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Academic Research and Teaching Quality: the views of undergraduate and postgraduate students

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ABSTRACT *Undergraduate and postgraduate students drawn from eight different disciplines at a UK university were asked to participate in structured discussions of the effects of lecturer research activity upon student learning. Both samples showed a substantial preponderance of positive over negative comments. In both groups, the frequency of positive comments about lecturer research activity increased as the quantity and quality of research in their discipline increased (as measured by Research Assessment Exercise [RAE] ratings). In the undergraduate samples, the frequency of negative comments about research also increased with RAE rating, while amongst postgraduates it diminished. Undergraduates and postgraduates showed consistency in articulating the benefits of lecturer research, including enhanced knowledge currency, credibility, competence in supervision and enthusiasm/motivation. Both groups were also consistent in identifying reduced availability of lecturers, competition with teaching, and curriculum distortion as negative effects of lecturer research activity. In addition to the 'generic' benefits of research identified by both groups, postgraduates emphasised the importance of the salience (interest, relevance and utility) of lecturer research to the content of their learning. Implications of the findings for pedagogic research and educational policy are discussed.*

Introduction

If you are setting people on the road to research then it's ... quite obvious, that if the lecturer isn't involved in research themselves, then how can they do this?
(Master's student: Anthropology)

I had the feeling that I've been one step further than the people who ... just have access to the book, which was a great feeling. (Master's student: Hospitality and Tourism)

You've got this, in the back of your mind, if you go and see someone, you know that you can't talk to them for too long, because they're always really busy, you know.
(Master's student: Environmental Management)

These are selected quotations from focus group discussions among taught postgraduate students at Oxford Brookes University, which illustrate their views and experience of staff research. Though set in one institution, the present study contributes to the developing

theoretical understanding of teaching/research relations, and the policy implications that stem from that understanding. We begin by reviewing the research on teaching/research relations; our data from postgraduate students is then discussed and compared with findings from a previous study at undergraduate level. After setting out our central findings, we suggest what we see as the practical and policy implications for course teams, departments, institutions and national systems.

The Context of Previous Research

Debate about the legitimacy and importance of research in universities has a long history. In *The Idea of a University* (1907, first published in 1858), John Henry Newman confidently declared that:

The university is a place of *teaching* universal knowledge.... [Its object is] the diffusion and extension of knowledge rather than its advancement. If its object were scientific or philosophical discovery, I do not see why a university should have students. (Newman, 1907, p. 106)

More recently, Radford & Holdstock (1996) surveyed parents of students at seven UK universities, receiving replies from 335 of the 640 questionnaires dispatched. Among other questions, they asked respondents to rate various suggested 'aims of universities' for importance on a five-point scale. The three most highly rated aims were these:

1. Research and discovering new knowledge (mean rating 4.52);
2. Teaching students (mean rating 4.48);
3. Learning and scholarship by academic staff (mean rating 3.87).

As consumers of the product offered by universities, parents of university students have an obvious stakeholder interest when the nature of universities and what they offer is under discussion. The aggregate opinion of this group is that universities exist both to advance knowledge and to teach students.

The vexed relationship between research and teaching, illustrated by the contrasting views reported above, has attracted both controversy and substantial research effort. While the bulk of academics seem agreed that the relationship between research and teaching is one of 'symbiosis' (Elton, 1986), 'mutuality' (Ramsden, 1994), or even 'synergy' (Ontario Task Force, 1994), this view has received little support from evidence so far reported, and has come under strong attack (Ramsden & Moses, 1992; Ontario Task Force, 1994). Alternatives to the traditional view range from the 'moderate' claim that teaching and research are independent, through to the more extreme claim that they conflict, to the radical view that they are incompatible (Ontario Task Force, 1994, p. 3).

