Developing Teaching and Learning Programmes for New Lecturers in Higher Education to allow for exploration of the link between research and teaching: a collaborative UK/Canadian Project

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1. Introduction and Rationale for the Project

The significance of the link between research and teaching has become increasingly important within debates on higher education in the UK. The Higher Education Research Forum, chaired by Sir Graeme Davies, has highlighted the need for both research intensive and non-research intensive institutions to maximise the potential of students learning about research "ranging from vicarious exposure to the current research of their teachers through to the immediate impact of being researchers" (HERF, 2004). A significant body of work now exists across a number of countries exploring possible theoretical and conceptual issues of the integration of teaching and research (Rowland, 1996, Elton, 2001, Brew, 2006). There has also been a focus on defining approaches to the integration of research, teaching and learning with general agreement on four main approaches: learning about others' research; learning to do research – research methods; learning through the research process – enquiry based learning; and pedagogic research – enquiring and reflecting on learning (Brew, 2006; Healey, 2005a; Jenkins *et al.*, 2003).

There can be little doubt that UK higher education funding policies have served to increasingly differentiate the higher education sector and further fragment academic work, particularly in relation to research and teaching activities. The HEFCE research funding to universities has served to differentiate the sector by ensuring that a small elite group of universities gain the majority of the research funding leaving many institutions with little or no funding for research. Many universities, however, continue to put effort into engaging in the 'research game' despite often very little financial gain (Lucas, 2006). In terms of universities and departments there is clear evidence that funding policies and particularly the RAE has served to fragment academic work and differentiate between 'researchers' and 'teachers' whilst undermining the teaching work being done as significantly less important than research (McNay, 1997; McNay, 2003; Lucas, 2006; Sikes, 2006; Young, 2006).

The White Paper (2003) made the case that some universities could be 'teaching only' (DES, 2003). The high cost of research, particularly in the sciences and medicine can lead to the overly simplistic economic reductionist argument that only a small number of elite research-intensive universities can be funded for research. But this argument perhaps misses the point that there are a whole variety of ways of interpreting what it means to engage in research (and scholarship) which is not reducible simply to the high resource intensive model of medicine and the sciences where the apex of research is pure research or the scholarship of discovery (Boyer, 1990). The Hong Kong RAE (similar to that of the UK) utilises all four of Boyer's scholarship categories, the scholarship of discovery, application, integration and teaching

to evaluate the research work being conducted in university departments, with an attempt to recognise and value each form of scholarship.

Policies in England and Scotland have been somewhat different in relation to research and teaching. The arguments for 'teaching only' universities in England have been counterbalanced to some extent by recent initiatives such as the research-informed teaching fund which exists to provide extra resources for institutions (who are not research intensive) to ensure that their teaching is informed by new research. There are also Centres for Excellence in Teaching and Learning (CETLs) and in particular The Reinvention Centre based at Universities of Warwick and Oxford Brookes, which actively endorses linking research and teaching and in particular, active undergraduate student involvement in research.

However, the reason why so much is spent attempting to justify the link between research and teaching in academic work is primarily that UK government policy and funding of higher education has and continues to drive a wedge between the dual activities of research and teaching both across and within institutions (Deem & Lucas, 2007). Much research evidence has shown how funding polices have impacted on universities such that research has been prioritised often to the detriment of teaching (McNay, 1997; McNay, 2003; Lucas, 2006).

One way forward, however, is to start to re-think the perceived duality of teaching and research roles to focus more on knowledge and knowledge communities (Scott, 2004; Brew, 2006). Brew (2006) argues that there is a need to move beyond the divide of research and teaching towards a more integrated view of the development within universities of "inclusive scholarly knowledge-building communities of practice" (Brew, 2006: 180). She argues, following Barnett (2000) that university teaching and learning in an age of 'supercomplexity' is required to "prepare students for a world which is uncertain, supercomplex, unpredictable…" (Brew, 2006: 180). The language of linking research and teaching becomes transformed as research and teaching become inseparable and suffused into the idea of 'knowledge work' (Scott, 2004). Scott (2004) argues that "…in a knowledge society we have all become to some degree, knowledge workers (or, at any rate knowledgeable actors)…(as) a result the role of dedicated specialised 'knowledge' institutions like universities is changed, even challenged – because all institutions have to be knowledge organisations…" (Scott, 2004: 13). The common point to be made is that the production and communication of knowledge cannot easily be separated and the debates on the future development of higher education institutions need to reflect this rather that remaining ossified in polarising research and teaching as two separate activities.

One possible forum, which may be significant for encouraging the perception and experience of the integration of research and teaching roles are Teaching

and Learning Programmes in Higher Education. There is very little known about the extent to which, and the ways that, UK Advanced Certificate/Diploma programmes for teaching in higher education encourage academics to focus on the integration of their research and teaching roles, and how best to implement and maximise the potential of their research experience within the curriculum. Particularly for early career academics, this is perhaps an important forum for exploring this issue and the possibilities for integrating their research and teaching experience. There is a growing body of literature that explore issues of academic identity development and academic work life balance issues (Robertson and Bond, 2003, Colbeck, 1998, Deem and Lucas, forthcoming). Early career academics in particular may struggle with the tension between the demands of teaching and of research so this is an important group to look at in order to better understand the ways in which further integration of these roles can develop. It is also feasible that early career academics will bring innovatory and exciting ideas to the development of teaching and research links, which may help to rejuvenate practices within departments.

The concern here is with the experiences of these early career academics in terms of their conceptions and experiences of their research and teaching roles, their participation in the teaching and learning programmes and their developing ideas around the possible way in which their research and teaching are linked. Utilising a communities of practice model (Wenger, 2000), the interview data will be explored in relation to the enculturation of early career academics within *communities of practice*, their negotiation of *boundaries* and developing academic *identities* utilised in previous research (Lucas, 2007). This approach fits with a desire to move to a more socially situated understanding of the development of conceptions of teaching and of research that take into account the socio-cultural and also the socio-political context of these within institutions (Akerlind, 2003; Pickering 2006; Trowler & Wareham, 2007; Deem & Lucas, 2007). Participation within a teaching and learning programme, therefore, may be seen as only one part of a complex socio-cultural context within which early career academics negotiate their beliefs and conceptions of teaching, learning and research.

The aim of this project was to develop innovative materials and activities, and collect best practice examples that focus on the link between research and teaching that can be utilised within university Teaching and Learning in Higher Education programmes for new lecturers. A comparison between the UK and Canada was taken in order to provide an international perspective on this issue and to help develop materials that would be relevant in different national contexts. The materials and activities were also made available on-line to allow for easy access for course leaders in teaching and learning programmes who are interested in exploring the possibilities for linking research and teaching.

The aims of the project were;

- To explore the ways in which new academics perceive the teaching and research relationship and the extent to which they can articulate and demonstrate ways in which they link these two activities within their work
- To investigate the possibilities that new lecturers have to explore the link through their participation in institutional Teaching and Learning programmes in the UK and Canada and to gather their ideas for how they could be better supported in this through these programmes.
- To develop materials and activities, and collect best practice examples, that will allow new academics to explore the link between research and teaching in their work that can be utilised within institutional Teaching and Learning programmes in the UK, Canada and elsewhere.

2. Policy Contexts – UK and Canada

UK Context

Institutional programmes for development of teaching and learning and academic practice developed first in the late 1980s in the UK as a direct result of the Dearing report published in 1997. This has been fuelled by national initiatives aimed at enhancing the professionalisation and status of teaching and learning in UK HEIs. The Staff and Educational Development Association (SEDA) was responsible for initiating the accreditation of programmes in the 1990s. In the late 1990s the Institute for Learning and Teaching in Higher Education (ILTHE) further developed the accreditation process which was taken over by the Higher Education Academy (HEA) in 2004.

The *Future of Higher Education* (2003) White Paper called for programmes on teaching and learning to be mandatory for all new members of academic staff. The rationale behind this decision was that teaching should be viewed as a professional activity in its own right and that teachers should be equipped and supported in developing the skills necessary to fulfil this aspect of their role (DfES, 2003). Whilst mandatory programmes for new lecturers have not been implemented across all institutions in the UK, the development of the recently published national framework for standards in teaching and learning has facilitated this movement in HEIs (Universities UK, et al, 2004). Most HEIs in the UK have some mandatory development for new staff in teaching and learning and/or academic practice. The focus of these programmes to date has been on initial professional development for staff with formal continuing professional development typically following less formalised routes and focusing less on pedagogy (Kahn et al, 2006).

A recent review commissioned by the HEA on the use of reflective practice in postgraduate programmes has indicated that these types of programmes are intended to create meaning around practice (Kahn et al, 2006). Accomplishing this is an inherently collaborative and social process that can lead to changes in practice, capacity for change, and changes in professional identity (Kahn et al, 2006). This process can also be extended to include reflections on participant's research and lead to a conceptualisation of academic practice that is more integrated (Young, 2006). In recent years there has been a move towards programmes for new academics that incorporate support and development for all aspects of academic practice including research and administration (for example University of Warwick).

The literature which looks at the impacts of teaching and learning programmes is fairly mixed. A recent Evaluation Report (Prosser et al, 2006) found that such programmes had the primary positive impact of encouraging academic staff to become more 'student focused' rather than 'teacher focused' and in helping to form linkages between departments. However, problems were cited with the varied perceptions of these programmes held within departments and of the balance between generic versus disciplinary concerns on aspects of teaching and learning (Prosser et al, 2006). A review of the effectives of postgraduate certificate programmes conducted by Knight et al (2006) concluded that there were varying levels of satisfaction regarding these programmes as a method of developing as a teacher.

