Data management outreach and professional development at Monash University:

Lessons learned and future directions
- Recap on eResearch Australasia 2009
- Some specific tactics you can consider – some insights from psychology, change management and information literacy
- Lots of Monash examples, showing how an outreach program can evolve and improve
What we say

What our researchers might be thinking (and sometimes even say out loud)
Framing/redefinition

Tactic: Think about how you are framing or defining data management. Would a different approach work better?

I am too busy for this

I just want to do my research

Go away and leave me alone!

[yawn]

Hang on, good data management is essential to my career as a researcher!

blah blah issues blah blah concerns blah blah compliance blah blah policy blah blah standards blah blah

blah blah publication opportunities blah blah grants blah blah citations blah blah reputation blah blah showcase your research
This early presentation slide framed data management as a set of issues.

This current version of our ‘Managing your research data’ leaflet frames data management as a set of concerns.
These early slides had the Code as the first in a series about why research data management matters.

Following one of these presentations, our Associate Dean of Research for Law suggested the order of these slides was not the best for engaging researchers. He was right!
This revised version moves research funding, publication opportunities and citation counts up-front.

The ‘National policy’ slide is re-named ‘Responsible research’.

Text is reduced and images of news stories, journal articles and funding documents are included.
Researchers should ensure that data is stored and backed-up properly, that appropriate metadata and documentation are created, and that ownership and other legal aspects are understood by everyone involved in the research.

Things aren’t perfect but I am doing the best that I can with the time and resources that I have. Anything more is just not possible right now.

Tactic: Instead of informing or describing, ask researchers to imagine in detail a scenario.

What would it be like for you as a researcher if everyone managed their research data really well?

What would it be like? Is that really possible?
This revised version of our standard presentation covered many of the same “issues” or “concerns” but posed an ideal situation and asked each researcher to consider their own responsibilities.

This was getting closer to what we wanted but was still not quite there yet.
This current version also asks researchers to imagine an ideal data world, but shifts the emphasis from individuals to research communities. *I, me,* and *my* are replaced with *we, our* and *us.*

This has proven a powerful starter for group discussions about how better data management might benefit the team / unit / discipline.
When we interviewed Prof. X, she suggested that we contact you to see if you could participate as well.

Your research was listed in a report from Research Master as recently completed and we are hoping you can participate.

Who are you and why are you looking up my details anyway?

Tactic: At the end of every interview or consultation, ask the researcher to suggest others you should talk with. Also use your own networks.

So Prof. X is involved in this project? If she thinks it worthwhile, I will at least consider it.

Your subject librarian Y suggested you would be a good person from your school for us to contact.
Many researchers from Monash and other institutions are showcasing their data through Research Data Australia. Have you considered joining them?

We are talking to researchers like yourself to see whether you would consider promoting your research data through this project.

I am keen to promote my research but this sounds like a bit of a hassle. Why should I bother?

Tactic: Seek out examples that clearly demonstrate what colleagues, collaborators and competitors are doing.

I don’t want to be left out. If [name of guru or rival] is doing this then I want to do it too.
The first page of this all-purpose information sheet for our ANDS-funded project includes a screenshot of Research Data Australia as well as a live link to the site. These were included to demonstrate that a number of Monash researchers already have a presence within RDA.
As part of the scene-setting for interviews, we show researchers Monash’s collections in RDA as well as relevant search results from their area (tested earlier).
It is very important to comply with the data owner’s terms and conditions when you use third party data in your research.

The Code says that researchers must ensure that data is stored securely and backed up regularly.

Last year, one of our PhD students was faced with an unfortunate situation. She had obtained data from a third party without a written agreement and then......

We had a situation not that long ago where a laptop was stolen from a staff office and then......

Yeah, yeah, yeah, I already know this stuff is important …

Tactic: Support logical arguments with real-life stories that researchers can identify with.

I hope that never happens to me!

If I were in that situation, I would…
A 2010 supervisor accreditation workshop on intellectual property (IP) included a section on data ownership and re-use.

Slides outlining relevant policies were followed by three case studies from different disciplines.

The case studies given were real and recent, and they generated some lively discussion from supervisors.

**Case study – Science**
A post-doctoral researcher created a database of environmental measurements from many sources, including online data archives and tables in print publications. The research was commissioned by a local government agency that was so pleased with the work that it wanted to make the database available on its website. The post-doc had not recorded which parts of the database had been taken from which sources or what terms and conditions would apply to re-use.

**Case study – Humanities**
A HDR student is studying an aspect of film-making. She is planning to perform content analysis on copies of films that she has obtained from filmmakers directly and is also planning to analyse videos that are freely available on YouTube. The student wants to present results of her research at conferences and in publications, and screening excerpts from the films would be essential to her communication of her findings to other researchers in her discipline.
### Researcher Skill Development Framework

**LEVEL OF RESEARCHER AUTONOMY**

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
<th>Level 6</th>
<th>Level 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research is conducted at the level of a closed inquiry and requires a high degree of structure/guidance.</td>
<td>Research is conducted at the level of a closed inquiry and requires some structure/guidance.</td>
<td>Research is conducted independently at the level of a closed inquiry.</td>
<td>Research is conducted at the level of an open inquiry within structured guidelines.</td>
<td>Research is conducted at the level of an open inquiry within self-determined guidelines in line with the discipline.</td>
<td>Research informs others’ agendas.</td>
<td>Research enlarges field of inquiry.</td>
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**FACET OF RESEARCH**

