
**Linking discipline-based research
and teaching to benefit student
learning**

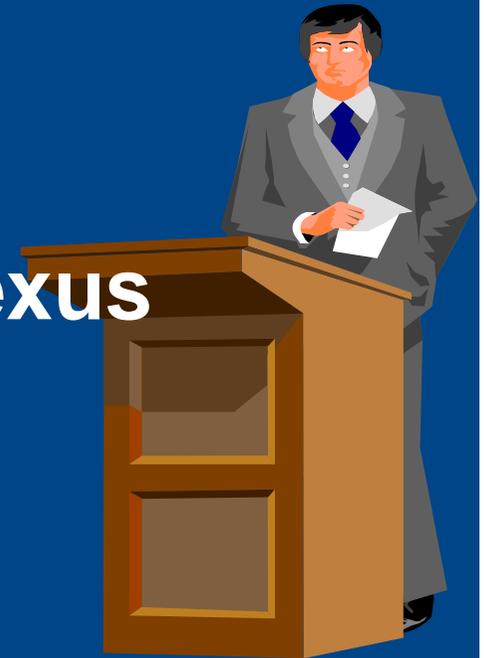
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Brief Biography

- **Economic geographer**
 - **Director Geography Discipline Network (GDN)**
 - **Co-Director Centre for Active Learning in Geography, Environment and Related Disciplines**
 - **Co-Director ESRC TLRP Project on Disabled Students' Learning**
 - **HE Academy Accreditor and elected member of Council**
 - **Geography Advisor to Academy Subject Centre for Geography, Earth and Environmental Sciences**
 - **VP for Europe International Society for Scholarship of Teaching and Learning**
 - **National Teaching Fellow**
 - **Research interests: scholarship of teaching; linking research and teaching; active learning; developing an inclusive curriculum for disabled students**
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Linking research and teaching

1. Linking research and teaching
2. Disciplinary perspectives
3. Institutional perspectives
4. Issues in developing R&T nexus
5. Conclusion



Linking research and teaching

“We are all researchers now ... Teaching and research are becoming ever more intimately related ... In a ‘knowledge society’ all students – certainly all graduates – have to be researchers. Not only are they engaged in the production of knowledge; they must also be educated to cope with the risks and uncertainties generated by the advance of science”

(Scott 2002, 13)

“... universities should treat learning as not yet wholly solved problems and hence always in research mode”

(Humboldt 1810, translated 1970, quoted by Elton 2005, 110)

Linking research and teaching

“It is not teaching but the student experience that should be the focus of the teaching research nexus”

(Prosser, 2006)

"Involving students in inquiry - in research - is a way of improving their learning, motivating them more. After all, what motivates large numbers of academics is engaging in the excitement of research. Bringing research and teaching together is a way of enhancing the motivation of both academics and students"

(Brew, in Jenkins *et al*, 2003)

Different ways of linking R&T

- Learning about others' research
 - Learning to do research – research methods
 - Learning in research mode – enquiry based
 - Pedagogic research – enquiring and reflecting on learning
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Linking research and teaching: different views

- Topic on linking research and teaching has generated much debate, some of it fairly emotive and polarised (Table 2)
 - Many people hold the view that a key characteristic of universities is where research and teaching are brought together
 - Some claim that the best researchers are usually the best teachers (e.g. Cooke, 1998)
 - Others dispute this claim (e.g. Jenkins, 2000); many refer to examples of excellent researchers who are poor teachers and vice versa
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Linking research and teaching: different conceptions of research

Research is oriented towards: ↓	Research aims to: ↓	The researcher is present to, or the focus of, awareness	The researcher is absent from, or incidental to, awareness
External products	Produce an outcome	Trading view	Domino view
Internal processes	Understand	Journey view	Layer view

FIG. 1. Relationships between conceptions of research.