Attempting to investigate the impact of Teaching and Learning Programmes on the practices and beliefs held by academics is not something that is a simple or even feasible undertaking (Pickering, 2006) and is not what we intend to do here. What is of interest, however, is the extent to which these programmes may allow participants to reflect on and explore ideas around research and teaching roles, how these may be potentially interlinked and to what extent these possibilities are then supported within wider socio-cultural contexts. It is important, therefore, to situate academic beliefs and experiences of research, teaching and learning within the complex array of disciplinary, department and institutional socio-cultural contexts to which they are exposed where "encounters with colleagues, students and university systems and day-to-day stresses and pressures will all have a role to play" (Pickering, 2006: 321). Khan et al. (2006) highlight the importance of dialogue in problematising and developing teaching practice and in situating this dialogue within the wider workplace and institutional context.

Canadian Context
Canada is a provincially funded HE system with resulting variance across provinces and institutions in regard to funding formulas, levels and intended uses. Regulation of HE is also a provincial matter resulting in considerable diversity across provinces as to how this is managed. As compared to the UK and other systems of HE, Canadian universities are minimally controlled by

government (provincially and federally) and enjoy a substantial amount of autonomy (Cameron, 2002).   Canada also has no comprehensive system of benchmarking in HE for research or teaching quality. The only institutional rankings that are published for public consumption are collated by certain media outlets who have access to only a limited amount of institutional data.

Following international trends, government funding for HE in Canada declined significantly in the 1990s and into the early 21st century. Government funding declined from 79% of overall operating income in 1990/91 to 60% in 2001/2 (Eastman, 2006). This decline has been addressed by many institutions through a combination of increasing tuition fees, increased income from other sources (bequests, donations, etc) and a turn toward federally provided research funds. In 1997 the federal government designated university research as a policy priority and established a national research funding scheme to fund individuals in pursuing research projects and institutions in investing in research infrastructure via competitive bidding processes (Usher, 2005).

This decrease in core funding from provinces coupled with increases in research funding federally has lead to an increasing reliance on national research council funds to support the core work of higher education institutions. This is especially true in more research intensive institutions where increasing percentages of total revenue are coming from research councils. This funding split has much the same impact as separated HEFCE and RAE funding has in the UK. Institutions are having to be very strategic in supporting research activity of academic staff to ensure competitiveness for research council funding and continued income growth in years to come.

The provincial nature of HE core funding and the far less regulated nature of HE in the Canadian context as compared to the UK also means that there are no national requirements or levers for new members of academic staff to participate in new lecturer teaching and learning programmes. The absence of longstanding national league tables also makes the sector less transparent and less publicly accountable for its teaching and learning practices and outcomes. Whilst most institutions in Canada have teaching and learning units and provision for professional development of academic staff in learning and teaching, this has for the most part been initiated from within institutions by members of the academic community as opposed to from national policy decisions as in the UK.

3. Project Design

A key aim of the project was the development of workshop materials that could be adapted for use at other institutions. The aim was also to qualitatively explore the experiences of a small sample of early career

academics using semi-structured interviews. The project includes, an investigation of a sample of eight Teaching and Learning programmes being run in universities in the UK and Canada in order to find out the extent to which they directly address issues around linking research and teaching, semi-structured interviews with early career academics at three research-intensive institutions and finally the development and trialling of a workshop designed to enable the exploration of research and teaching roles and the possible linking of these roles and experiences for academic staff.

The research design of the project involved, firstly, doing a review of eight teaching and learning programmes in the UK and Canada, secondly, conducting semi-structured interviews with 3-5 early career academics from a variety of disciplines at each of the three institutions to explore their existing conceptions of the link between teaching and research, and strategies for the integration of teaching and research and thirdly, running workshops with 10-15 early career academic staff at each of the three institutions to pilot and evaluate the materials, activities, and examples of best practice. Early career academics refers to individuals who are new lecturing staff (therefore have research and teaching contract) in the first 1-3 years of their post.

Ethical guidelines were adhered to throughout the project and procedures for ethical clearance were followed both in the UK and Canadian institutions. Informed consent was gathered from all participants, both interviewees and workshop participants. All participants are referred to by pseudonyms in order to protect their confidentiality.

4. Review of Teaching and Learning Programmes

The information below summarises eight teaching and learning programmes reviewed as part of the project. The reviews were conducted through analysis of programme materials and discussions with programme leaders. The primary intent of the analysis was to determine the extent to which the programmes implicitly or explicitly incorporated disciplinary research and teaching links in the curriculum. In addition, the programmes are described regarding their main intended goals as determined by their learning outcomes. The goals for these types of programmes are multiple but traditionally can be broadly categorised into:

1. Improving academic's teaching skills
2. Developing academic's conceptions of teaching and learning
3. Developing academic's skills in reflection

This analysis also looked for outcomes that included:

4. Developing academic's conceptions of research

5. Developing academic's conceptions of the link between teaching and research
6. Improving academic's research skills

A brief overview of each programme is given below. However, it is important to point out that these programmes are continually changing and evolving and so we are only able to represent a very small snap shot of circumstances during the lifetime of the project 2006-8.

Royal Holloway, University of London
Certificate in Academic Practice in Teaching and Learning (Postgraduate level)

This Postgraduate Programme has been mandatory for newly appointed lecturers without equivalent qualification from September 2003. The programme involves several face to face sessions, 4 teaching observations and assessment through several small assignments and a 5000 word scholarly paper on a topic relevant to participant's teaching. The programme did engage participants in the scholarship of teaching but did not explicitly include any discussion on the link between teaching and disciplinary research. In addition, the programme focused exclusively on teaching practice and did not include any aspects of administration or research development in the curriculum. The programme learning outcomes were focused on the first three goals listed above.

King's College, University of London
Postgraduate Certificate in Academic Practice
Attendance at the programme is expected of all new lecturing staff. The programme involved several face to face sessions, up to 4 teaching observations and two written assignments, one scholarly and one reflective. The programme did explore leadership and pedagogic research but did not explicitly incorporate the link between disciplinary research and teaching. The programme learning outcomes were focused on the first three goals listed above but also included development of research skills as it related to research projects in academic practice.

University of Alberta
New Professor Teaching Programme

This programme is available to all new staff as they take up post within the institution. The programme is optional and staff can elect to attend workshops and seminars, which run across the year. The programme emphasises reflection on student learning and teaching strategies (goals 1 to 3 above) and involves observations and written work alongside group discussion. The programme did not explicitly incorporate the link between disciplinary research and teaching as part of the curriculum, however there were informal discussions on this in teaching sessions. The University of

Alberta also runs a successful project called 'Research Makes Sense for Students', which emphasises the importance of undergraduates engaging in research. However, this is not explicitly part of the Teaching programme.

University of British Columbia
The UBC Faculty Certificate on Teaching and Learning in Higher Education

This is an accredited programme, which is open to all staff in the university, although aimed primarily at new staff. The programme included a comprehensive series of modules with assessment including presentations, projects, action research and development of a teaching dossier or programme portfolio. The programme learning outcomes were focused on critical reflection, development of teaching skills and development of conceptions of teaching and learning. The programme also included support in developing administrative skills and leadership but did not include disciplinary research or discussion of its link with teaching.

Oxford Brookes University
Postgraduate Certificate in Teaching in Higher Education

The aims of this programme are primarily linked to improving and enabling staff to develop their teaching and to reflect on different teaching, learning and assessment methods. There is also an aim to foster a scholarly of research-based approach to teaching and learning within the institution. The programme consists of a number of modules related to teaching and learning, which staff can elect to take as part of the certificate programme. There is also a wider programme entitled the 'First Three Years Programme', which includes workshops on research and leadership within the institution as well as teaching.

University of Bath
Postgraduate Certificate in Academic and Professional Practice

The Postgraduate Certificate in Academic and Professional Practice (PGCAPP) replaced the Postgraduate Certificate in Learning and Teaching in Higher Education (PGCLTHE) and involves a more extensive focus on research and leadership as well as teaching and learning. The modules range from 'E-Learning' to 'Research Management' and 'Academic and Research Leadership'. The initial contact with the department was made when the old programme was running. It was then going through a transition and moving from more centrally run modules relating to teaching, learning and assessment to a more departmental based, discipline specific organisation. When interviewed, the Director of the programme stated that although there was no explicit addressing of the possible links between teaching and research in the programme as it was, there was an intention to introduce this into a future amended programme. This is now more clearly stated in the new

PGCAPP programme, where one unit explicitly refers to the integration of research and professional activities into teaching.

University College London
Postgraduate Certificate in Learning and Teaching in Higher Education

The University College London Postgraduate Certificate in Learning and Teaching in Higher Education is advertised as providing for "UCL's vision to provide a research-led and student-centred learning experience". The programme aims to enable participants to develop their; ability in teaching; understanding of student learning; ability to make judgements about their practice and wider academic practice. This programme does make an explicit reference to the importance of exploring "between (staff) teaching and (staff) research. This was supported by examination of the curriculum materials, which included readings and assignment tasks used to provoke discussion and exploration of the link between disciplinary research and teaching. The importance of a scholarship or research based approach to teaching and learning was evident within the programme, which involves each participant carrying out "…a sustained enquiry into an aspect of their professional practice". Assessment on the programme is varied but primarily involves development of a portfolio.