Investigators using the correlational method proceed by finding one operational proxy for research and another for teaching, and then examine the extent to which the two proxies co-vary. The results have been unilluminating: Feldman (1987) reported a pattern of predominantly low *positive* associations; Centra (1983) found modest *positive* associations in some disciplines (e.g. social sciences), but not in others (e.g. natural sciences); Ramsden & Moses (1992) present data showing low but consistently *negative* correlations (see also Linsky & Straus, 1975; Hoyt & Spangler, 1976; Brew & Boud, 1995). The most recent and thorough review (Hattie & Marsh, 1996), which incorporates a meta-analysis of previous investigations, concludes that lecturer research activity and teaching quality are statistically independent.

The volume of research activity devoted to the relationship between teaching and

research has done little to reduce controversy. In a thoughtful and penetrating review, Brew & Boud (1995) comment that:

investigations of the link between teaching and research, of which there have been a large number, have failed to establish the nature of the connection between the two, or indeed, whether there is one. (p. 261)

Student perceptions on the effects of lecturer research on learning are evidently relevant to the debate, yet until recently few researchers have investigated the issue by asking students directly. There are honourable exceptions, such as Neumann (1994), Hawkins & Eisner (1987), Cumming *et al.* (1976), and Startup (1972). But the latter two studies are now rather dated, and Hawkins & Eisner only looked at dental students. Neumann (1994) commented that:

To date no studies have been located which directly examine the teaching research nexus with a focus on students' views. Given that students are the recipients of university teaching, and that arguments in favour of the existence of a nexus claim the benefits to teaching of academic research, students are a most important group to consider. (Neumann, 1994, p. 324)

Since Neumann's remark, a number of studies have been reported, such as Rowland (1996), that do focus on student experiences. Reviews of such studies have been provided by Neumann (1996) and Jenkins (2000). Elton (2001) has begun to deconstruct the controversy by arguing that whether research has a positive effect depends upon factors such as the type of teaching and the abilities of students. Elton builds upon the suggestion made by Breen & Lindsay (1999) that the view predominating amongst lecturers that research enhances learning may be fostered by the fact that academics were themselves atypical students, and so are the students who seek opportunities to interact with them. Amongst these recent qualitative studies, Jenkins *et al.* (1998) broke with the correlational tradition by asking undergraduate students from a range of disciplines to discuss lecturer research in small groups and analysing the resulting dialogue. Though students identified disadvantages arising from staff research, such as reduced availability to students, there was considerable agreement and greater emphasis amongst the undergraduate samples on perceived benefits. These included lecturer enthusiasm, currency of lecturer knowledge and scholarship, and enhanced credibility of individual staff members and the institution as a whole. The methodology of this study was qualitative, and did not attempt to quantify the relationship between student impressions of costs and benefits.

New Perspectives: the growth of postgraduate studies

The present study reports a quantitative analysis of the data discussed by Jenkins *et al.* (1998), and then reports both qualitative and quantitative data from a new investigation which replicates the original study using postgraduate instead of undergraduate students. The postgraduate students participating in the study are students on 'taught master's degrees' rather than students studying at postgraduate level via research. There are a number of good reasons for extending the original study in this way. Postgraduate students are a neglected group in the debate on the effects of research on learning, though they are crucial to the continuity of the university system, and their numbers are increasing. They are also an articulate and critical group that is likely to have given consideration to relevant issues. Postgraduate students often have closer relations with their teachers than undergraduates and so are more likely to be sensitive to reduced availability and aware of lecturer research

interests. It is also arguable that because of their advanced training, postgraduates are in a better position than undergraduates to make informed judgements about the impact of research upon the quality of teaching.

