Integrating research and teaching: strategies for engaging students in research and dissemination

Prof. Helen Walkington
Outline

‘Research inclusive’ education Why&How?
– Nexus and partnership frameworks
– Effective practices

Student Authoring
– Research dissemination, within and beyond the curriculum
– Journals, conferences

Essential ingredients – what works?
Research inclusive education – Why?

• ‘Research and inquiry is not just for those who choose to pursue an academic career. It is central to professional life in the 21st century’ (Brew, 2007: 7)

• Self-authorship - the central goal of HE in the 21st Century (Baxter-Magolda, 2004)

• ‘The ecology of a university depends on a deep and abiding understanding that inquiry, investigation and discovery are at the heart of the enterprise … everyone at a university should be a discoverer, a learner’ (Boyer Commission, 1998: 9)

• Undergraduate research – HIP (Kuh 2008)
‘I have to break down things like ‘how do you write an introduction section?’ or ‘how do you pull together discussion?’ The more minute details I get down to with [my students], the easier it is for me to realise ways to write my own research.’ [Psychology]

‘My [individual grant] research was less interesting and less rich because it was mostly coming out of my head alone… Six heads are better than one!’ [Neuroscience]

‘It was as much an exploration for me as it was for them. When I am open with students about what I know and what I don’t know about what I’m pursuing, the students get much more interested in that question themselves, we can find out together.’ [Architecture]
The research - teaching nexus
based on Healey 2005; Levy & Petrulis 2011

**Research tutored:**
“exploring others’ ideas”

**Research led:**
“gathering information”

**Research based:**
“making discoveries”
“free”
“real research”

**Research oriented:**
“evidencing and developing my own ideas”

Content | Process
--------|--------
Participant

Audience
Navigating the research landscape

4. Student initiated, consulting university staff – potential for student to become ‘expert’ (e.g. dissertation)

3. Staff initiated research, decisions shared with students

2. Students are informed and consulted

1. Students are given research problems - guided research
International strategies to strengthen the research – teaching nexus

1. Interview researchers (guest lecturers, academics)
2. Student centred active learning (PBL, simulations, focus on conceptual understanding rather than memorising content)
3. Teach research methods by doing research
4. Scaffold the reading process (journal clubs)
5. Scaffold the writing process (peer review)
6. Scaffold research design (support the framing of enquiry)
7. Authentic research (*pro bono*, consultancy, live projects)
8. Authentic audience (public web pages, conferences, open journal)
9. Reflective assessment of learning process (e-portfolio’s)
Sweepstake!

TESCO onions come from 3 farms:
New Zealand, Spain, England

Conventional production (not organic)
Rank in order of lowest to highest carbon footprint
Impactful and curiosity driven student research

Food miles? Carbon labelling? Buy Global?

- **What** questions can your students ask?
- **Why** does it interest them?
- **Who** (outside) cares about the results?

“Dissemination of results is an essential and integral part of the research process.” (Boyer Commission, 1998: 24)

Contributes to engaged citizenship
Dedicated online open access student research collection

radar.brookes.ac.uk  Get published! collection
Different definitions of homelessness have implications, deciding who is and who isn’t eligible for assistance (Neale, 1997).
“My research scrutinises the life-cycle of hand-crafted wooden furniture to find areas for improvement in raw material processing, manufacturing, use, and the end-of-life scenario.”

BA furniture design and making
User-centred design of mobile apps for TBI

“A new way of tracking patient rehabilitation after brain injury through the use of a mobile app”

BSc Computer Science
But my students aren’t ready...

Live project pedagogy (Day 1 Year 1)

Tutor-mediated student publishing to a public blog and photo-sharing space (Flickr)
But in my discipline...

Chemistry: the history of Chlorine

Teaching in Higher Education

Turning an undergraduate class into a professional research community
Hasok Chang*
University College London, UK

I describe here an ongoing pilot project aimed at a full integration of teaching and research at the undergraduate level. Our chief innovation is the mechanism of inheritance: each year students receive a body of work produced by the previous group of students and make improvements and additions to it; this process can be repeated until publishable materials are produced. This is part of a system of learning that enables students to function as a real and evolving community of researchers.

Connecting a research experience to society

Recommendations:

**RECYCLING**
- Good provision
- Remove barriers
- Make it easy

**WASTE MINIMISATION**
- Connect people to create a norm
- Education and information

Accommodation; Box provision; Habit

Environmental knowledge; Environmental concern

Curriculum design - student research journal

Welcome to Geoverse
the undergraduate research journal for geography.
Journals as learning spaces

Ownership

Understanding

Creativity

Within the curriculum

Achievement

Applying constructive criticism

Critical evaluation

CV

Academic recognition

Further dialogue

Motivation to publish more

and Beyond
Multidisciplinary Research Conferences

Results:
Language;
Liminal space;
Empowerment;
An authentic experience;
Escaping institutional and disciplinary ‘bubbles.’

‘It is completely different to presenting within university because you can be questioned by people you are not studying with, who are likely to have expertise in other areas relevant to your research. This can result in *bidirectional exchange of information* in which both myself presenting, and the student asking the questions, gain greater knowledge of the subject area.’ (R52)
Principles for student research dissemination

- Embed ‘publication’ into degree programmes
- Use student research findings in the curriculum
- Engage students in the publication process (e.g. editors/reviewers, sourcing articles, conference / event organisation, marketing and promotion)
- Use appropriate technology (wiki, blog…)
- Scaffold publication opportunities (build confidence)
Top down AND Bottom up!

- Institutional priority and support;
- Resourcing for research experiences;
- Curriculum design of research pathways at programme level;
- In-house innovation recognised through reward and promotion;
- Engage with external events;
- Celebrate student success
Conclusion

- Personalise and professionalise the curriculum through providing research and dissemination opportunities
- Structure authentic research experiences for students to build confidence within and beyond the curriculum
- Institutional research cultures and strategies can be inclusive of students as researchers, start early
- The research – teaching nexus is a good starting point for networking and sharing practice across an institution
Questions?

hwalkington@brookes.ac.uk

@ProfHWalkington