University of Warwick
Postgraduate Certificate in Academic and Professional Practice

The Warwick Postgraduate Certificate in Academic and Professional Practice was previously titled the 'Warwick Teaching Certificate'. It states in the information provided that "it is endeavouring to be more responsive to individual needs and offers participants opportunities to develop their skills, knowledge and understanding in relation to three key elements in an 'academic profile': Teaching and Learning, Research and Academic Management. The course is mandatory for new probationary staff. The programme involves attendance at 10 workshops, three profession group meetings, undertaking of teaching observation and production of a portfolio.

The results of this brief review of eight programmes across universities in the UK and Canada revealed primarily that;

1) There are significant differences between the UK and Canada, with programmes in the UK more likely to be formalised and mandatory for new staff whereas in Canada the programmes are more likely to be optional.

2) That programmes in the UK in particular have changed and continue to change in terms of organisation, structure and content. The common development across many of the programmes discussed in the UK, is to

provide a more comprehensive programme, which is more focused on the breadth of academic work and experience across teaching and learning, research and administration/management.

3) That in terms of ideas of linking research and teaching, our initial scoping of programmes revealed very little evidence of this being made explicit in programmes. However, there does seem to be a growth in reference to the link between research and teaching, more specifically also in relation to having elements of the programme where participants engage in a scholarly or research-based approach to understanding teaching and learning. This is not universal across programmes as shown, but there does seem to be a significant move in the direction of greater discussion and attention being paid to the benefits of linking research and teaching.

5. Early Career Academics and their Perceptions and Experiences of Linking Research and Teaching

Backgrounds and routes into the role of Lecturer in Higher Education

The participants in this study are all early career lecturers in a variety of disciplinary departments within two research intensive, pre-1992 UK universities. The departments included, Dentistry, Health Sciences, Mathematics, Politics and Social Policy. The majority of the eight participants that will be discussed here followed a fairly traditional route into their lectureship posts from initial first degree or Masters to PhD and then to a Postdoctoral position before taking up a lectureship or going straight from a PhD to lectureship. However, a few from the more professional disciplines, in particular dentistry, came to the lecturer post after a significant period of working in a professional post and indeed for the dentists in particular, this involvement in practice or consultancy continued to be a significant part of their role.

Most of the participants had extensive research experience through completing a PhD and from previous postdoctoral research positions. There were significant differences, however, with some having very extensive experience of working on a variety of research projects and with a publication record to others who were just close to completing a PhD and had little experience of publishing. Similarly, in terms of teaching experience, there was a lot of variety with some who had substantial teaching experience whilst doing their PhD and/or postdoctoral work and other who had engaged in very little teaching. Where they had teaching experience this tended to be more around small group teaching in tutorials and seminars rather than teaching larger groups or having responsibility for inputting on course design. For one participant, there was a hesitancy about teaching but it was then found to be something they enjoyed and which created a motivation to apply for a lectureship rather than continue in research positions.

> "So for the first two years I said I wouldn't like to teach, then in my final year I did start teaching and I found I enjoyed it and the students seemed to respond well and I got good course evaluations. Then in the first term a lectureship came up and I applied and got the job, so I have been here for nearly a year now…" (Rachel, Health and Social Care).

For others, however, their research role and/or professional role continued to be central to their identity as academics, as shall be discussed later.

Teaching, Research and Administrative Roles

There was an enormous variety of perceptions and experiences of different teaching, research and administrative role reported by the particpants. This may in part reflect different disciplinary or departmental cultures and organisations or may be primarily influenced by the perceived role that the

new early career lecturer was employed to fulfil. One participant from a Mathematics department, for example, was given a fairly light teaching role and was encouraged primarily to develop his research and to concentrate on applying for research grants and getting publications. Whereas others felt quite overwhelmed by their teaching role and the preparation and contact time required left them struggling to find time to do research.

> "I spent 75% of my time doing teaching and even more, probably the two previous terms it was even more… certainly in the first term it was a real struggle to get any research done really, and it felt like I was losing touch with a research project that I was involved with. We had a research assistant and so it sort of felt like I was ending up leaving it to her and my colleague, so it's hard trying to do research at the same time isn't it really?" (Marie, Law)

Most of the participants did report a significant amount of time spent on teaching, at least for certain parts of the year during perhaps the first and second terms. These early career academics spent a lot less time on administration and were often given fairly minor administrative roles such as 'International Student Advisor'. Again there were exceptions with one participant in the Health Sciences given the role of Director of MPhil/PhD students (although in a department with a very small number of such students). Research was perceived by all of the participants as very fundamental to their role and it was something that they seemed to experience both as a passion and in some cases as a pressure in relation to the Research Assessment Exercise (RAE) and demands required for this exercise.

However, their perceptions of these different roles and their beliefs of how they impacted on their sense of academic identity was again quite varied. Some saw themselves fundamentally as researchers first and foremost whereas others were enthusiastic about their role as both research and teacher/educator (no-one particularly identified themselves strongly with administration).

> "I mean everybody in this department knows that I view myself as a researcher first and the rest of it is what I do to pay the bills." (Jim, Health Sciences)

> "Personally, where I am in my career if I was to be brutally honest I would say that research is quite a lot more important in terms of my overall goals but that doesn't mean that I neglect teaching…my desire to prioritise research comes from my own personal ambition (a) because I really enjoy it and (b) because it's important for my career and probably it is because actually I enjoy it when it comes down to it because I am quite happy in the position I am in. We would all like to get promoted and get more money but one thing leads to another and it's because I am

genuinely interested in the subjects and I like having my stuff published." (Ian, Politics)

"Certainly research probably seems the most important because if I didn't have the others I could still kind of keep going in a way but I also think that teaching is very important and I do devote a lot of time and attention to try and do it well." (Rachel, Health and Social Care)

The analysis is as yet too tentative and the sample size quite small but there does appear, at least for the participants here, to be a gender split around identities formed primarily by research and teaching roles. This gender difference may also be reflected in the discussions around ideas for teaching and learning engaged in with the participants.

Experiences on Teaching and Learning Programmes and Development of Ideas for Teaching and Learning

Although, there were some participants who clearly felt that teaching was just something that had to be done as part of 'paying the bills', most of the participants discussed very thoughtfully their beliefs and experiences about teaching and learning. Much of the focus of their discussion was on teaching and how best to do this. Many of the participants outlined a developmental change from transmission of information-based teaching or "death by powerpoint" (Terry, Mathematics), to more flexible and interactive forms of teaching and learning. Participation in Teaching and Learning programmes was sometimes reported as enabling the development of teaching practices.

" Yes, I would say that when I first started teaching my style was more – I would kind of write a long script and then agonise over kind of remembering it and saying it as though I wasn't reading it…but I think that (participation in the teaching and learning programme) has kind of suggested ways that it can be more interactive, for example, brainstorming at the beginning… and then student feedback has told me "I really enjoyed that bit and it woke me up". (Rachel, Health and Social Care).

Often, the participants reported that the teaching methods used were fairly traditional lecture then seminar formats with structured presentations for lectures and less structured, more discussion based seminars. In one department, discussions had taken place to move from this format but reluctance to make large scale innovation blocked any moves for change. In some disciplines, particularly in the professions, it was felt that constraints were made by the authorial positions of external accrediting bodies.

However, many of the participants demonstrated innovative and impassioned reflections on how they wanted to develop their teaching and

some of this related quite strongly to a greater integration of their own research work into their teaching.

> "…and I did begin to think well is there, you know, a way of doing some research which then would make this whole subject more live to students. So I mean maybe looking at the cases of students who have been arrested under the prevention of terrorism legislation and what their experiences of that is. So but that really is only things that I have been thinking about over the last month or so really since I've been thinking a lot about terrorism." (Marie, Law)

There was quite a significant amount of endorsement for the linking of research and teaching, although the ways in which this was conceived varied tremendously among the participants. There was also an almost majority view that linking research and teaching was much easier with postgraduate students and difficult, or perhaps impossible with undergraduate students. The relationship was usually but not exclusively seen as being about linking content rather than through process and (certainly in terms of undergraduates) students engaging in research (Healey, 2005). It was stated by some that their research interests were too specific and therefore did not fit with the need for wider, more generic knowledge needed for undergraduate teaching. By the same token, this need for the teacher to read more widely in order to prepare for teaching was perceived to have a very beneficial role in rejuvenating their thinking in some research areas. There was a lot of description of active learning, mainly problem based learning, particularly in Mathematics. The notion of students engaging in research was primarily seen to be the preserve of final year undergraduates and postgraduates. There was one participant who was keen to involve some students within one of his research projects but again this was at Masters level.

There was some confusion, therefore, of the feasibility of linking research with teaching but overall, participants were keen to develop their work in this way where possible and to achieve more integration of these roles. This ranged from developing new courses which specifically linked to research specialist areas to utilising one's research to rejuvenate and innovate one's teaching across the board such that the possibility of participating in cutting edge, new research developments and the excitement of this was communicated to students.

> "…that seems to me to be an ideal way of, actually teaching and research should be interconnected…we shouldn't have this dry set of things we're trying to teach students which isn't connected to what we are coming across when we're doing our research…" (Marie, Law)

Perceptions of departmental research and teaching cultures and of departmental support

In terms of enabling early career academics to develop and innovate their teaching, the perception of departmental cultures were not always seen to be conducive to this. In general, there was agreement that department colleagues were supportive and that in particular, mentors were very helpful in the development of one's teaching.