Over the past two decades, one of the main developments in higher education worldwide has been the growth of postgraduate studies. Knight (1997) observes that. 'Coursework master's courses have proliferated in old industrialized countries and the signs are that the same is happening in industrializing countries' (p. 149). In Australia, for example: 'post-graduate course work and research training have expanded proportionally more than undergraduate work, enrolments doubling over 1988–98 as against a 50 per cent increase for undergraduates' (Karmel, 1999, p. 1). Knight (1997) comments:

'Clearly, master's students are not a breed apart. Plainly there is much to be learned from research into undergraduate teaching and learning. However, there are sufficient differences to make it unwise to believe that good practice for taught master's students can simply be read off from research with undergraduates or PhD students, as if we were using the academic equivalent of miles to kilometres conversion table. (p. 3)

Researchers interested in the teaching–research nexus have already begun to respond to the growth in size and importance of the taught postgraduate sector. Kyvik & Smeby (1994) reported a positive effect of supervising graduate students on the research productivity of faculty. Rowland (1996) has explored the subtle but productive ways in which senior academics believe that teaching and research activities interpenetrate. Mullen (2000) has demonstrated how, by active involvement in research, graduate students can 'begin to move beyond their traditional research conditioning to take risks, to work as a team, and to include artistry in their work' (p. 20). The value of qualitative approaches has been demonstrated most recently by Robertson & Bond (2001) who present evidence that academic staff experience the relation between teaching and research in qualitatively different ways, and suggest that how the relationship is perceived in turn affects student learning. The present study tries to use qualitative data to further explore student perceptions of how research affects their learning. Quantification of the qualitative data is used to demonstrate that a positive perception of effects of research is present in the data, rather than being introduced by the process of qualitative analysis itself. Finally, the experiences of undergraduate and postgraduate students are compared in an attempt to understand how research affects the two groups.

Method

1. The Focus Group Facilitation Schedule

In both the Jenkins *et al.* (1998) study and the postgraduate study, lecturer research was discussed in small groups ('focus groups') of 4–6 students. To promote comparability and to make quantitative comparison meaningful, discussion was tightly structured by using facilitators who adhered closely to a *Focus Group Facilitation Schedule*. Facilitators were lecturers or research assistants who did not teach the students in the focus groups they facilitated. The Facilitation Schedule was constructed in advance of either of the main studies, based initially on discussion between the investigators, but refined through a pilot using a group which was not included in the final sample. Within the Schedule, items which directed participants to explore a fresh topic were called *Initiators*. For many Initiators, *Supplementaries* were also constructed for use when discussion became locked into some aspects of an issue and

I3.	Do you know anything about any of your lecturer's research?
I3S1.	Has lecturer research (in RELEVANT DISCIPLINE) had any impact on your own learning?
I3S1P1.	Research might have impinged upon you through: Seeing lecturers' work in the library Research-based seminars Participation in research Contact with research students/assistants Mention in lectures Textbooks/assigned reading
I3S2.	Did you find your contact with academic research valuable?
I4.	Have any of your lecturers in (name of RELEVANT DISCIPLINE) ever based teaching upon their own research?
I4P1.	Have lecturers used their own research: In seminars In lectures In practical/laboratory classes For assigned reading
I4S1.	What is your attitude to lecturers' use of their own research?

FIG. 1. Examples of Initiators, Supplementaries and Prompts used by focus group facilitators (**I** = Initiator; **S** = Supplementary; **P** = Prompt).

<p>The session in which you are about to join is part of a study which tries to explore students' experience and understanding of academic research, and how it affects them. The focus of interest is your beliefs and your experience; there are no 'correct' views which you are hoped or expected to express. Nothing more is asked of you other than to do your best to clearly express what your beliefs and experiences are.</p> <p>I (the investigator) will give you a question to start you off, which I hope will spark off a group discussion.</p> <p>Once the discussion has started to flow, I will play as small a part as possible. If you get off track, I may remind you of the issue.</p> <p>When the main issue has been covered fairly thoroughly, I will sometimes give you a supplementary question which is intended to direct your attention to some particular aspect or consequence of the topic you are discussing.</p> <p>If you seem to have run out of things to say, I will sometimes give you a prompt to refocus discussion on a specific issue.</p> <p>For the purposes of this study, 'research' means: creating new knowledge; making an original contribution to a discipline of the kind published in learned journals. It excludes work involved in preparation of teaching materials.</p>
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FIG. 2. Briefing text used to explain focus group procedures to students.

threatened to neglect others. Finally, *Prompts* were available when discussion faltered before important aspects of an issue had been covered (see Fig. 1).

