Engaging students in research and inquiry: from first year to final year

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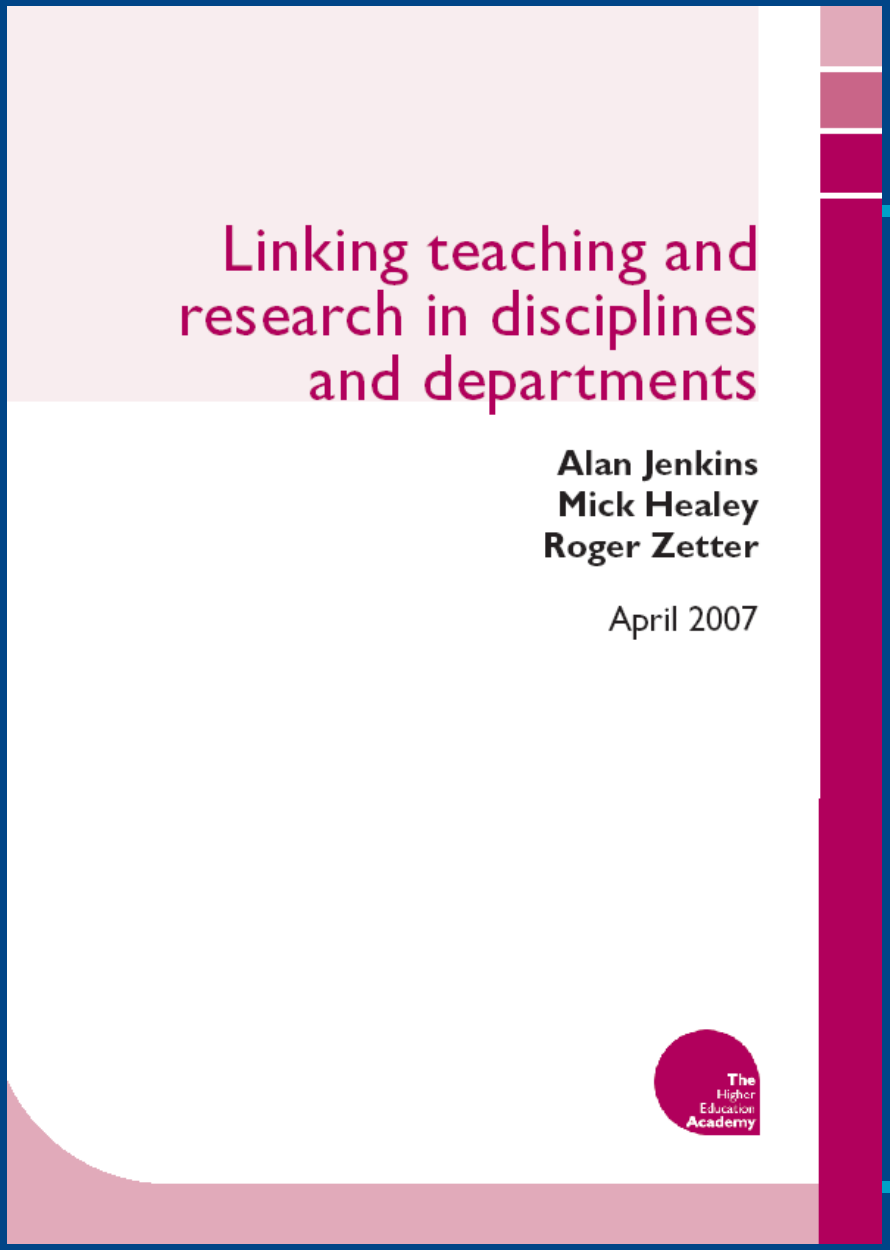
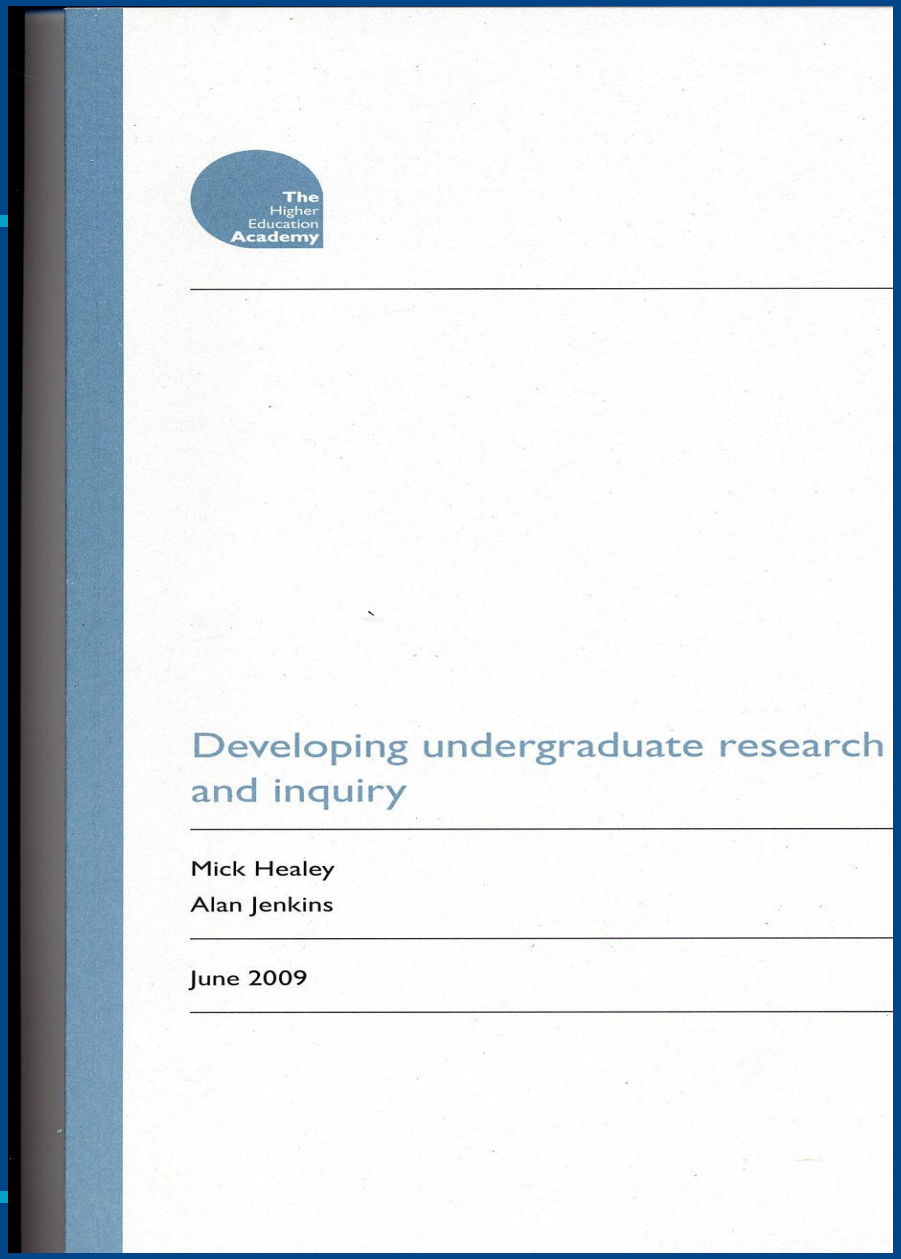
"We need to encourage universities and colleges to explore new models of curriculum. … There are several models that we might explore. They should all: … Incorporate research-based study for undergraduates"
(Paul Ramsden, 2008)