> "You know having a meeting with your mentor and discussing issues as they come up, that's helpful, you know, having a mentor critique you, that's great." (Jim, Health Sciences)

However, not all participants found such support.

> "I would say that being observed would be quite useful (as part of the Teaching and Learning Programme)… Though I have to say, I was observed last week by someone in my department who gave very different feedback and points and he wanted to know 'why I was walking around'. They made me do that on the (teaching and learning programme)… I tried to explain to him about breaking up the lecturer/student space and he thought it was the most ridiculous thing he had ever heard." (Rachel, Health and Social Care)

In this same department, advice was given by senior members of staff to this early career academic, to be less concerned with teaching and more with research.

> "But people do kind of say – or more senior people have said to me that what I need is to aim for an 'A' on your research and a 'C' n your teaching and a 'C' on your admin. It has been said 'you can't get sacked for doing admin badly', but that isn't in my nature because I don't want to do anything badly." (Rachel, Health and Social Sciences).

The semi-structured interviews clearly reveal that experiences of early career academics are multiple and varied across different departments within institutions. Perceptions of supportive cultures for both teaching and research are clearly important. It seems clear that academic programmes to support new academic staff can play a significant role in encouraging greater development of their teaching as well as research and possible links between them. However, this ultimately has to be something which is also supported and encouraged within departments by Heads and more senior colleagues.

6. Workshop Development, Delivery and Evaluation

Background

The development of the workshop materials was completed by collaboration among the three partners in the project. The development was informed by the review of other PGC programme offerings in this area (see section 4), a review of the literature on linking teaching and research and academic identity as well as a review of literature on professional development and postgraduate teaching certificates (see sections 1 and 2).

The outcomes of the workshop were established as having participants:
-reflect upon research, teaching and the link between the two
-explore the influence of contextual factors (e.g. discipline, department) on the above
-consider the potential difficulties/barriers to linking teaching and research

Approach

There is conflicting evidence regarding the effectiveness of stand alone workshops in staff and educational development (Prebble et al, 2006). As a result, it was felt that it was important that the development and provision of this workshop not occur in isolation of the PGC programme offerings in the three institutions involved. Discussions with Programme Directors within the three institutions and collaboration with them as possible, on development and delivery was key to the success of the workshop.

The approach taken was fundamentally based on the ideas of professional formation and as such attempted to pull in participants non-formal experiences, include much social interaction and discussion and as a result be constructed around each participants own practice and context (Knight, 2006). This approach was also thought to be vital given the importance of contextual factors such as discipline in influencing participant conceptions of and approaches to linking teaching and research. The impacts of these factors has been seen in regard to PGC programmes more generally (Prosser et al., 2006, Knight, 2006). The approach also built on the 'community of practice' that participants within PGC programmes had already established thus allowing for meaningful interactions and discussions within the workshop due to this past social participation (Warhurst, 2006).

Structure

The workshop structure was influenced by the intended alignment with existing PGC programmes. In all three institutions the timing of the session was such that participants would have had some engagement with pedagogical theory and good practice in teaching and learning as part of the PGC programmes.

As discussed in the introduction, once way forward in thinking about academic practice is to challenge the dualism of research and teaching roles in HE. It was therefore decided to explicitly explore participant conceptions of research and begin to consider the epistemological underpinnings of individual approaches and conceptions. This then lead to discussion of the integration of roles with both conceptions of and practice in teaching within their context.

The workshop was therefore structured in four distinct sections (i) exploring research, (ii) exploring teaching, (iii) exploring the link, (iv) institutional and departmental contexts. The first two sections began with discussion of participant's experiences and conceptions followed by a brief presentation of published models of the specific aspect of academic practice. This was followed by a chance for reflection and group discussion of how the presented model fit with participant experiences and conceptions. The models presented were selected from the literature and were intended to present a consistent theoretical framework across research and teaching conceptions and approaches and provide a basis for discussion and critique. In addition, it was recognised that within a short workshop, only certain models could be presented and discussed in consideration of time and clarity of presentation. As a result, Trigwell and Prosser's work on conceptions of research and subject matter (2004) were used and presented along with their models of conceptions of teaching (Trigwell, Prosser & Taylor, 1994), learning (Trigwell & Prosser, 1996) and approaches to teaching (Prosser & Trigwell, 1999). In addition to these models, conceptions of scholarship and research were presented from Boyer (1990) and Brew (2003). The inevitable limitation of the model selection was the narrowing of discussion to one particular theoretical framework. It was felt that this was necessary in the context of the workshop, but should be addressed in the incorporation of these materials into programmes or more distributed workshop formats.

The third section asked participants to first consider, in light of earlier discussions, if research and teaching should be linked. This was followed by exploration of models of what the link may look like and discussion of case studies representing varying approaches. The presentation of models was limited to the models currently in existence on research teaching links (Griffiths, 2004; Healy, 2005; Turner & Wuetherick, 2006).

The final section of the workshop asked participants to reflect on what their institution and/or department could or should do to strengthen the links between research and teaching (Jenkins, 2003) and concluded with a reflection on the influence of national policy and agendas on the link (Lucas, 2006).

The materials developed to support the delivery of the workshop can be found in Appendix A including handouts, slides and case studies. The workshop was delivered over three hours in each location.

Evaluation

Each workshop was evaluated through use of a questionnaire completed by participants. The evaluations indicated that participants found the workshop useful in formalising vague ideas held of the link between teaching and research. It was also noted that the case studies and examples were the most useful in exploring conceptions and reflecting on how they may link the two in their own practice.

> "the discussion was extremely interesting – from presenters to the participants and their differing perspectives"

> "it was very useful as I'm just at the stage of facilitating my research colleagues to move into teaching commitments"

> "[I would have liked] more time!"

It was suggested by many that fewer models be used in the workshop and that the discussion focus on practical examples. This was noted as an adjustment needed in future offerings with an alternative approach having models emerge out of participant experiences. It was also suggested by several participants that the approach be adjusted to allow for two sessions with time for reflection in between. The use of learning technology could also enhance the opportunity for reflection as part of the session or wider programme. In interpreting the workshop evaluations and reflections by the workshop team it is important to also note that the benefits of these programmes often do not disclose until much later (Knight 2006).

Further Developments

One outcome of this project has been the development of a module on research teaching links in the PGC at Royal Holloway. The module has used the materials developed in this project as a basis and has incorporated the use of action learning sets in provision of opportunities for reflection by participants on academic practice and options for integrating research and teaching. The module is the third of five that make up the programme and includes four two-hour sessions, two of which are action-learning sets.

References

Akerlind, G. S. (2003) Growing and Developing as a University Teacher: variation in meaning, *Studies in Higher Education*, 28 (4), 375-390.

Brew, A. (2006) *Research and Teaching: beyond the divide,* Basingstoke: Palgrave Macmillan.

Cameron, D.M. (2002) The Challenge of Change: Canadian universities in the 21st century, *Canadian Public Administration,* 45(2).

Deem, R. and L. Lucas (2007) Research and Teaching Cultures in two contrasting UK policy locations: academic life in Education departments in five English and Scottish universities, *Higher Education*, 54, 115-133.

Department for Education and Skills (2003) *The Future of Higher Education*. London: DfES.

Eastman, J.A. (2006) Revenue Generation and Organisational Change in Higher Education: Insights from Canada, *Higher Education Management and Policy*, 18(3), 57-81.

Khan, P., Young, R., Grace, S., Pilkington, R., Rush, L., Tomkinson, B., Willis, T. (2006). *The role and effectiveness of reflective practices in programmes for new academic staff: a grounded practitioner review of the research literature.* Final Report. Higher Educational Academy.

Lucas, L. (2006) *The Research Game in Academic Life,* Maidenhead: SRHE/Open University Press.

Lucas, L. (2007) Research and Teaching Work within University EducationDepartments: fragmentation or integration?, *Journal of Further and Higher Education*, 31 (1): 17-29.

Pickering, A. (2006) Learning about university teaching: reflections on a research study investigating influences for change, *Teaching in Higher Education*, 11, 3: 319-335.

Prosser, M., Rickinson, M., Bence, V., Hanbury, A., Kulej, M. (2006) *Formative Evaluations of Accredited Programmes*. Final Report. Higher Education Academy.

Robertson, J. & Bond, C. (2003) The Research/Teaching Relation: variation in communities of inquiry, *SRHE Annual Conference*, Royal Holloway, University of London, 16-18th December.

Scott, P. (2004). Knowledge Work in A Knowledge Society: rethinking the links between university teaching and research. *The Higher Education Academy Learning and Teaching Conference 2004*: Delivering Excellence, University of Hertfordshire.

Sikes, P. (2006) Working in a 'new' university: in the shadow of the Research Assessment Exercise?, *Studies in Higher Education* **31**(5): 555-568.

Universities UK, SCOP, HEFCE & HEA Consultation (2004) *Towards a Framework of Professional Teaching Standards London*: Universities UK.

Usher, A. (2005) A Halfway Heaven, in *Big Dose of Can-Do,* p.3, Times Higher Education Supplement November 11.

Wenger, E. (2000) Communities of Practice and Social Learning Systems, *Organization* **7**(2): 225-246.

Young, P. (2006) Out of balance: lecturers' perceptions of differential status and rewards in relation to teaching and research, *Teaching in Higher Education* **11**(2): 191-202.

