The National Graduate Research Database

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Abstract

A National Graduate Research Database (NGRDB) for Australia was first discussed at a meeting of the Deans/Directors of Graduate Studies in November 1995. Since then, the database has been established by staff of Southern Cross University and made accessible free to all postgraduate research students of all Australian universities via the World Wide Web. The NGRDB offers the opportunity for all postgraduate research students who have access to the Internet to interact with other postgraduate students with similar research interests. In particular, it will help to bridge the gap for research students working at a distance. This paper traces the development of the NGRDB and discusses the opportunities and challenges, that it offers to students and universities. The NGRDB is located on the WWW at http://www.scu.edu.au/ngrdb

Introduction

Isolation is a perennial problem for many distance education students – not only from university staff and resources but also from their student colleagues. This can be a particular problem for postgraduate research students who are not part of a group of students with common enrolment in a coursework subject. The National Graduate Research Database was established specifically to address the problem of isolation for research students by building a bridge to enable a student to identify other students with common research interests.

Although this facility has now been available for at least six months the adoption of this new technology has been slow. This paper seeks to disseminate information about a potentially important national resource for postgraduate students and others with an interest in scholarship and research.

Origin of the database

A National Graduate Research Database (NGRDB) for Australia was first discussed at a meeting of the Deans/Directors of Graduate Studies in November 1995 at the suggestion of Professor Peter Baverstock. The idea was a consequence of several discussions re “How can we help external Postgraduate students?” Evidence suggested that the biggest problem faced by these students was isolation. The database was seen as a way to help reduce this isolation by providing a meeting point on the World Wide Web.
Purpose of the database

The NGRDB which is sponsored by the Graduate Research College of Southern Cross University in conjunction with the University of Melbourne Postgraduate Association, is a freely searchable database of postgraduate research being undertaken in Australia – a facility which is free to all postgraduate research students of Australian universities.

Student participation is voluntary but highly encouraged. The benefits of entering information about research being performed include:

- research collaboration is enhanced because students or academic staff can identify other researchers in related areas;
- easy contact with other researchers is enabled via e-mail and phone;
- links to home pages (of individual researchers or research groups) can provide access to recent papers or topical information;
- industry can use the database to find research in progress in specific areas;
- employers can use the database to look for prospective employees;
- undergraduate students can search for research units or supervisors in areas of interest for postgraduate studies; and
- the media can find research groups for analysis or comment

Features of the database which enhance its utility include:

- the database can be accessed without a password via the World Wide Web, nationally or internationally;
- participation is free;
- personal data is secure students own their own record;
- the database is self-cleansing so that superseded data will not accumulate;
- the database is updated by the students themselves.
**Endorsements for NGRDB**

Following are the pertinent dates for endorsement of the database:

- Draft copy presented at the April 1996 Directors of Graduate Studies (DOGS) conference, then again in September 1996 where it was endorsed.
- Presented to the Pro Vice Chancellors (PVC) / Deputy Vice Chancellors (DVC) (Research) National Meeting in Canberra in May 1996, then again in September 1996 where it was endorsed.
- Presented to PVC/DVC(R) Queensland meeting in April 1996 and then again in November 1996 where it was endorsed.
- Presented to and unanimously endorsed by the Council of Australian Postgraduate Associations (CAPA) at the Annual General Meeting in December 1996.
- Currently waiting on approval from the Australian Vice-Chancellors’ Committee (AVCC).

**History of development**

In May 1996 a Queensland company, Web Ventures, was contracted to design the NGRDB. Shortly thereafter the database was installed on the WWW server at Southern Cross University.

Due to technical problems, the database was unable to function properly. The Graduate Research College of Southern Cross University hired a team of third-year computing students to bring the system online.

The team of students, J. Northey, A. Ryan and W.J. Smart, redesigned the look and feel of the database and overcame the technical difficulties involved in operating a database on the World Wide Web. The NGRDB began operation in October, 1996.