2. The Briefing Text

Focus group facilitation was carried out by several investigators, so great care was taken to ensure uniformity of procedure. The organised list of Initiators, Supplementaries and Prompts was accompanied by the *briefing text* presented in Fig. 2, which explained the purpose and procedure of the sessions to participants, and provided a working definition of 'research'.

- (a) Each facilitator will lead a focus group interview of 4–6 students drawn from disciplines identified in a separate list. All students in a particular group will be drawn from the same discipline.
- (b) The duration of the interview will be 1.5–2.0 hours.
- (c) The interview will be taped.
- (d) The interview will fall into three phases:
 - (i) personal experience of research impact within specified subject;
 - (ii) general conception of research and its role in higher education;
 - (iii) (optional) issues arising.
- (e) The interview will be organised around an agreed common schedule which is relatively tightly structured in (i), loosely structured in (ii) and unstructured in (iii).
- (f) Student participants will be paid a fee of £7.50 for participation.
- (g) Participants will be selected at random from a list of students in each discipline.

FIG. 3. Guidelines for focus group facilitators.

3. Guidelines for Focus Group Facilitators

Facilitators were responsible for making contact with students and arranging the time, place and composition of the interview sample. To standardise this part of the procedure facilitators were provided with a list of students from each of the disciplines covered by the study and the guidelines in Fig. 3.

4. Collection and Treatment of Data

(a) *Qualitative analysis.* Focus group sessions were held late in the academic year to ensure that students had become sufficiently familiar with staff and students to make informed judgements. Interview tapes were transcribed and investigators were provided with transcripts of the focus group sessions. For the purposes of qualitative analysis, all investigators began with a loose analytic framework developed in exploring the data from the pilot study, derived their own scheme for categorising discussion data and, finally, attended joint sessions at which the preliminary analyses of data from all eight focus groups were integrated.

(b) *Quantitative analysis.* A method of quantitative analysis was sought primarily to provide numerical scores that could be statistically related to Research Assessment Exercise (RAE) ratings. A secondary benefit is that the researcher judgements upon which the quantitative analysis was based are very simple and less prone to researcher bias. For example, in the first such analysis, each sentence was categorised as positive towards research, negative towards research or irrelevant. Because the focus group context encouraged free discussion, most of the sentences produced were classified as irrelevant, often because they reported personal reminiscences or provided factual scene-setting for more evaluative judgements.

Various attempts were made to take into account the degree or intensity of positive and negative statements, but these attempts were unsuccessful for two reasons. One was that whilst there was very high inter-judge agreement on simple judgements that sentences were positive or negative with respect to some issue, the reliability of judgements of degree was unacceptably low. Secondly, statements usually contained both a positive or negative evaluation, and a reason for making it. Judgements of degree thus become matters of opinion about the strength of reasons and this both blurs the boundary between quantitative and qualitative analysis, and undermines the reason for undertaking the quantitative analysis in the first place, i.e. the relative simplicity and freedom from bias of the judgements upon which it is based.

Quantitative analysis of the undergraduate data was carried out by a research assistant who had not been involved in model construction, and was ignorant of the hypotheses being tested. They were provided with operational definitions where necessary. For example, a 'sentence' was defined as 'whatever occurs between two full stops, or between the word "but" and the next full stop' in the focus group transcripts. The 'but' clause was introduced because this conjunction was frequently used to combine two simple and often divergent sentences into one. Quantitative analysis of the postgraduate data was carried out by one of the investigators. One of the focus group transcripts was also analysed by a separate researcher who was unaware of the issues under analysis using the same category labels and definitions derived by the investigators as a reliability check. The investigator and the separate researcher agreed on over 80% of the sentences categorised. They collaborated to recategorise the remaining 20% of sentences where disagreement lay and the remaining interviews were double-checked for any similar ambiguities.