Young, R. (2006). Insights for programme leaders from a review of research into the use of 'reflective practice' on programmes for new academic staff. Briefing, Higher Education Academy. Accessed at http://www.heacademy.ac.uk/research/REFL_BP_4.pdf on 14/04/2007.

Appendix A – Workshop Materials

Session pack table of contents

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Research and Teaching:
separate or integrated aspects of academic practice?

Workshop aim
- To explore the ways in which the teaching and research relationship can be perceived and the extent to which it is possible to link these two activities within academic work

Learning outcomes
By the end of the workshop, you will have:
- Reflected upon conceptions of 'research' and 'teaching'
- Explored ideas for linking research and teaching
- Reflected upon the impact of institutional and departmental contexts on possibilities for linking research and teaching

Other relevant resources
Canadian Summit on the Integration of Research, Teaching and Learning:
www.ualberta.ca/summit

Research Makes Sense for Students Initiative at the U of A:
www.ualberta.ca/researchandstudents

Linking Teaching and Research in the Disciplines:
http://www.brookes.ac.uk/genericlink/!

Conference: Undergraduate Research and Scholarship and the Mission of the Research University:
http://www.sunysb.edu/Reinventioncenter/conference/urconfschedule.htm

Research and Teaching - Closing the Divide Conference:
http://www.solent.ac.uk/rtconference/default.asp?level1id=12432

Higher Education Academy Paper: Guide to the Research-Teaching Nexus
http://www.heacademy.ac.uk/resources.asp?process=full_record&section=generic&id=383

Higher Education Academy Paper: Institutional Strategies for Linking Teaching and Research
http://www.heacademy.ac.uk/resources.asp?process=full_record&section=generic&id=585

What does research mean to you?

What are you aiming to do when you engage in research?

What role do you as the researcher play when engaging in research?

Has your experience of engaging in research changed over time?

Share your ideas with colleagues in your group
Attempt to determine if a pattern emerges from your ideas – how could research be
conceptualised from your examples?

Models of Research

Different Conceptions of Scholarship

Scholarship of discovery: contributes to the 'stock of human knowledge' and this comes closest to the idea of 'research'.	**Scholarship of application**: application of knowledge in the wider community.
Scholarship of integration: making connections of ideas within and across disciplines.	**Scholarship of teaching**: involves teaching that is carefully planned and informed by pedagogical knowledge. Encourages active learning and a recognition that teachers are also learners.

Boyer, E.L. (1990) *Scholarship Reconsidered*, New York: The Carnegie Foundation
for the Advancement of Teaching

Relationships between 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**: research as the social exchange of products	**Domino view**: research as a synthesis of separate elements to solve problems or answer questions
Internal processes	Understand	**Journey view**: research as a personal journey of discovery	**Layer view**: research as a process of finding or creating underlying meanings

Brew, A. (2003) Teaching and Research: new relationships and their
implications for inquiry-based teaching and learning in higher education,
Higher Education Research and Development, 22, 1.

Academic Experiences of Research

Research by Trigwell et al (2004) based on interviews with 20 university teachers who were successful in research grant applications and research publications and who were also involved in teaching (their subject area) found that research could be conceptualised along a dimension of categories, which move through academics' experiences of research as involving discrete, independent projects through a more integrated application of concepts to development of meaning, understanding and a possibility for change in that field (discipline).

Research as…

A	B	C	D

Series of projects that are self-contained

Application or development of theory within the boundaries of the field of study

Development of a series of integrated field of study based concepts, issues or procedures

Development and change of understanding about a field
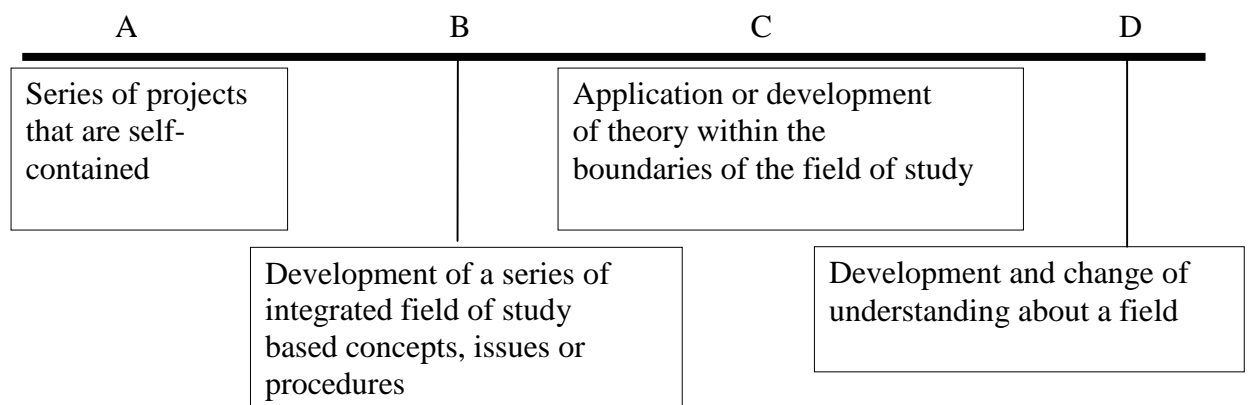
Academic Experiences of Subject Matter

Trigwell et al (2004) also compare how these academics conceive of their subject matter along a similar dimension from discrete facts and techniques, integrated and holistic organisation of theories.

Subject matter as…

A	B	C	D	E

Individual facts or techniques

Series of concepts or topics, which are linked and integrated

A coherent whole supported by organising theories

Individual concepts or topics

Series of concepts, issues or procedures, which are integral to the formation of a whole
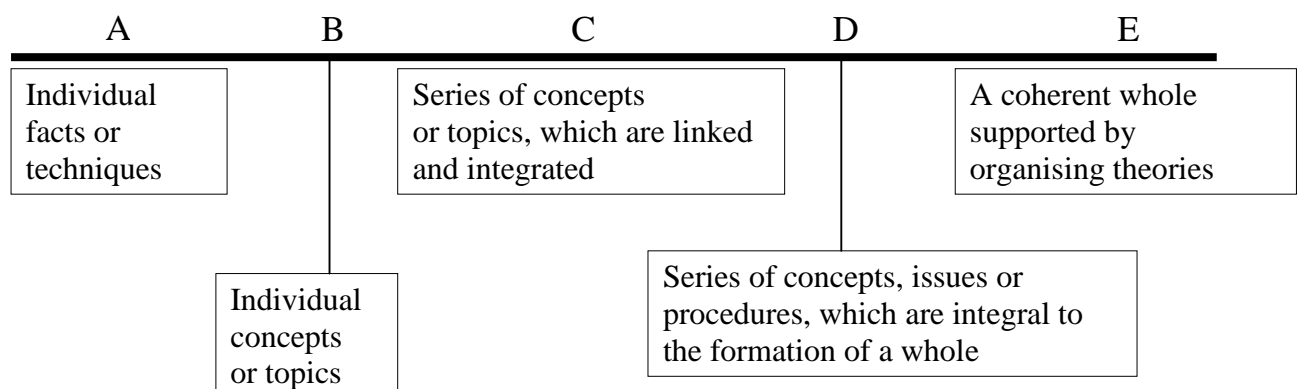
Source: Trigwell, K. et al (2004) University Academics' Experiences of Research and its Relationship to their Experience of Teaching, *Higher Education Research and Development Society of Australasia (HERDSA) Annual Conference*, Miri, Sarawak, 4-7 July.

What does teaching mean to you?

Write down 2 or 3 different teaching approaches you have experienced or used which you feel enabled learning.

In these examples determine:
- What the teacher did
- What the student did
- What the outcomes were

Share your examples with colleagues in your group and note the differences and similarities in your examples.

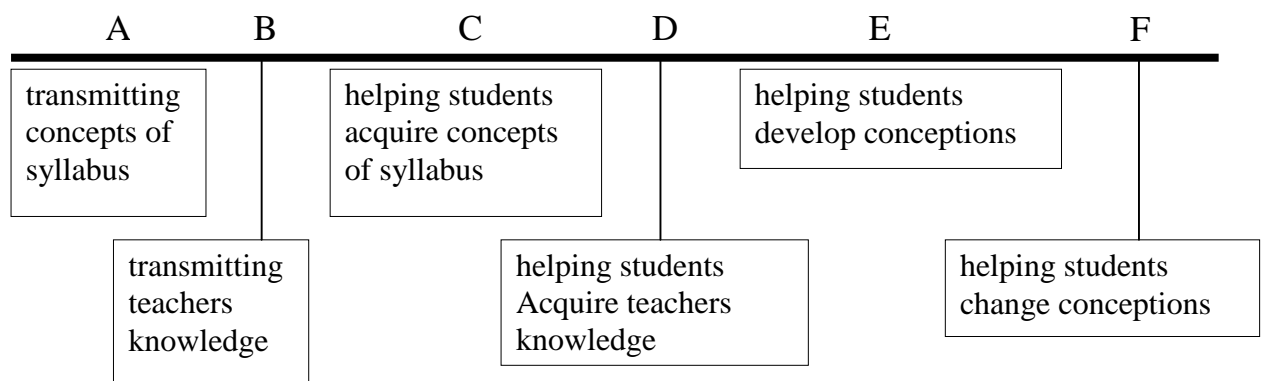Attempt to determine if a pattern emerges from your examples
– can teaching be represented or described based on your examples?