<table>
<thead>
<tr>
<th>A. Embark on inquiry and determine a need for knowledge/understanding</th>
<th>B. Find/generate information/data using appropriate methodology</th>
<th>C. Evaluate Information/data and the inquiry process using simple prescribed criteria.</th>
<th>D. Students organise information collected and manage the research process</th>
<th>E. Synthesise and apply new knowledge</th>
<th>F. Communicate knowledge and the processes used to generate it, with an awareness of ethical, social and cultural issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduct investigations and determine a need for knowledge/understanding.</td>
<td>Collect and record information/data using a prescribed methodology from a prescribed source in which the information/data is clearly evident.</td>
<td>Evaluate Information/data and the inquiry process using criteria related to the aims of the inquiry.</td>
<td>Organise information/data and manage the research process according to a simple prescribed structure.</td>
<td>Synthesise and analyse information/data to reproduce existing knowledge in prescribed formats. Ask relevant, researchable questions.</td>
<td>Use major language and prescribed genre to demonstrate required knowledge and understanding for lecturer/teacher as the audience. Use a discipline-specific language and prescribed genre to demonstrate knowledge and understanding.</td>
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<tr>
<td>Confirm questions/topics generated by and implicit in a closed inquiry.</td>
<td>Collect and record information/data from selected sources using one of several prescribed methodologies.</td>
<td>Evaluate information/data and the inquiry process using criteria related to the aims of the inquiry.</td>
<td>Organise information/data and manage the research process according to a simple prescribed structure.</td>
<td>Use primary literature and theoretical frameworks to develop new knowledge and understanding.</td>
<td>Use the language of the discipline and appropriate genre to extend knowledge and understanding from a stated perspective for a specified audience.</td>
</tr>
<tr>
<td>Generate questions/answers/hypothesis framed within structured guidelines.</td>
<td>Collect and record self-determined information/data from selected sources, choosing or devising an appropriate methodology based on structured guidelines.</td>
<td>Evaluate information/data and the inquiry process using criteria related to the aims of the inquiry.</td>
<td>Organise information/data and manage the research process according to a simple prescribed structure.</td>
<td>Synthesise others’ concepts or interpretations to frame novel hypotheses. May also address substantial concerns of a community.</td>
<td>Use the language of the discipline, choosing appropriate genre and audience to extend knowledge and understanding, from diverse perspectives for a range of audiences.</td>
</tr>
<tr>
<td>Identify previously uncharted gaps in literature and articulate research directions in response to them.</td>
<td>Synthesise others’ methods to formulate novel methods/ methodologies of apply existing methods to novel applications.</td>
<td>Generate new methods/methodologies.</td>
<td>Synthesise others’ concepts or interpretations to frame novel hypotheses. May also address substantial concerns of a community.</td>
<td>Synthesise others’ concepts or interpretations to frame novel hypotheses. May also address substantial concerns of a community.</td>
<td>Contributes to, or changes the direction of, the communication within the discipline/field through publicly available communication of knowledge/understanding.</td>
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<tr>
<td>Articulate research directions that expand the field.</td>
<td>Generate new methods/methodologies.</td>
<td>Generate substantial research outcomes, so that ideas, practices or interpretations begin implemented by others.</td>
<td>Generate substantial research outcomes, so that ideas, practices or interpretations begin implemented by others.</td>
<td>Develop new concepts or interpretations that expand the field or discipline. May also address substantial concerns across communities.</td>
<td>Contributes to, or changes the direction of, the communication across disciplines/fields through publicly available communication of knowledge/understanding.</td>
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Many cycles can occur between Level I and Level VI or V during the stages of formal education. However, when the process of research begins to yield knowledge new to humanities, then the researcher is set to move towards Level VI and VII in the discipline.

Concept by John William and Kerry O’Sullivan, produced by Neil Comis, Centre for Learning and Professional Development. Levels VI and VII are adapted from Blamont (2006).

F. **Communicate**
knowledge and the processes used to generate it, with an awareness of ethical, social and cultural issues.

**Persuasive**

- Use the language of the discipline and appropriate genre to address knowledge and understanding gaps from several perspectives for a self-selected audience.
- Use the language of the discipline, choosing appropriate genre to extend knowledge and understanding from diverse perspectives for a range of audiences. New knowledge is publicly accessible.
- Contributes to, or changes the direction of, the conversation within the discipline/field through publicly-available communication of knowledge/understanding.
- Contributes to, or changes the direction of, the conversation across disciplines/fields through publicly-available communication of knowledge/understanding.
Multiple intelligences or learning styles

Data management is a very broad topic.

[And the way that topic is going to be covered today is through an interminable series of slides that I have already delivered twenty times this year…]

Tactics: Have sessions evaluated by people with experience in instructional design. Take their advice on board and develop activities for different styles of learning.

- Death by Powerpoint!
- You talk too much.
- I wish we were using the tools you are describing.
First foray into delivering some content online was an induction-level podcast (audio and slides only).

2-hour seminars for higher degree students cover a lot – 80 slides of mostly dense textual content. Some ‘tweaks’ to content have already improved things – introductions, discussion questions, an activity for third party copyright, and greater use of screenshot examples.

**Activity**
- Explore the terms and conditions for re-use of data from the following sources:
  - Australian Bureau of Statistics census data
  - Victoria Water Resource Data Warehouse
  - Bureau of Meteorology Climate Data
  - Worldwide Protein Databank
  - State Library of Victoria Picture Collection
  - OECD – SourceOECD

**Discussion**
- What kind of research are you doing?
- What types of data do you think you might generate?
We may also experiment with recording interviews. These can deliver much of the same content, but could make greater use of narrative. This format could also showcase researchers discussing their own data management practices.

We hope to make more use of online tutorials and demos to show rather than tell. These will take time to create, but can be delivered online as well as used in face-to-face sessions.
References


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