In December of the same year W.J. Smart was appointed Database Administrator to coordinate and maintain the NGRDB.
**Response of universities**

The following universities are now connected or in the process of connecting to the National Graduate Research Database:

<table>
<thead>
<tr>
<th>University</th>
<th>No. of Records*</th>
<th>No. of Active Records*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Queensland University</td>
<td>31</td>
<td>14</td>
</tr>
<tr>
<td>Edith Cowan University</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Southern Cross University</td>
<td>264</td>
<td>61</td>
</tr>
<tr>
<td>University of Ballarat</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>University of Canberra</td>
<td>60</td>
<td>5</td>
</tr>
<tr>
<td>University of New England</td>
<td>205</td>
<td>17</td>
</tr>
</tbody>
</table>

*As of 20/09/1997

Central Queensland University, Edith Cowan University and University of Ballarat have adopted the Web entry method of creating records. That is, the local administrator is actually creating and entering the details of each student. University of Canberra, University of New England and Southern Cross University have used the mass insertion technique.

University of New England provided its student list on 10 July 1997 and records were created by 13 July, but uptake has been slow. University of Canberra warned students that connection would take approximately one month, but their records were available within two days from 9 August 1997.

The following universities are having on-going discussions or have approached the Database Administrator about involvement:

- University of Melbourne
- University of Queensland
- Monash University
- La Trobe University
- Northern Territory University
- Swinburne University of Technology
- University of Technology, Sydney
- University of Western Sydney
Content of the database: Visible fields

Each student’s record in the database contains the following visible fields:

**Name:** Full name - surname first, given names last. The student cannot edit this field of the database.

**Telephone:** Telephone number at work or home if the student desires.

**Facsimile:** Facsimile number.

**Email address:** E-mail address - this field has an embedded HTML mailto: construct added to it so e-mail can be generated when viewing the record.

**Research Topic:** The title and brief description of the research work.

**FOR Code:** The Field of Research (FOR) code that best fits the research being undertaken. The database help page contains a full listing of these codes.

**Award Sought:** The title of the award undertaken, e.g. Master of Science.

**Award Type:** This is a fixed choice of PhD, Masters or Doctor.

**Supervisor:** The name of the student’s supervisor.

**Start Date:** The date on which student’s work on the project was initiated.

**Abstract:** An abstract of the work being undertaken. The student may wish to include an HTML link to further pages on another server. This field is 1,500 characters in length.

**Current Status:** The description of the current status of the project. The student may wish to include an HTML link to further pages on another server. This field is 1,500 characters in length.

**Group:** The name of the student’s research group/unit/centre, e.g. The Solar Energy Research Group.

**Faculty:** The name of the student’s school or faculty.

**University:** The name of the student’s university. The student may wish to include an HTML link to the university's home page.

**Address:** A postal mail address. Street address goes in the first field and Suburb/City goes in the second field.

**Postcode:** Four digit Australia Post postcode.
Content of the database: Invisible fields

Each student's record in the database contains the following invisible fields:

**University Password**: This is the password that will be required to edit the record as a privileged user. Note: leaving this field blank will allow any user to change the contents and is not advisable!

**Researcher Password**: This is the password that will be required to edit the record by the student who "owns" that record. Note: leaving this field blank will allow any user to change the contents and is not advisable!

**Activation Control**: When editing in privileged mode, a checkbox allows the Site Administrator to control the activation of the record. However, normally only skeleton details are entered and the record is left inactive ie invisible, waiting for the student to fill in the rest of the information. Subsequently the student can use the check box to make the record accessible to the public.

Content of the database: HTML embedding

When entering data in fields, HTML tags can be used to produce certain effects when data is displayed. For example:

**Bold text** <b>text to bold</b>

**Italic** <i>text to make italic</i>

**Embedding an image**  &lt;img src="path to image" alt="text"&gt;

e.g. &lt;img src="http://www.my.server.au/pictures/me.gif" alt="my gif"&gt;

**A link to another page** &lt;a href="path to page">Visible link text&lt;/a&gt;

e.g. &lt;a href="http://www.my.server.au/mythesis/thesis.html">My Thesis&lt;/a&gt;

Note: Only the link text is stored in the database, the actual image files and/or linked HTML pages cannot be stored by the database.
Technical details

Hardware: The database is resident on a Sun “Sparcstation 5”. The operating system is Solaris 2.4. The General C compiler (gcc) version is 2.7.2.2, and the Sparcstation is running NSCA apache as the Web server.