Models of Teaching

The way in which we may link teaching and research will also be impacted by our thoughts about and approaches to teaching. There are many different ways of conceptualising teaching, but a commonality among them are that they are always linked to learning and to the subject matter which is being taught (not too much of a stretch!).
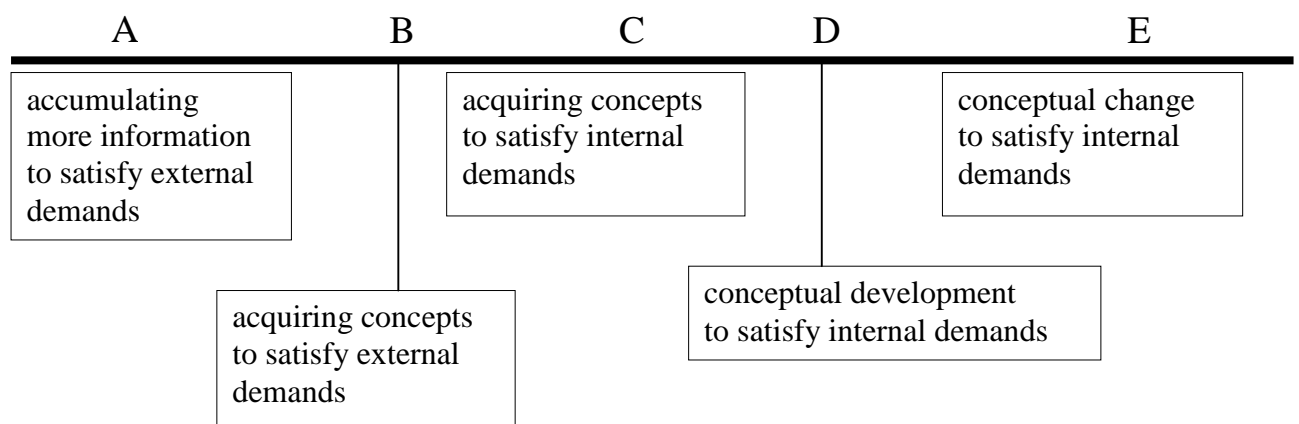
Conceptions of Teaching

Prosser and Trigwell have proposed one of the most cited conceptions of teaching. They have built their ideas on how teachers describe what they attempt to accomplish when they teach.

A	B	C	D	E	F

| transmitting concepts of syllabus | | helping students acquire concepts of syllabus | | helping students develop conceptions | |

| | transmitting teachers knowledge | | helping students Acquire teachers knowledge | | helping students change conceptions |

Prosser, M., Trigwell, K., & Taylor, P. (1994). A phenomenographic study of academics' conceptions of science learning and teaching. *Leaning and Instruction*, 4, 217-231.

Conceptions of Learning

This variation in conception of teaching has also been empirically linked to how teachers conceptualise learning. The descriptions below are categorisations of descriptions of teachers' conceptions of learning:

A	B	C	D	E

| accumulating more information to satisfy external demands | | acquiring concepts to satisfy internal demands | | conceptual change to satisfy internal demands |

| | acquiring concepts to satisfy external demands | | conceptual development to satisfy internal demands | |

Trigwell, K., & Prosser, M. (1996). Changing approaches to teaching: a relational perspective. *Studies in Higher Education*, 21, 275-284.

Teachers who hold conceptions of teaching that relate to transmission of information are more likely to conceive learning as the accumulation of information. Teachers who conceive teaching as conceptual change are more likely to see learning as conceptual change.
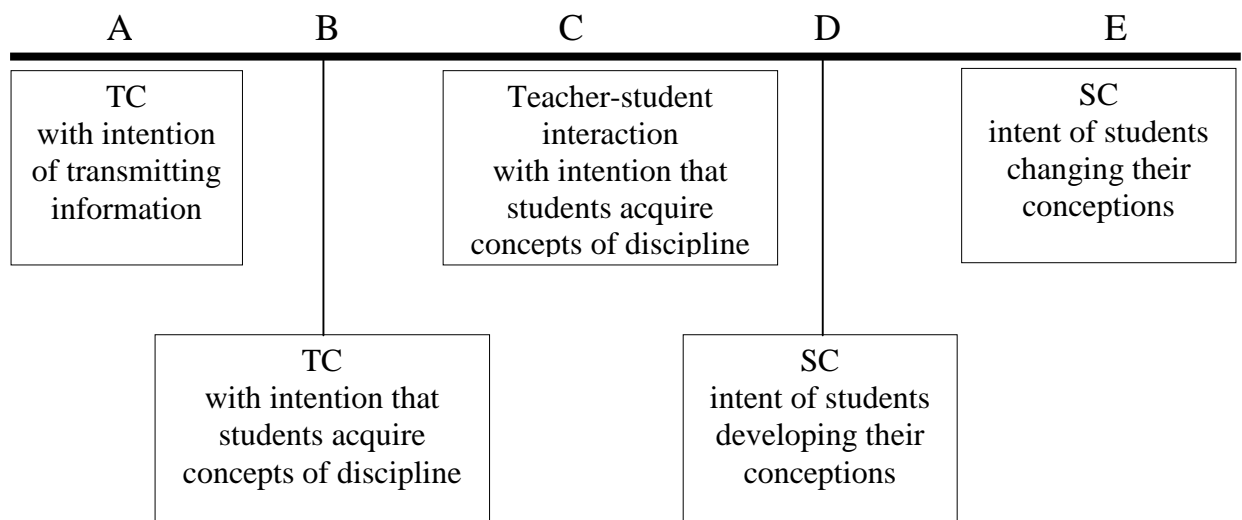
Approaches to Teaching

The work of Dewey, Rodgers and Knowles has also lead to the development of strategies of teaching known as student centred or teacher centred.

Very simply, these ideas can be represented as

Teacher Centred (TC)	**Student Centred (SC)**
Low level of student choice	High level of student choice
Student passive	Student active
Power is primarily with teacher	Power is primarily with student

Emerging Issues in the Practice of University Learning and Teaching. O'Neill, G., Moore, S., McMullin, B. (Eds). Dublin:AISHE, 2005. Accessed at http://www.aishe.org/readings/2005-1/

The conception of teaching (and learning) along with the strategy employed, can lead to categorisations of approaches to teaching:

A	B	C	D	E
TC with intention of transmitting information		Teacher-student interaction with intention that students acquire concepts of discipline		SC intent of students changing their conceptions
	TC with intention that students acquire concepts of discipline		SC intent of students developing their conceptions	

Prosser, M., & Trigwell, K., (1999). *Understanding Learning and Teaching: the experience in Higher Education.* Society for Research into Higher Education & Open University Press: Buckinham, UK.

The Research Teaching Link

Should the two be linked?

Is it important that all academics who teach also research?

Is it important that all academics who research also teach?

Why (not)?

Write down an example of linking research and teaching in your own practice (or your own experience).

Models of Linking Research and Teaching

> When research and teaching are both viewed as founded on a traditional empiricist framework, the relationship is always problematic… If, on the other hand, knowledge is seen as a product of communication and negotiation, the links between research and teaching are quite different… A move towards a more pluralistic view of knowledge, which fully takes on board the interpretive nature of academic work, … means that research and teaching can be viewed as being in symbiotic relationship. (Brew, 2001, 150)

As institutions in the UK and Canada have explored the ongoing place of undergraduate education within their institutional environment, this notion of making research-based learning the standard has resonated strongly as a way to help reconcile that perceived tension between teaching and research. This has resulted in a number of different and innovative institutional, departmental, and individual course strategies to better integrate research into the undergraduate learning environment. There has been a struggle, however, on many campuses on how to work with faculty to develop these innovative courses more broadly across the department/institution. This struggle has been underpinned on many campuses by the difficulty to conceptualize what research-based teaching and learning is and, even more specifically, how one defines research when discussing research-based learning at the undergraduate level.

Approaches to Understanding 'Research-led Teaching'

> In a study of over 200 Academics from Canada, the UK, Australia and New Zealand it was found that academics were split on their understanding of what research-led teaching was. Many provided examples that Brew classified as learning through research (or students involved or engaged in research). Others viewed research led-teaching as presenting research to students (or having research inform the content of your lectures). Others viewed it as researching teaching (or engaging in the scholarship of teaching and learning).

Faculty understandings of 'research-led teaching'
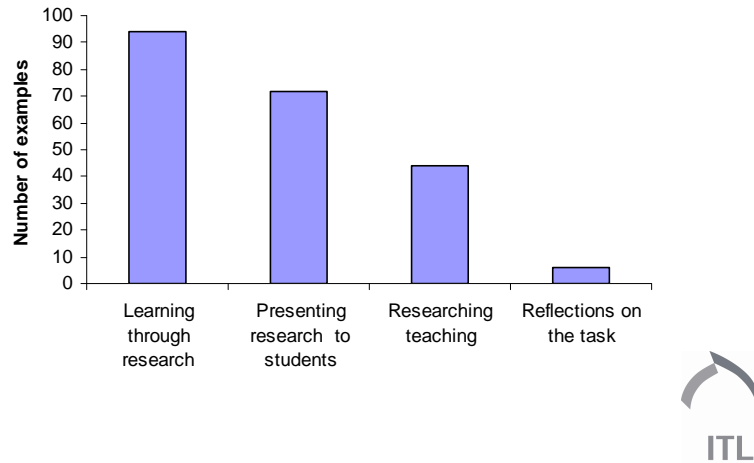
Brew A. (2006). *Research and Teaching: Beyond the Divide*, Hampshire: Halgrave-MacMillan.