Linking research and teaching: different conceptions of teaching

**Information transfer / teacher focused
approach**

**Conceptual change / student focused
approach**

Prosser and Trigwell (1999)

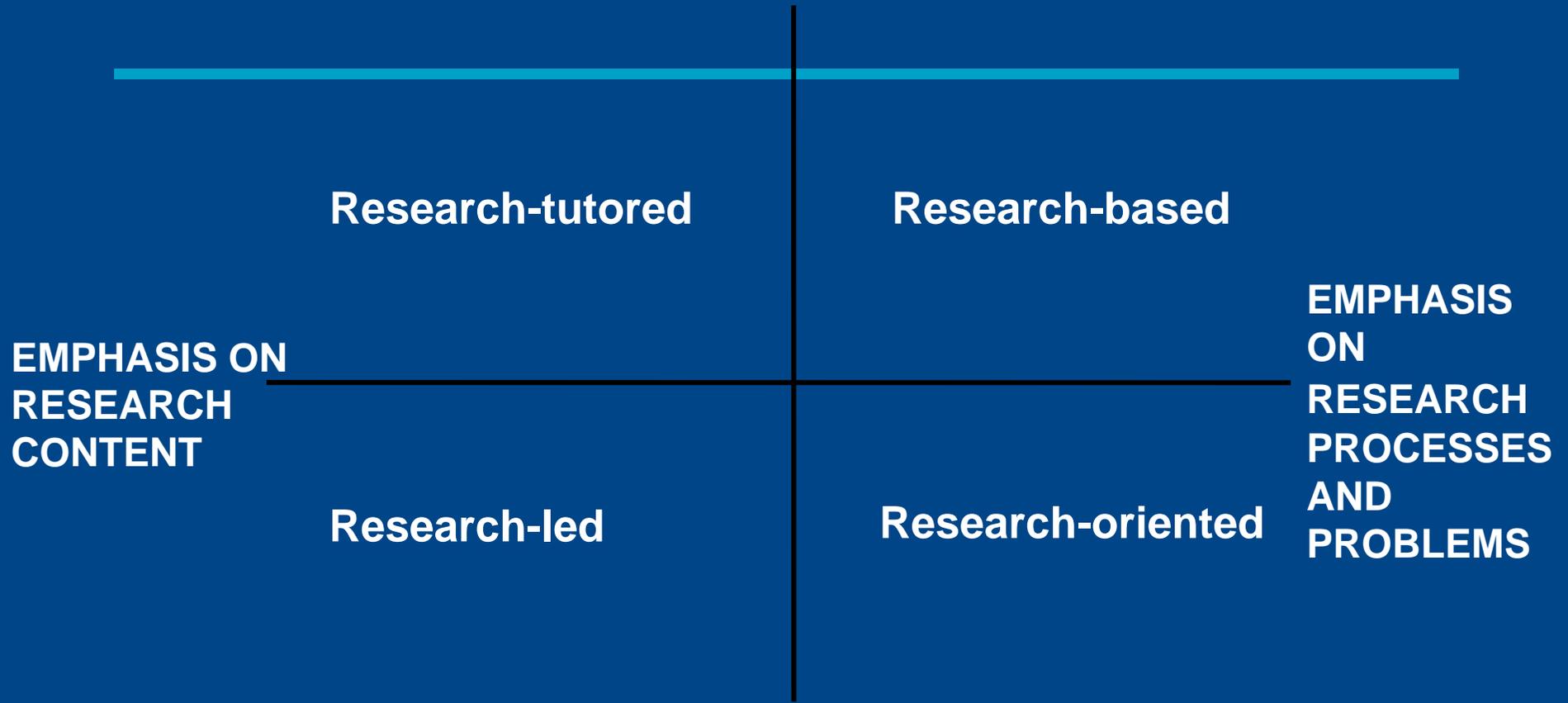
Linking research and teaching: Conceptual compatibilities

Trading view of research and information
transmission approach to teaching

Journey view of research and conceptual
change approach to teaching

Trowler and Wareham (2007)

STUDENTS AS PARTICIPANTS



STUDENTS AS AUDIENCE

Curriculum design and the research-teaching nexus

Linking research and teaching: disciplinary perspectives

A discipline-based approach is important in studying the research-teaching nexus because the nature of knowledge construction and research methods differ between disciplines

Different ways of linking R&T: disciplinary perspectives

A key issue:

How may the linkages between research and teaching be developed to enhance the benefit for student learning?