Software: The National Graduate Research Database uses as its database a MiniSQL version 1.016. This product was developed by Hughes Technology Pty Ltd and is provided free to educational institutions. Database to HTML conversion is performed by a product called AccessDB developed by Webventures Pty. Ltd.

Data entry procedures - University

When a university decides to connect to the NGRDB, a local Site Administrator is appointed. The Database Administrator assigns a university identifier and password to this Site Administrator. This allows the Site Administrator to access a password-protected URL in order to perform the following tasks for the university:

1. Create a new record;
2. Edit a record;
3. Delete a record.

Due to privacy regulations, universities may not give out student information to other students or to the public without the student’s permission. This requires the university to seek permission from their postgraduate students to create an individual record for the Database. This has been accomplished by performing a mail-out to students asking them whether they wish to join the NGRDB (See Appendix A for sample from University of New England).
Once the university has a list of students wishing to join the NGRDB, data entry can be performed by one of two methods.

**Web entry**

The Site Administrator creates a record for each student via the WWW. This is a time-consuming method of entry and suits only small numbers of entries.

**Mass insertion to database**

The Site Administrator forwards the list of students to the Database Administrator in the form of a text file. This file contains for each student:

- Last name (in upper case)
- First name
- Middle name (one only)
- Award sought by student (from list of PhD., Masters and Doctor)
- Date of Birth (which is *never* displayed on the WWW)

From this list the Data Administrator creates skeleton records for each student. These records are inactive and invisible until the student accesses the record for the first time. Specifications for this text file are available from the NGRDB administrator.

It is recommended that universities incorporate the request for permission to supply data to the Database as part of their enrollment procedure for new postgraduate students.
Data entry procedures - Student

Once a student’s record has been created (see Data entry procedures - University), the student is free to enter data and activate the record.

How to Enter Data for the First Time – Instructions to Students

• Open the URL http://www.scu.edu.au/ngrdb. On the NGRDB Home page, read the instructions on Entering Data for the First Time (information is on the Help page).
• Go back to the Start page and select Edit or use the Edit button on the Help page.
• Leave the record number field empty (the number is unknown to you). In the Researcher Password Field, enter your SURNAME (all capitals no punctuation except hyphens) followed by a space and your Date of Birth (in the format dd/mm/yy including leading zeros, e.g. 01/01/58)
• You can then enter your data. Remember to change your password to your own personal choice or your data will not be entered to the system. Take careful note of your password.
• Warning: Do not go to another WWW page to look for information without saving your entry, even if it is incomplete, otherwise you may lose what you have entered.
• Go back to the Start page and search for your record by your name (one of the drop down menu choices) and check for typographical errors and presentation.
• Take careful note of both your record number and your password.
• If you experience any difficulties contact your Site Administrator (listed on currently connected universities page) or the Database Administrator (bottom of all NGRDB pages).

How to Edit Your Record after the first time

• Go to the WWW site at http://www.scu.edu.au/ngrdb
• On the Home page of the Database choose the Edit button.
• On the Edit selected entry page enter your record number and your password in the appropriate locations. You may now edit your record.
• If you have misplaced your record number, use the search button on the Start page to look for your surname.
• If you have lost your password contact your Site Administrator (listed on currently connected universities page) or the Database Administrator (bottom of all NGRDB pages).
**Student response**

The Database administrator has received several e-mail messages from students who study at distance and would like to be on the Database. Two examples follow:

“Dear Sirs/Mesdames,
I tried searching by university and got nil returns for Deakin University...let me know and I will enter the information about my own research. The idea of the database is great and should be very helpful if it is used by people, especially people such as myself who study by distance education or part-time.

Many thanks,
XXXX XXXXXX
Taiwan.”

“I read about your site in Campus Review...tried to find how to add my details
Can you help. I'm isolated and would appreciate this type of service.
XXXXX XXXXX
(PhD at UTS in marketing)”

**Research Databases on the Web**

To the authors’ knowledge, no other free on-line database within Australia provides the opportunities for contact and wealth of knowledge, which the National Graduate Research Database provides by its very design. However, there are several other sites within Australia that provide specific information to postgraduate students:

- Australasian Political Studies Association postgraduate database. Web address http://www.ssn.flinders.edu.au/politics/apsa2/data1.htm. This database is hosted by The Department of Politics, Flinders University, South Australia.
- SPIN - Sponsored Programs Information Network - a database of research funding opportunities. Web address http://spin.web.unsw.edu.au. The Research Office, University of NSW, administers this database which is funded by the Australian Vice-Chancellors’ Committee.
• Australian Rural Research In Progress (ARRIP). Unfortunately this database is only available to subscribers to OZLINE and is not available on the World Wide Web.