The dialogue data was also analysed as *discourse contributions*; that is, a sentence was only included in the count if it was judged to make a new and substantive contribution to the dialogue. This mode of analysis showed exactly the same pattern of results as the raw sentence count. Whereas in the undergraduate study all sentences or dialogue contributions which referred to research or teaching were tabulated, treatment of the postgraduate data was more focused, and in analysing this sample only sentences referring to the effects of research upon teaching were counted. For this reason frequencies and percentages reported for the postgraduate sample tend to be much smaller.

5. Quantifying Research Activity

As a proxy for the quantity and quality of research activity in departments, the rating of research produced by the RAE was used. The RAE is a (roughly) quinquennial evaluation of the research output of university departments based upon a peer review procedure. RAE reviews occurred in 1992, 1996 and 2001. The reviews result in a numerical indicator of quality for each department, and the amount of government funding for research is then determined by this score.

6. Sample Structure

(a) *The undergraduate sample.* Analysis of the pilot focus group data suggested that both discipline and discipline type are relevant features of area of study. Full-time year of study was also important because first years had not always had time or the opportunity to become aware of staff research activity. Level of research activity was controlled by using two areas of study gaining relatively high ratings (3 or 4) in the 1992 RAE assessments, two areas gaining moderate ratings (2) and four areas earning relatively low ratings (1).

(b) *The postgraduate sample.* The postgraduate sample was drawn from taught master's courses in the group of disciplines from which the undergraduate sample was drawn. A minimum level of experience on the course was imposed, which restricted the sample to those who had completed at least two terms full-time or four terms part-time. In some cases, the taught master's courses were either more general or more specific than the equivalent undergraduate discipline. The disciplines used for the undergraduate sample and the corresponding taught master's courses are shown in Table I.

Results

(i) Undergraduate Sample

Data presented in Table II indicate that the average percentage of research-positive sentences (19.5%; $n = 95$) is almost double the average percentage of research-negative sentences (9.8%; $n = 52$). A χ^2 test on the data in Table II showed that these differences are highly significant ($\chi^2 = 471.7$; $df = 14$; $p < 0.00001$). A χ^2 goodness-of-fit test showed that the number of positive sentences was significantly greater than the negative sentence frequency for all disciplines.

Table III shows that the ratio of positive (average 14.5%) to negative sentences (average 7.8%) about teaching is about the same as that for sentences about research, although the percentages of both are smaller, and there is a considerable range of variation across disciplines (low = 9%, high = 25%). Half of the focus group samples were first year students and half were third years, as the investigators thought it likely that knowledge about and attitudes towards research and its effect upon teaching would change as students gained in experience. In fact, there were no significant differences by year of study, with respect either

TABLE I. Disciplines from which focus groups were drawn and numbers in each group in the undergraduate sample, and corresponding data for master's courses included in the postgraduate sample

Undergraduate course	No. in focus group	Postgraduate course	No. in focus group
Biology	4	Environmental Management	4
Adult Nursing	5	Advanced Health Care Practice	6
Planning Studies	5	Urban Planning	4
Hospitality Management Studies	6	International Hospitality and Tourism Management	6
English Studies	5	Modular Arts	5
Anthropology	6	Anthropology of Japan	5
Business Administration	5	International Management	6
Educational Studies	5	Education	6

TABLE II. Number of sentences categorised as positive, negative or irrelevant with respect to research, used by undergraduate students from a variety of disciplines in focus group discussions (percentages in brackets).

