 15 European countries (*Moyle, M.* (2010) *DART-Europe: pan-European networking and services.* **ALISS Quarterly.** 5 (2) pp. 37-40). Later the same year members of DART-Europe issued publicity celebrating the listing over 150,000 theses from over 250 European universities. Currently, in April 2013, the portal provides access to over 400,000 open access research theses from 535 universities located in 27 European countries. The pace of growth is significant. On 23rd April 2013 the portal listed **406,763** research theses to which access was available. Just 24 hours later, this figure had risen to 406,941. By the 25th April the figure was 408,233.

The numbers of theses to which the portal provides access varies significantly by country. On 23rd April 2013 the figures were as follows:

Country	Number of Theses		Country	Number of Theses
Austria	154		Latvia	257
Belgium	3,558		Lithuania	1,853
Bulgaria	45		Netherlands	52,309
Cyprus	1,593		Norway	4,175
Czech Republic	1		Poland	3,067

Denmark	2,552		Portugal	5,023
Estonia	3,837		Serbia	1
Finland	7,007		Slovenia	1,060
France	35,533		Spain	30,884
Germany	144,272		Sweden	20,679
Greece	30,255		Switzerland	4,065
Hungary	3,164		UK	32,581
Ireland	2,223		Ukraine	1
Italy	16,616			

The range of places from where users are accessing the material is also diverse. Figures produced for members of DART-Europe for the period of a year from September 2010 (as detailed above, the time at which the volume of content grew to be in excess of 150,000 titles) indicated high levels of use from locations across the world. The top twenty countries in terms of the number of visits then were as follows:

Country	Number of visits		Country	Number of visits
Germany	30,912		Iran	4,789
Greece	19,456		Portugal	4,280
Spain	15,442		Hungary	3,648
France	15,097		Algeria	3,187
United Kingdom	13,735		Serbia	3,162
Poland	13,228		Canada	2,999
United States	11,076		Sweden	2,846
Lithuania	10,059		Finland	2,708
Italy	6,895		Belgium	2,637
India	5,383		Turkey	2,523

The historical spread of content in the DART-Europe E-theses Portal

Users of the portal may browse by country, by institution or by year. Clicking on a title brings up the full bibliographic record of the thesis – in the form provided by the individual institutions and as received by the DART-Europe harvester. Most include an abstract and keywords and there is always a link to the full text held at the repository from where the record has come. The home page displays details of new theses (on a constantly changing list) and the items most downloaded in the past seven days are also shown. The content ranges across a very wide range of subjects and, since it includes items that have been digitised retrospectively, it also contains theses produced over a very lengthy timespan. At the time of writing (April 2013) there is access to nearly 6,000 theses that have been submitted so far in 2013. There is also access to theses and dissertations written as long ago as the sixteenth and seventeenth centuries. The oldest, by Hugo de Groot at Leiden University, dates from 1597. The second oldest dates from 1602 ('Propositiones nonnullae de artium liberalium causis'): a work in Latin submitted to the Uppsala University in Sweden). Many early examples are from the University of Tartu in Estonia, such as a work by Johann Skytte submitted in 1604.

The range of dates covered provides an indication of the variety of material to which DART-Europe provides access: from historical works which would have been extremely difficult to access in the past (without travelling to different universities to use their 'special collections') through to cutting edge research which has not yet been published in journal articles. The number of theses being included each year is rising. At the time of writing there are 8,954 theses with a submission date of 2000; 11,373 dating from 2001; 13,528 from 2002; 16,043 from 2003; 19,343 from 2004; and 22,397 from 2005. In each year from 2008 until the present there over 30,000 submitted theses are listed.

Submission Dates	Number
16th century	1
17th century	49
18th century	15
19th century	1,408
20th century	62,012
2000 - 2009	226,963
2010 – 2012	111,138

Contributors to DART-Europe

Access to the vast wealth of high quality research contained within these theses is due to the efforts of the members of DART-Europe and the contributing institutions, in particular the administration provided by UCL. The DART-Europe partnership has no external funders: the achievements are due to the willingness of the members to contribute their time, resources and expertise. The contributing institutions benefit from having the research output of their students publicised via a respected organisation and the wider research community benefits from having easy access to theses from key European universities.

DART-Europe does not accept ETDs from individual graduates. Content is made available via institutional repositories or consortia. Alongside individual universities, contributors to DART-Europe include BICTEL/e (Belgium), the Danish National Research Database, DissOnline (Germany), PIONIER (Poland), PLEIADI (Italy), RCAAP (Portugal), STAR (France) and TDX (Spain) amongst others.

The DART-Europe E-theses Portal in a global context

The number of organisations working with DART-Europe continues to grow and contact from prospective contributors is welcome. At present there are still many European ETDs that are not accessible via this portal. For example, 'EThOS'(http://ethos.bl.uk), the Electronic Theses Online Service provided by the British Library, which allows searching across over 300,000 theses, is not yet linked to DART-Europe. A DART-Europe Web page provides a clear list of its contributors (http://www.dart-europe.eu/contributors/list.php) which makes it easy for researchers to identify which other ETD collections they may need to search separately to locate as many relevant titles as possible.

DART-Europe's provision of access to European theses is just one of a range of global initiatives to enable researchers to find and read ETDs on open access. The 'Find ETDs' Web page of the Networked Digital Library of Theses and Dissertations (NDLTD) contains useful information about worldwide search tools (http://www.ndltd.org/find). Alongside DART-Europe, it lists other portals such as the 'Biblioteca Digital Brasileirade Teses e Dissertações' and 'Cybertesis'. This NDLTD Web page also includes two search tools which provide access the NDLTD Union Catalog: 'Scirus ETD Search' and 'VTLS Visualizer'. Working together, the NDLTD OCLC, VTLS and Scirus have produced a means of locating and accessing hundreds of thousands of ETDs.

Members of DART-Europe are liaising with organisations in many countries to ensure that as many European ETDs as possible are publicised via their portal and to ensure that their service is highlighted at global level (e.g. through inclusion on the NDLTD Web page list of useful ETD search tools). High usage levels indicate that, now that access to doctoral theses is easy, researchers are keen to use ETD portals to find such material. In an age of both budget restrictions and increasing expectations about free access to publicly funded research, DART-Europe is one of a range of services providing much-needed open access to a wealth of research data. Its Web page contains much useful information for librarians who want to publicise this resource to their users and also for those who might consider having theses produced at their own institution included in the service.