A similar database, Community of Science, in the USA provides free access to all active research projects funded by The National Institutes of Health, the National Science Foundation, the Small Business Innovation Research and the United States Department of Agriculture. Web address: http://www.cos.gdb.org

**The future**

Over the next year the sponsors plan to:
• Continue including as many universities as possible on the Database.
• Create a news page to provide information to all members of the Database.
• List the Database with the most popular local and international Web Search Engines.

Over the next few years it is proposed to expand the coverage of research activities by listing abstracts of completed Postgraduate research (Abstract on Line). This would logically lead to a scenario where Postgraduate theses *in toto* will available on line (Thesis on Line).

**Conclusion**

The NGRDB has the potential to contribute to Australia becoming “the clever country” by assisting postgraduate research students to interact and build on completed and current research. In particular it has the potential to bridge the gaps for students working in isolation and to reduce considerably the time taken for transfer of knowledge. However, it does require a critical mass of participants to become an accepted way of reporting research. To achieve this will require the support and co-operation of all Australian universities and their postgraduate research students. The slow response by universities to date appears to be due to a fear of undertaking an apparently overwhelming workload. However, the experience of the currently participating universities is that the workload is quite manageable.

Australians have been noted for their rapid adoption of communication technology. If the National Graduate Research Database receives similar support, there will be a resultant benefit to Australian students and their research.
Appendix A

7 May 1997

Dear PhD Candidate

The National Graduate Research Database (NGRDB)

An Opportunity to Promote Your Research Activity to an International Audience

The University of New England, in conjunction initially with six other Australian universities, has adopted a World Wide Web solution to the need to publicize the work of its Doctoral research candidates through membership of the National Graduate Research Database (NGRDB).

All PhD students enrolled at UNE are entitled to lodge details of their research project, including a thesis outline, contact details and other related information, on the NGRDB once they have been given approved access. You remain responsible for your own data - from original entry of information, through updating of information during the course of your candidature if necessary, to editing of the final thesis abstract.

The Database can be accessed at the following Web address for viewing:
http://www.scu.edu.au/ngrdb/

In order to receive access to the NGRDB you must complete the enclosed release of information form and return it in the reply paid envelope to the PhD Office at UNE. The University will then provide the NGRDB Administrator with a student-sanctioned and confidential electronic list of PhD student names and dates of birth to establish approved access. Soon thereafter, participating students will be provided with password access to the Database and will be invited to enter their own data.

The opportunity to use the NGRDB as a site for registering and updating your research in progress, and lodging an abstract of the completed product, is a voluntary one. You are under no obligation to participate, although the University believes there are considerable advantages for PhD students in promoting their research activity to the community at large. There are no subscription or other direct costs for students participating in the NGRDB project.

The NGRDB project is a national initiative which was unanimously endorsed at the last general meeting of the Council of Australian Postgraduate Associations (CAPA), and has also been endorsed by the Australian Council of Deans of Graduate Studies and the AVCC Committee of Pro vice-chancellors (Research).

If you wish to participate in the NGRDB project, please complete the enclosed release of information form and return it in the reply paid envelope to Research Services at UNE by not later than 6 June 1997. Some weeks after this closing date, you will receive instructions on how to access the Database and how to enter your own research project details.

UNIVERSITY OF NEW ENGLAND
The National Graduate Research Database (NGRDB)

Release of Information Form

Student Number:........... __________________________________

LAST NAME (all capitals):........ ________________________________

First name (capital 1st letter only):.. ____________________________

Date of Birth (with leading zeros):.. __.. __.. __..DD-MM-YY

I hereby give consent to the University of New England to release my first and last names and date of birth in a confidential electronic format to the NGRDB Administrator so that I may gain approved access to the Database.

__________________________.............. _______________________
Signature..............................  Date

Please complete this form and return it in the reply paid envelope to the PhD Office at UNE by not later than 6 June1997.