Discipline	Positive sentences	(%)	Negative sentences	(%)	Irrelevant sentences	(%)
Biology	207	(28)	61	(8)	465	(64)
Adult Nursing	95	(35)	58	(22)	116	(43)
Planning	85	(22)	58	(15)	236	(62)
Hospitality Management	101	(16)	43	(7)	470	(77)
English	143	(16)	51	(6)	707	(78)
Anthropology	161	(14)	64	(6)	937	(81)
Business Administration	26	(4)	13	(2)	692	(95)
Education	175	(21)	106	(13)	541	(66)

Note: in this and other tables, percentages do not always sum to 100 because of rounding error.

TABLE III. Number of sentences categorised as positive, negative or irrelevant with respect to teaching, used by undergraduate students from a variety of disciplines in focus group discussions (percentages in brackets).

Discipline	Positive sentences	(%)	Negative sentences	(%)	Irrelevant sentences	(%)
Biology	130	(18)	77	(11)	526	(72)
Adult Nursing	67	(25)	28	(10)	174	(65)
Planning	38	(10)	35	(9)	306	(81)
Hospitality Management	53	(9)	17	(3)	544	(89)
English	78	(9)	68	(8)	755	(84)
Anthropology	120	(10)	68	(6)	974	(84)
Business Administration	131	(18)	30	(4)	570	(78)
Education	141	(17)	91	(11)	590	(72)

to research or teaching. This may be because student beliefs are formed early and do not readily change, or perhaps because students get so little explicit information about staff research that there is no reason for belief change to occur.

Table IV shows the relationship between RAE rating and the number of positive and negative dialogue contributions related to research and teaching. X^2 analysis showed that there was a significant association between both RAE rating and research ($X^2 = 43.1$; $df = 4$, $p < 0.01$) and RAE rating and teaching ($X^2 = 11.8$; $df = 4$; $p < 0.05$).

Comparison of observed with expected values for research-related dialogue contributions suggests that positive and negative frequencies co-vary; that is, as RAE rating increases, so do both the perceived benefits and perceived disbenefits associated with research. If RAE rating decreases, then frequencies of both positive and negative dialogue contributions decline. This pattern holds for categorisation by both 1992 and 1996 RAE ratings.

While the association with RAE rating remained significant for teaching-related dialogue contributions, the reduced χ^2 value shows that it was much weaker than for research. There seems to be no consistent relationship between positive dialogue contributions and RAE rating. Negative dialogue contributions, however, increase in frequency as RAE rating increases. Positive benefits in research are equally likely to be perceived in all departments, but the frequency with which disadvantages are articulated increases in departments in which research activity is greater.

Overall, the data in Table IV leave little room for doubt that positive and negative dialogue contributions are associated with amount of research activity in a discipline as indexed by the 1992 RAE rating. It is also clear that the association, though stronger for research-related contributions, also holds for teaching-related ones. For teaching, the number of negative comments about teaching increases as RAE rating increases. Positive comment frequency also increases and decreases with RAE rating, but the effect is smaller. For research-related dialogue contributions both positive and negative frequencies increase directly with increases in RAE rating.

(ii) Postgraduate sample

(a) *Quantitative data* Table V shows that postgraduates produced 177 dialogue contributions which were positive about research, and only 45 which were negative. When attention is restricted to comments about the impact of research and researcher attributes on teaching,

TABLE V. The overall number of positive, negative and irrelevant dialogue contributions related to lecturer research activity and its impact upon teaching by a sample of postgraduate students drawn from eight different disciplines (percentages in brackets).