Brief Biography

- Educational Developer, originally a Geographer
- HE Consultant and Researcher
- Emeritus Professor University of Gloucestershire; Honorary Professor University of Queensland; Adjunct Professor Macquarie University; Visiting Professor University Technology Sydney; Visiting Professor University of Wales, Newport;
- Previously Director Centre for Active Learning
- Ex-VP for Europe International Society for Scholarship of Teaching and Learning
- National Teaching Fellow and Senior Fellow HE Academy
- Geography Advisor to HE Academy Subject Centre for Geography, Earth and Environmental Sciences (2000-10)
- Advisor on linking research and teaching to Canadian Federal Government (2006); National Academy for Integration of Research, Teaching and Learning (Ireland) (2007-11); Australian Learning and Teaching Council Project on the teaching-research nexus (2006-08); and League of European Research Universities (2009)
- Evaluator to three ALTC projects and two NTFS projects
- Research interests: scholarship of teaching; linking research and teaching; active learning; developing an inclusive curriculum; supporting the learning of disabled students; bringing about change in teaching and learning at institutional and department levels


Linking teaching and research in disciplines and departments
Alan Jenkins
Mick Healey
Roger Zetter
April 2007
The Higher Education Academy


The Higher Education Academy
Developing undergraduate research and inquiry
Mick Healey
Alan Jenkins
June 2009

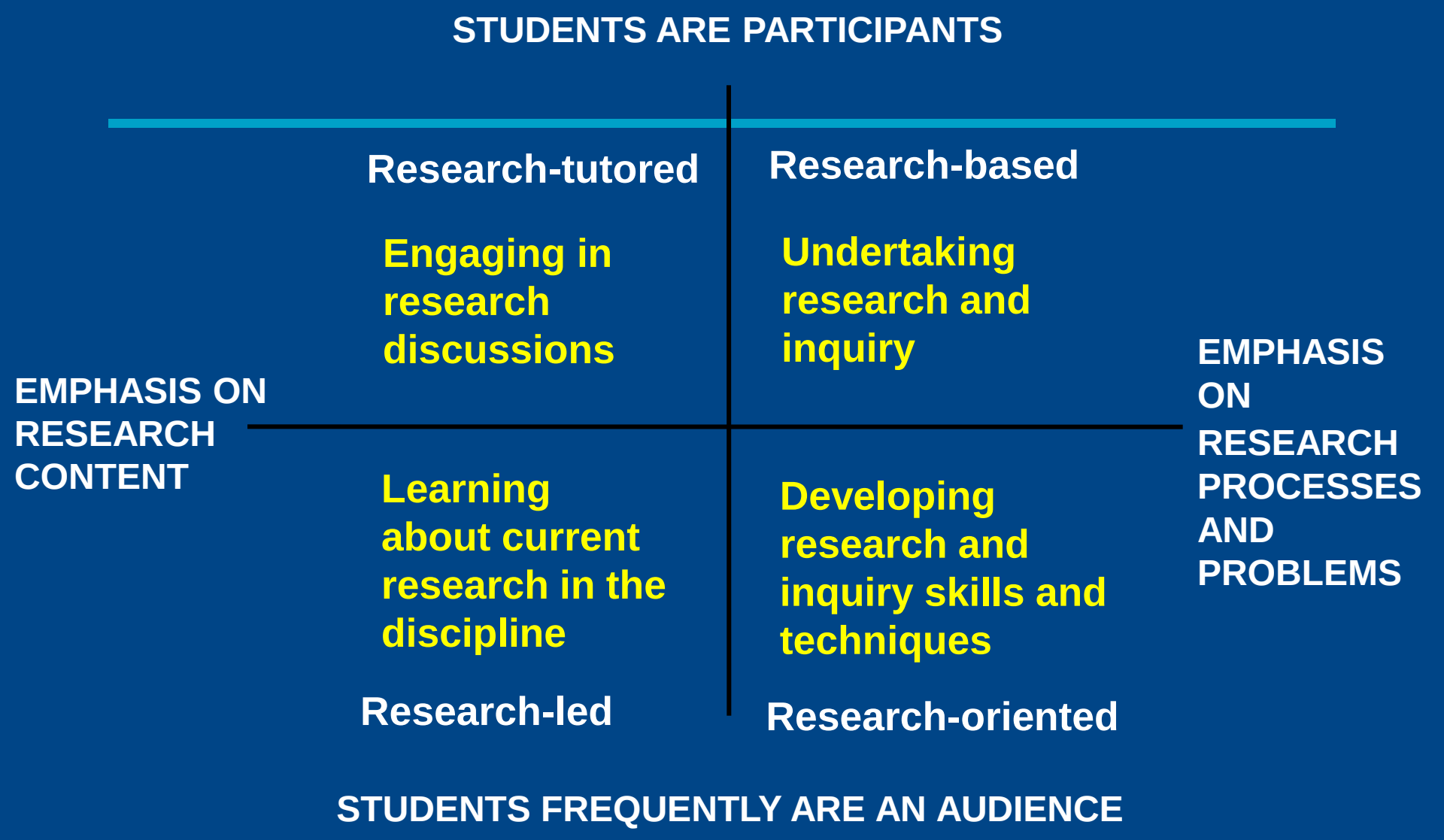
Our argument: a 'research active curriculum'