Approaches to Understanding the 'Research-Teaching Nexus'

Griffiths (2004) argued that there were four different ways to conceptualize the research-teaching nexus.

Research-led - curriculum is structured around subject content, and the content is selected directly based on the specialist research interests of the teaching staff; teaching is based on a traditional information transmission model; emphasis on understanding research findings rather than research processes.

Research-oriented - curriculum places emphasis as much on understanding processes by which knowledge is produced in the field as on learning the knowledge that has been achieved; careful attention is given to teaching inquiry skills and on acquiring a research ethos; the research experiences of teaching staff are bought to bear in a more diffuse way.
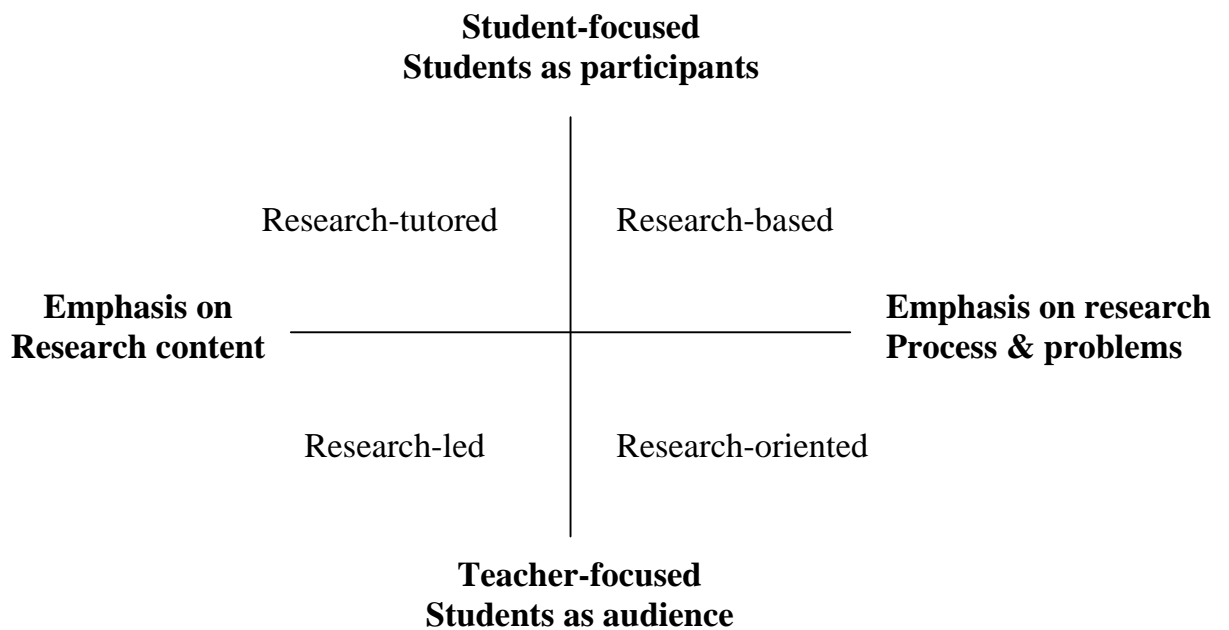
Research-based - curriculum is largely designed around inquiry-based activities, rather than on the acquisition of subject content; the experiences of staff in processes of inquiry are highly integrated into the student learning activities; the division of roles between teaching and student is minimized; the scope for two-way interactions between research and teaching are deliberately exploited.

Research-informed - teaching draws consciously on systematic inquiry into the teaching and learning process itself.

Griffiths, R. (2004). "Knowledge production and the research-teaching nexus: the case of the built environment disciplines," Studies in Higher Education, 29 (6), 709-726.

Approaches to Understanding the 'Research-Teaching Nexus'

Healey (2005) expands on Griffiths by dropping the category 'research-informed', which is essentially the scholarship of teaching and learning, and adding a fourth area called research-tutored. Healey also adds an axis where the emphasis ranges from the research content to the research process and problems. He adds a second axis where the activity is student-focused (with students as participants) or teacher-focused (with students as audience).

Student-focused
Students as participants

Research-tutored	Research-based

Emphasis on　　　　　　　　　　　　　　　　　**Emphasis on research**
Research content　　　　　　　　　　　　　　　**Process & problems**

Research-led	Research-oriented

Teacher-focused
Students as audience

Healey defines research-led, research-oriented, and research-based the same as Griffiths.

Research-led - the same as Griffiths.

Research-oriented - the same as Griffiths.

Research-based - the same as Griffiths

He adds:

> **Research-tutored** - curriculum emphasizes learning focused on students writing and discussing papers and essays (the example he uses is the Oxbridge tutorial model of one-on-one or two-on-one seminars between students and academic staff).

> Healey, M. (2005). "Linking Research and Teaching: Exploring Disciplinary Spaces and the Role of Inquiry-based Learning", in *Reshaping the University*, (ed) R. Barnett. London: Society for Research in Higher Education and the Open University.

Approaches to Understanding the 'Research-Teaching Integration'

Turner and Wuetherick have taken the different models of integrating teaching and research and placed them on a continuum of activities from teacher focused to student focused.
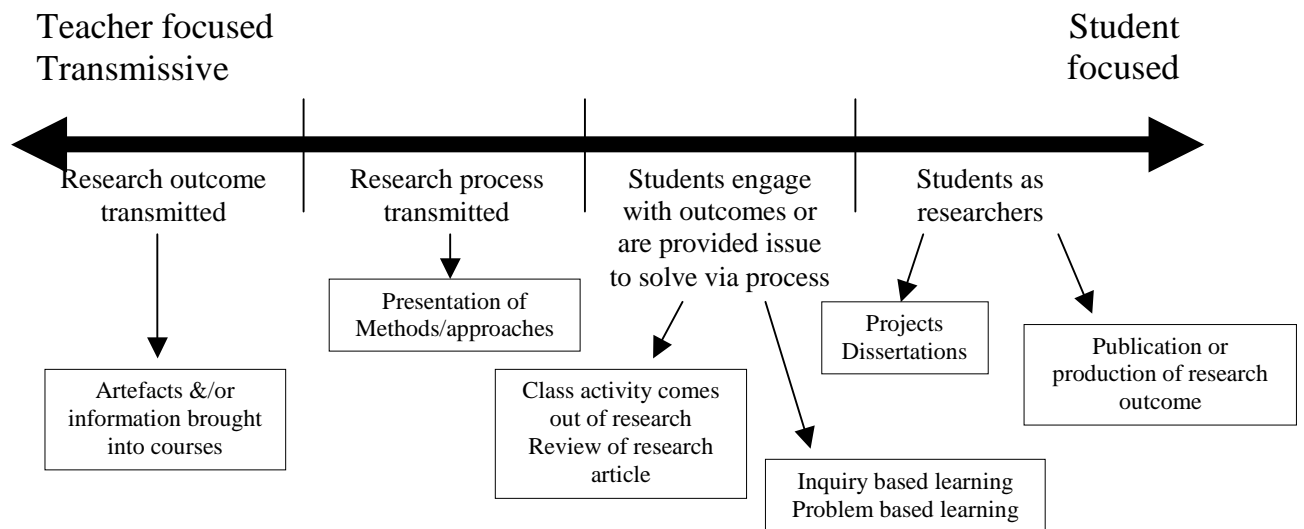
Their four categories are:

> **Research outcome transmitted** - This aligns with Griffiths' 'research-led' category

> **Research process** - This category, which is new to this model, involves teaching students about the research process, but remains in a transmissive or teacher focused model of teaching.

> **Students engage with outcomes or are provided issues to solve via research -** This aligns with Griffiths' 'research-oriented' category.

> **Students as researchers -** This aligns with Griffiths' 'research-based' category.

Teacher focused
Transmissive

Student
focused

Research outcome
transmitted

Research process
transmitted

Students engage
with outcomes or
are provided issue
to solve via process

Students as
researchers

Presentation of
Methods/approaches

Projects
Dissertations

Artefacts &/or
information brought
into courses

Class activity comes
out of research
Review of research
article

Publication or
production of research
outcome

Inquiry based learning
Problem based learning

Turner N. and Wuetherick B. """, Presented at the *Canadian Summit on the Integration of Research, Teaching and Learning*, Edmonton, AB, May 4-6.

Approaches to Understanding the 'Research, Teaching and Subject Matter'

Prosser and Trigwell's conceptualization of research, teaching and the understanding of the subject matter can be understood as a model for understanding the link between teaching and research as well. They found that there was significant overlap in the way that academic staff understood their research and their teaching, but the most significant connection between the two is how the academic staff understand their subject matter.