In pairs each skim read the abstracts for ONE different group of DISCIPLINES pp.8-20 OR some of the DEPARTMENT case studies pp21-25. Discuss whether any of the ideas may be amended for application in your context

5 minutes

Linking research and teaching: disciplinary perspectives

Linking teaching and research through the disciplines
Higher Education Academy Subject Centre projects:

Biosciences

Geography, Earth and Environmental Sciences

Health Sciences and Practice

Hospitality, Leisure, Sport and Tourism

Law

<http://www.brookes.ac.uk/genericlink/>

Current HE Academy (SNAS) project covering most of
the remaining subject centres

Linking research and teaching: disciplinary perspectives

Variation by discipline group

Subject content – more difficult in ‘hard’ disciplines than ‘soft’

Social processes – working with staff as part of a research team more common in ‘hard’ disciplines than ‘soft’

Role of professional bodies – danger of ‘curriculum creep’ where accredit entry into profession

Students experience of learning in a research environment: Physics

What is research?	Breaking new ground; moving forward; exploration and discovery
How visible is it?	Laboratories and machinery (ie tools) but often behind closed doors
Where is it located?	Out there; at a higher level
Who does it?	Lecturers

Source: Robertson and Blackler (2006)

Students experience of learning in a research environment: Geography

What is research?	Gathering information in the world; answering a question
How visible is it?	Most visible in the field
Where is it located?	Out there in the field
Who does it?	Lecturers and (increasingly over time) students

Source: Robertson and Blackler (2006)

Students experience of learning in a research environment: English

What is research?	Looking into; gathering; putting it together; a focus of interest
How visible is it?	Not tangibly visible but apparent in the dialogue
Where is it located?	In the library; in the head
Who does it?	Lecturers and students

Source: Robertson and Blackler (2006)

Linking research and teaching: institutional perspectives

**Skim read the abstracts for ONE group of
INSTITUTIONS pp25-32**

**In pairs, discuss whether any of the ideas
may be amended for application here**

5 minutes

**For a framework for analysing institutional
strategies see end of handout p45**

Linking research and teaching: issues in developing R&T nexus

- How much do your u/g students know about the research which goes on in your department?
 - What opportunities are there for students to present / publish / celebrate their research?
 - Is research-based learning primarily for honours and graduate students?
 - Is research-based learning for all students or a highly selected group?
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Students' perceptions of research

A comparison of over 500 final year students' perceptions of research in Alberta, Royal Holloway and Gloucestershire found (Table 5):

- **Students agreed that being involved in research activities is beneficial**
 - **Students do not perceive the development of their research skills**
 - **Communication is one of the issues that we need to address – language used can exclude**
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Students' perceptions of research:

- About three-quarters of the items followed our hypothesis (particularly about the *awareness* of research)
 - Those where the hypothesis did not hold up were mainly in the *experiences* with doing research, where there were no significant differences
 - Regardless of institution, there is the perception amongst students that learning in an inquiry or research-based mode is beneficial
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Students' perceptions of research:

- Trigwell (2007) examined 306 students' perceptions of their learning benefits from a research-stimulated environment in physics and English in 8 low and high RAE-rated departments
 - He found a strong positive relationship with adopting a deep approach to learning which was independent of discipline and RAE rating
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Strategies for linking Research and teaching

In groups of twos and threes identify **ONE** possible strategy or practice that you would like:

EITHER to introduce in your department

OR for the University to implement

Linking research and teaching: Conclusions

- Nature of the linkage between teaching and research is complex and contested
 - Adopting a broader definition of research than is currently common is a way forward (Boyer *et al.*), which should benefit the learning of students in institutions with a range of different missions
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Linking research and teaching: Conclusions

Barnett (2003: 157) suggests that there are many pressures that are pulling research and teaching apart:

“The twentieth century saw the university change from a site in which teaching and research stood in a reasonably comfortable relationship with each other to one in which they became mutually antagonistic”.

Putting greater emphasis on actively engaging students with research, suitably adapted to recognise the variation and complexity of constructing knowledge in different disciplines, is one way of re-linking them in the twenty-first century.

Linking research and teaching: Conclusions

If an active learning strategy is to become common place in higher education generally then the nature of higher education itself will need to be reconceptualised so that staff and students work together in what Brew (2003, 12) calls “academic communities of practice”. This she argues:

“means sharing power and it means being open to challenge” (p.16)

There is a need to do more thinking ‘outside the box’.

Linking research and teaching to benefit student learning

THE END

Thank You