"*All* undergraduate students in *all* higher education institutions should experience learning through, and about, research and inquiry. … We argue, as does much recent US experience, that such curricular experience should and can be mainstreamed for all or many students through a *research-active curriculum*. We argue that this can be achieved through structured interventions at course team, departmental, institutional and national levels" *(Healey and Jenkins, 2009, 3).*

Engaging students in research and inquiry

OLT project on 'Teaching Research - Evaluation and Assessment Strategies for Undergraduate Research Experiences (URE) (TREASURE)' (2011-13) PI: Anna Wilson, ANU

- Incorporating reflection into URE
- Enhancing students learn about nature and processes of science



Curriculum design and the research-teaching nexus

(based on Healey, 2005, 70)

The elephant in the room

What do we mean by research and inquiry?

A key distinction is between whether the inquiry is discovering knowledge which is largely new to society or the inquiry is a way of students learning largely existing knowledge which is new to them.

Strategies for engaging students at the beginning of their courses

In pairs, each skim read at least ONE different year one case study (1.1 – 1.11 pp3-6).

Discuss whether and how any of the ideas may be amended for application in your contexts.

4 minutes

Engaging students in final year and capstone courses

Skim read at least one of the case studies 2.1-2.12 (pp6-10) and share what you found interesting with the person sitting next to you.

4 minutes

Rethinking final year dissertations and capstone projects

Alternative or additional projects, many of which may be employment or community-based, are required to meet the needs of *all* students regardless of background, discipline or life goals.

http://insight.glos.ac.uk/tli/activities/ntf/creativehops/pages/default.aspx

Engaging students throughout their course

See 3.1-3.12 (pp10-14), for example:

- **3.1 Co-ordinated interventions in Zoology** at University of Tasmania, Australia
- **3.8 Auditing and developing student research skills** at the University of Adelaide, Australia and the University of Reading, UK
- **3.9 Build on research of previous students** in history of science at UCL, UK

Dimensions of undergraduate research

Student, process centred	Outcome, product centred
Student initiated	Faculty initiated
Output centred	Student centred
Original to discipline	Original to student
Research skills	Employability skills
Senior/Honours students	All students
Outside Curriculum	Inside curriculum
Collaborative	Individual
Pure	Applied
National/Professional	Local/Community
Discipline based	Multi-or interdisciplinary
Discipline based	SoTL
Based in University	Based outside university

(Adapted from Beckham and Hensel, 2009 and added to by Healey and Jenkins)

The developmental journey of the student

University curricula need to support student and citizen development from

"*absolute knowing* [where] students view knowledge as certain; their role is to obtain it from authorities … (to) *contextual knowing* [where] students believe that knowledge is constructed in a context based on judgement of evidence; their role is to exchange and compare perspectives, think through problems, and integrate and apply knowledge"

(Baxter Magolda, 1992, 75).

The developmental journey of the student

Developmental Level	Student traits
Reliance on external references [*Foundations*]	Knowledge viewed as certain Reliance on authorities as source of knowledge Externally defined value system and identity
At the crossroads [*Intermediate Learning*]	Evolving awareness of multiple perspectives and uncertainty Evolving awareness of own values and identity and of limitations of dependent relationships
Self-authorship [*Capstone*]	Awareness of knowledge as contextual Development of internal belief system and sense of self capacity to engage in authentic, interdependent relationships