Research

Teaching

Understanding of
Subject Matter
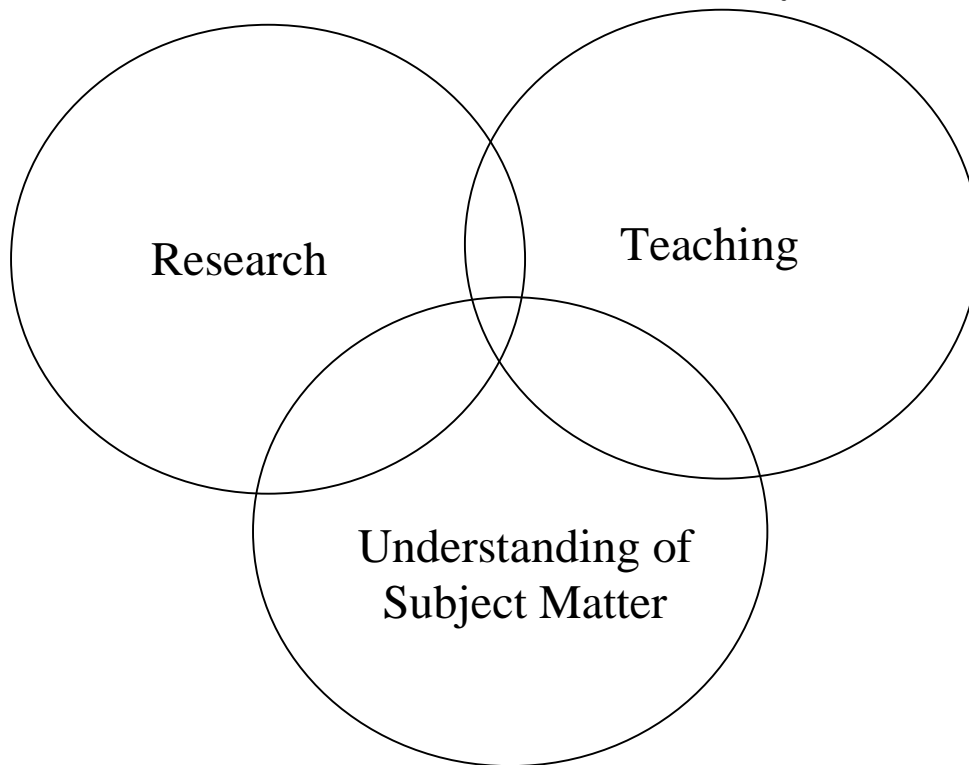
Case Studies: The Integration of Research and Teaching

Case Study 1: Introductory Philosophy

This first year introductory philosophy class is taught by a team of two academic staff with a class size of approximately 200 students. Originally the Department of Philosophy used to offer this class as three separate sections with roughly 60 or 70 students in each. They combined these into one section in exchange for a commitment to have five doctoral students as teaching assistants. The class was then divided into a two hour lecture plus a one hour seminar for each week. The two academic staff alternate teaching a lecture each week, while the doctoral students each facilitate two one hour seminars with 20 students in each.

The purpose of the class is to introduce undergraduate students to the great thinkers of Philosophy and to introduce students to what the discipline of Philosophy is about. For the class the teaching team, made up of the two academic staff and the five doctoral students, picks a general issue or theme within the discipline of Philosophy. During the lecture time the academic staff members discuss that theme from the perspective of a great philosopher. During the corresponding seminar time that week students are assigned a relevant reading from the works of that philosopher and are asked to discuss some questions (previously circulated with the class materials) from the perspective of that philosopher. This is repeated each week with a different philosopher. The teaching team meets regularly to discuss the progress of the course to ensure that any issues that arise in the seminar can be addressed in the next lecture. The primary assessment for the students is a research paper addressing the theme of the course where the students are expected to address the question from the perspective of a particular philosopher that they get to choose. The assessment is done in phases to allow students to understand the writing process for academic papers (starting with a literature review, outline, and then a paper). The doctoral students spend some seminar time introducing how to conduct an effective literature review, how to develop an outline for an academic paper (including thesis statement), and how to structure a proper academic paper.

Where does this example fit into the continuum presented earlier?

How might this be implemented in your discipline?

What are potential barriers to implementing this model?

Case Study 2: Final Year Cultural Studies

In this final year Cultural Studies class that explores public policy within the area of culture and society the students engage in a seminar-based classroom environment. The students are expected to do a significant amount of reading (in terms of both policy papers and research articles), which helps to inform the two primary forms of assessment used in the class. The instructor chooses an important question with significant in cultural studies. They then break the class into two groups to research the two sides of the issue (both from academic research and social policy perspectives). They then have a moderated debate on the issue, in front of several faculty members from the discipline. Both sides give opening remarks, followed by two opportunities for rebuttals, and followed by concluding statements. Throughout the debate both sides are expected to draw on research from the discipline to inform their arguments.

Where does this example fit into the continuum presented earlier?

How might this be implemented in your discipline?

What are potential barriers to implementing this model?

Case Study 3: Introductory Animal Science

An introductory animal science class, with an average class size between 50 and 75 students in each cohort. The class has recently transitioned from a standard lecture-laboratory class, to one heavily based on students seeking answers to questions assigned by the instructor, and culminating in a public forum. The class uses a series of lectures on different content areas that are important for the class, along with experiential field trips to different venues to witness Animal Agriculture in a research and production setting. There are two primary assignments that have been incorporated into the class, which are more research or project-based. For the first assignment students receive an item that relates to animal science. In their lab section a week later the students have to present on what their item is, why it is important for animal science, and what would be important. The two TAs assigned to the class, along with the instructor, help mentor students through the process of finding out about their item and preparing the presentation for the lab section. For the second assignment the students are placed in groups of 3 or 4 and each group is assigned a question related to animal science that explores "answers to animal science you didn't know you had." These questions, for example "If you had a car that drove on methane, how far could you travel on the methane produced from one cow?", have a scientific answer behind the question that explores an important issue of within the field of animal science. The groups are then required to present in a public forum, which has been branded as 'There's a Heifer in Your Tank," in front of 500 to 700 fellow students, parents of the students, members of the internal U of A community, and members of the animal agriculture community from across Alberta. The process of completing the project work seems to result in a greater understanding of the inquiry process among the students, and the public forum helps to develop the students' communication skills.

How might this be implemented in your discipline?
What are potential barriers to implementing this model?

Case Study 4: Senior Year Human Ecology

In this senior year Cultural Studies class that explores public policy within the area of culture and society the students engage in a seminar-based classroom environment. The seminar class, with around 20 students per semester, is facilitated by one academic staff member whose research area is in an aspect of cultural studies. The students are expected to do a significant amount of reading (in terms of both policy papers and research articles), which helps to inform the two primary forms of assessment used in the class. The instructor chooses an important question or issue with some significance in cultural studies. He/she then breaks the class into two groups to research the two sides of the issue (both from academic research and social policy perspectives). They then have a moderated debate on the issue, in front of several faculty members from the discipline. Both sides give opening remarks, followed by two opportunities for rebuttals, and followed by concluding statements. Throughout the debate both sides are expected to draw on research from the discipline to inform their arguments. The other assessment is an individual research paper on a question related to the initial issue that the students were debating.

How might this be implemented in your discipline?

What are potential barriers to implementing this model?

Case Study 5: Introductory Philosophy

This first year introductory philosophy class is taught by a team of two academic staff with a class size of approximately 200 students. Originally the Department of Philosophy used to offer this class as three separate sections with roughly 60 or 70 students in each. They combined these into one section in exchange for a commitment to have five doctoral students as teaching assistants. The class was then divided into a two hour lecture plus a one hour seminar for each week. The two academic staff alternate teaching a lecture each week, while the doctoral students each facilitate two one hour seminars with 20 students in each.

The purpose of the class is to introduce undergraduate students to the great thinkers of Philosophy and to introduce students to what the discipline of Philosophy is about. For the class the teaching team, made up of the two academic staff and the five doctoral students, picks a general issue or theme within the discipline of Philosophy. During the lecture time the academic staff members discuss that theme from the perspective of a great philosopher. During the corresponding seminar time that week students are assigned a relevant reading from the works of that philosopher and are asked to discuss some questions (previously circulated with the class materials) from the perspective of that philosopher. This is repeated each week with a different philosopher. The teaching team meets regularly to discuss the progress of the course to ensure that any issues that arise in the seminar can be addressed in the next lecture. The primary assessment for the students is a research paper addressing the theme of the course where the students are expected to address the question from the perspective of a particular philosopher that they get to choose. The assessment is done in phases to allow students to understand the writing process for academic papers (starting with a literature review, outline, and then a paper). The doctoral students spend some seminar time introducing how to conduct an effective literature review, how to develop an outline for an academic paper (including developing a thesis statement), and how to structure a proper academic paper.

How might this be implemented in your discipline?

What are potential barriers to implementing this model?

Institutional and Departmental Context

Institution

In what ways could/should developing the links between research and teaching be strengthened…

- Through institutional awareness and institutional mission
- Through developing pedagogy and curricula
- Through developing research
- Through developing staff and university structures

Department

In what ways could/should developing the links between research and teaching be strengthened…

- By developing understanding of teaching and research relations
- By making it a consideration on staff appointments, promotion and appraisal and development
- By ensuring it is fostered through how staff roles are defined
- By developing effective synergies between research centres and programme planning teams
- By implementing university-wide programme requirements in ways that reflect department and disciplinary strengths and values

Jenkins et al. (2003). *Reshaping Teaching in Higher Education: linking teaching with research*, London: Kogan Page.

What are some of the key issues/problems with these ideas?

The Research Game in Academic Life

- Intensification of the management and organisation of research activities
- Differentiation of academics within departments over status/workloads
- Struggles over classification of research active/research inactive
- Lack of value perceived for teaching and associated work
- Questioning of academic identity

Lucas L. (2006). *The Research Game in Academic Life*. Maidenhead: SRHE/Open University Press.