

## Outline

- Context: linking teaching & research
- Embedding research in the undergraduate curriculum at Massey
- The role of fieldwork
- Student perceptions
- Conclusions

## Linking teaching & research: why?

“What is distinctive about *higher* education is that there is a close interconnection between staff research and student learning”

Jenkins (2003:2)

“Teaching and research are closely interdependent and most of their teaching is done by people who are active in advancing knowledge.”

Education Amendment Act (1990, Section 162),  
definition of a university

## Linking teaching & research: how?

- I. Use of staff research data
- II. Development of appreciation of research in the subject
- III. Development of research skills
- IV. Completion of tailored assignments such as literature reviews
- V. Inquiry- or problem-based learning
- VI. Role as research assistants in staff projects

After Healey (2005)

## Linking teaching & research: how?

- Research-led teaching
  - content is directly based on specialist research interests of teaching staff
- Research-based teaching
  - papers are structured around or include inquiry-based activity
- Research-oriented teaching
  - attention is given to inquiry skills and the process of knowledge generation
- Research-informed teaching
  - draw on systematic inquiry into the learning process

After Griffiths (2004)


## Linking teaching & research: how?

- Boundaries often blurred...
- Teaching may be research-led/based/oriented and informed all at once.
  - Content directly based on staff research interests, structured around inquiry-based activity, developing inquiry skills & drawing on systematic inquiry into the learning process
- Example – Fieldwork: Alpine Physical Geography

### Embedding research: Physical Geography at Massey

**First Year: Introduction to Physical Geography**


- Staff research interests reflected in illustration
  - Develops appreciation of research in subject
- Essay assignment requires use of literature
  - Develops appreciation of research in subject
  - Develops research skills



### Embedding research: Physical Geography at Massey

**Second Year:**

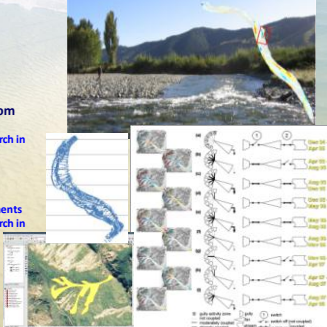
- Rivers & Slopes
- Climate Change & Natural Hazards
- Biogeography
- Glaciers & Glaciation
- Staff research interests reflected in illustrations and case studies
  - Develops appreciation of research in subject
  - Use of staff research
- Written assignments require more extensive use of literature
  - Completion of tailored assignments
  - Develops appreciation of research in subject
  - Develops research skills



### Embedding research: Physical Geography at Massey

**Third Year:**

- Fieldwork: Alpine Physical Geography
- Applied Field Geomorphology
- Quaternary Biogeography
- River Dynamics
- Substantial content derived from staff research
  - Develops appreciation of research in subject
  - Use of staff research data
- Written assignments require extensive use of literature
  - Completion of tailored assignments
  - Develops appreciation of research in subject
  - Develops research skills
- Project work
  - IBL
  - Develops research skills
  - Use of staff research data



### The role of fieldwork in linking teaching & research

Fieldwork provides a medium to link teaching and research:

*“The linking of teaching and research in the field makes both activities more relevant, in that research informs and affects the teaching, and the teaching provides a reality check and critical appraisal of the research.”*

James (2003:16)

...but do students recognise this?

### The role of fieldwork in linking teaching & research

**First Year**

- ‘Cook’s Tour’ primarily illustrative



### The role of fieldwork in linking teaching & research

**Second Year**

- ‘Cook’s Tour’ illustrations using greater reference to research sites
- Learner inquiry



## The role of fieldwork in linking teaching & research

### Third Year

- Learner inquiry & IBL
- Linked to staff field research sites



## Student perceptions: is teaching linked to research?

Current Postgraduate students (all home-grown) asked in a brainstorming session:

1. To what extent do you think research is embedded in the undergraduate papers we teach?
2. To what extent did your undergraduate experiences of any research (e.g. case study material, assignments & fieldtrips) help inform your decision to pursue postgraduate study?

## Student perceptions: is teaching linked to research?

### Key answers

- Lecturers initially perceived as teachers at 1<sup>st</sup> year, researchers by 3<sup>rd</sup> year, facilitated by:
  - use of own research in teaching
  - fieldwork
- Research inputs & fieldwork made research...
  - 'real', 'accessible', 'achievable', especially in response to 3<sup>rd</sup> year papers.
- Overwhelmingly perceived research to be thoroughly embedded in the undergraduate curriculum and most clearly so in field-based 300 level papers.
- Field-based papers provide a real taste of research, both in terms of their own inquiry-based learning and the technical skills learned as part of that inquiry.
- Third year fieldwork papers were also perceived to teach and clarify the research process.

## Conclusions:

### Fieldwork in Physical Geography at Massey

- Fieldwork plays a key role in linking teaching and research.
- Fieldwork can & does...
  - I. Use staff research data ✓
  - II. Develop an appreciation of research ✓
  - III. Develop research skills ✓
  - IV. Entail research-based assignments ✓
  - V. Utilise IBL ✓
  - VI. Provide a role as research assistants in staff projects ✓
- Fieldwork is strongly research-led/based/oriented & informed at advanced undergraduate levels.
- Field-based IBL is particularly valuable.

## Conclusions

- At Massey, student research has been stimulated by successful efforts to embed research in the curriculum and engage students with research using fieldwork.
- 2009 represented the largest cohort of postgraduate students in the Programme in over ten years.
- Honours and Masters students are working alongside staff on research projects.
- Ph.D. students are supervised by the lecturers who have taught and mentored them in research through their undergraduate career.



## Conclusions

- "Research and teaching may be successfully linked to the mutual benefit of both academic staff and students...this is particularly relevant where fieldwork is involved. Staff research that is fed into teaching may stimulate student research, which, in turn, feeds back into staff research and teaching, and so on."

(Edwards, 2003:20).

We agree