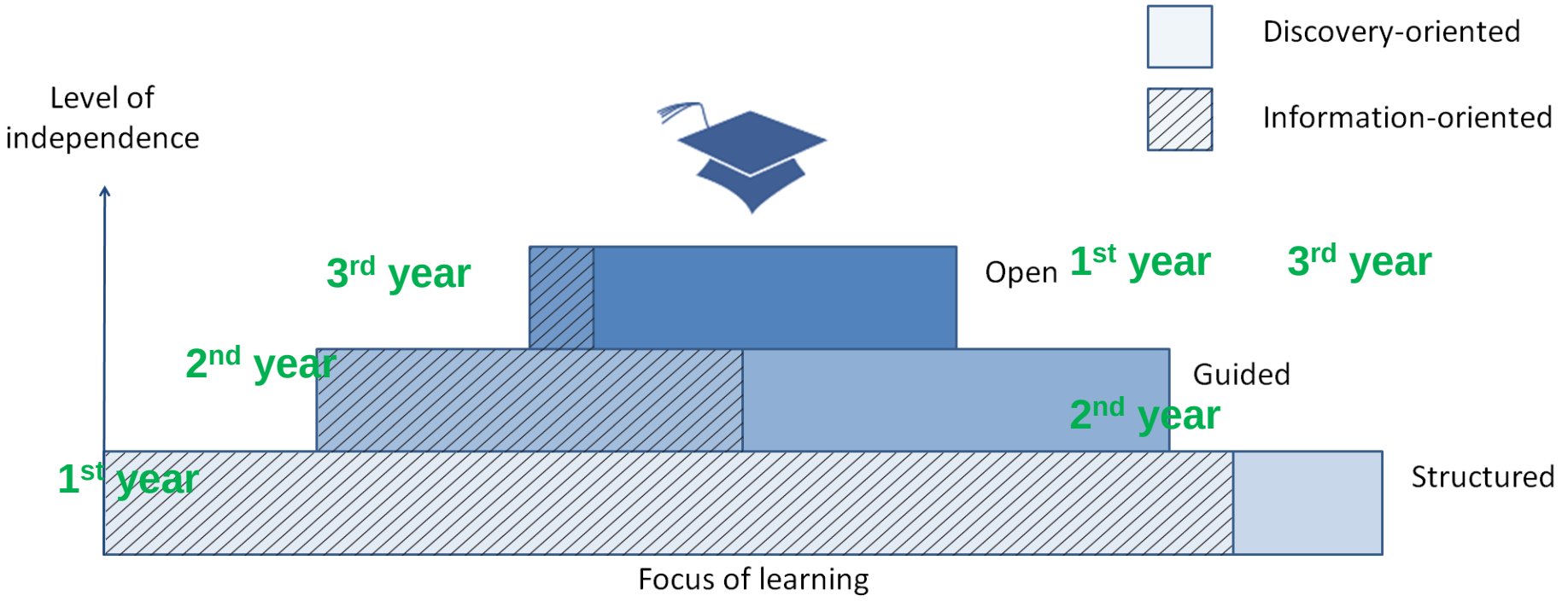
Source: Hodge *et al.* (2008)

Modes of IBL

- Importance of scaffolding provided by lecturer and development of independence in learner
- **Structured** – where lecturers provide an issue or problem and an outline for addressing it
- **Guided** – where lecturers provide questions to stimulate inquiry but students are self-directed in terms of exploring these questions
- **Open** – where students formulate the questions themselves as well as going through the full inquiry cycle

(after Staver and Bay, 1987)

Scaffolding inquiry throughout a degree



Engaging students in research and inquiry: Conclusions

“Undergraduate research should not substitute for but rather augment a rich menu of well-designed, investigative experiences that are scaffolded throughout the curriculum, from first to senior year ...”

Laurssen et al. (2012, p.37)

Engaging students in research and inquiry: Conclusions

If engaging students in research and inquiry is to be truly integrated into HE then the nature of higher education will need to be reconceptualised.

> **"universities need to move towards creating inclusive scholarly knowledge-building communities. … The notion of inclusive scholarly knowledge-building communities invites us to consider new ideas about who the scholars are in universities and how they might work in partnership."** (Brew, 2007, 4)

There is a need to do more thinking 'outside the box'

THE END

For more pictures and a 1.5 min movie of Tess see:

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