	Positive (%)	Negative (%)	Irrelevant (%)
Lecturer attributes and research	27 (11)	0 (0)	0 (0)
Research-related sentences	43 (17)	8 (3)	14 (6)
Impact of research and researcher attributes on teaching	107 (42)	37 (15)	14 (6)
Total research related comments	177 (71)	45 (18)	28 (11)

107 comments were positive compared with only 37 negative comments, a ratio of three positive dialogue contributions for every one which was negative. Table VI shows that the preponderance of positive over negative comments observed in the totals was also observable in seven of the eight samples. The exception was the discipline having the lowest RAE rating in the sample. Data in Table VII provides further confirmation that there is a relationship between the amount of research activity in a department as indexed by RAE rating, and the frequency of positive versus negative comments about the effects of teaching on research. For both categorisation according to the 1992 ($\chi^2 = 31.42$; $df = 4$; $p = 0.00001$) and the 1996 ($\chi^2 = 9.49$; $df = 4$; $p = 0.05$) RAE ratings, there is a significant association between RAE ratings and the positive or negative valence of comments. Table VII shows that as RAE rating goes up, the percentage of positive comments tends to increase, and the percentage of negative comments tends to decrease. The lower χ^2 values for categorisation by the 1996 ratings (which involved a number of promotions, but no demotions compared with 1992) suggests that as differences in RAE ratings diminish, so too do differences in valence frequency. This pattern is quite different from the pattern observed in the undergraduate data reported in Table IV. In the undergraduate sample, the frequency of negative comment increases instead of tending to decrease with higher RAE ratings

(b) *Qualitative data.* The quantitative data indicates that there is a preponderance of positive over negative comments about lecturer research activity. There was also a narrower range of negative than positive issues, and though all except one of the negative features complained of by postgraduates was also complained of by undergraduates, some research-related issues complained of by undergraduates did not arise in postgraduate discussions. Jenkins *et al.* (1998) reported the following disadvantages associated with research-active lecturers:

- (a) they were less available to students;
- (b) they were sometimes preoccupied with research at the expense of teaching;
- (c) research interests could distort the curriculum;
- (d) undergraduate students did not perceive themselves as 'stakeholders' in research.

In the postgraduate sample, the 'stakeholder' issue did not arise, and positive comments made it very clear that postgraduates did see themselves as stakeholders. However, a new

TABLE VI. The number of positive and negative dialogue contributions related to the impact of research upon teaching produced by postgraduate students in eight focus groups drawn from different disciplines (percentages in brackets)

Discipline	Positive sentences	Negative sentences	Irrelevant sentences
Biology	20 (2.8)	5 (0.7)	683 (96.5)
Nursing	9 (1.1)	5 (0.6)	828 (98.3)
Planning	4 (0.8)	2 (0.4)	488 (98.8)
Hospitality Management	14 (2.7)	7 (1.4)	492 (95.9)
Humanities	13 (1.8)	3 (0.4)	690 (97.7)
Anthropology	14 (1.7)	1 (0.1)	823 (98.2)
Business Administration	1 (0.2)	12 (0.4)	502 (97.4)
Education	22 (4.8)	2 (0.4)	437 (94.8)
Total	107 (2.1)	37 (0.7)	4943 (97.2)

Table VII. Percentage of dialogue contributions produced by postgraduate students in focus group discussions categorised as positive (+), negative (−) and irrelevant (I) with respect to teaching and research and grouped by outcome of the 1992 and 1996 Research Assessment Exercises (percentages in brackets).

RAE RATING	Impact of research on teaching +		Impact of research on teaching −		Impact of research on teaching I	
	1992	1996	1992	1996	1992	1996
High	38	26	8	4	1994	925
(%)	(1.9)	(2.7)	(0.4)	(0.4)	(97.7)	(96.9)
<i>n</i>	2	4	2	4	2	4
Medium	58	34	17	6	2447	1506
(%)	(2.3)	(2.2)	(0.7)	(0.4)	(97.0)	(97.4)
<i>n</i>	2	3	2	3	2	3
Low	1	37	12	27	502	2512
(%)	(0.2)	(1.4)	(2.3)	(1.0)	(97.5)	(97.5)
<i>n</i>	3	1	3	1	3	1

category of negative comments focused on research content: postgraduates thought that lecturer research should be useful/interesting/relevant. It seems that the perception of themselves as stakeholders by postgraduates legitimates a judgement on the relationship of lecturer research to their own learning:

If their research is too academic, and it's not related to what you're doing then you don't necessarily get the point, and you find it unvaluable, because you can't really use this.
(Master's student; Hospitality and Tourism)

The perceived benefits of lecturer research reported among undergraduates by Jenkins *et al.* (1998) were:

(a) Knowledge currency:

You also need the research to be at the cutting edge, because there's no point in doing a

course to find out that it's outdated when you get in the real world. (Master's student: Environmental Management)

(b) Credibility enhancement:

when he's talking about his own research, it also teaches you, somehow: we'll learn and listen to him, because you think, 'Okay, he's well respected in his field', and you really want to learn from him. (Master's student: Hospitality and Tourism)

(c) Competence in supervising project work:

She talked about using a Q-Sort in research that she did earlier, and that's encouraged me to actually use the same methodology. (Master's student: Education)

(d) Enthusiasm/motivation:

I think if they're actively researching areas, then it's going to bring enthusiasm and greater knowledge and improve skills of their teaching as well. (Master's student: Education)

Categories (a) and (c) together accounted for the majority of positive comments among the postgraduate sample, with (c) appearing in various forms on 25 occasions and (a) appearing eight times. Though instances of (b) and (d) occurred less frequently, this may well be because both categories imply relative judgements which are less salient for postgraduates because a considerable proportion of their lecturers is likely to be research active. A new category of positive comment that was repeatedly encountered related to the relationship between lecturer research and student learning. This recurred no less than 15 times and is illustrated by the following comments.

She knows really, where the system started, and how the theory developed, and how it's used today, and its limitations in being used today. (Master's student: Environmental Management)

he knew straight away, within the area I was interested, what was the most relevant and up-to-date issue in that sort of field, and he could say directly because of his research. (Master's student: Environmental Management)

you get one of the lecturers coming in and saying 'we're just going to have a look at this. I've just been writing this'. And it's fascinating. You dovetail it into what you're doing, and you get a different perspective. (Master's student: Humanities)

Discussion and Conclusion

Summary of Findings

The results of the investigations of undergraduate and postgraduate perceptions of lecturer research fit together rather well, and the quantitative and qualitative studies also seem to be mutually reinforcing. Taken together, the studies support the following generalisations.

- Both undergraduate and postgraduate students associate more benefits than disadvantages with lecturer research.
- Both samples agree that *knowledge currency*, *credibility*, *competence in supervision* and *enthusiasm/motivation* are enhanced by lecturer research activity.

- Postgraduates commend *salience* when lecturer research directly benefits their own learning.
- Both samples associate some disadvantages with lecturer research, including *reduced availability*, *competition with teaching*, and *curriculum distortion*.
- Undergraduates feel excluded from direct involvement in research as stakeholders.
- Postgraduates think research impacts negatively when it lacks salience (the key terms used in discussion were *interest*, *relevance* or *utility*).
- Both samples make a considerably greater number of positive than negative statements about lecturer research activity.
- Both samples make a greater number of positive statements about research as the amount of research activity in their department increases.
- Undergraduates make a greater number of negative statements about teaching as the amount of research activity in their department increases.
- Postgraduates make a greater number of positive statements, and a smaller number of negative statements about the effect of research upon teaching as the amount of research activity in their department increases.

Implications for the Research Agenda

The results we have reported demonstrate the value of a methodology which directly asks students to present their experience instead of using correlations to support inferences about the effects of lecturer research. Bahram Bekhradnia, the Director of Policy for the Higher Education Funding Council for England (HEFCE), has lamented that 'I have not seen any convincing empirical evidence for a causal relationship between teaching and research' (Bekhradnia, 1998, p. 5). Asking for a 'causal' relationship, as one might in the physical sciences, may presently be to ask for the impossible. But the present investigations have at least yielded 'convincing empirical evidence' that students (as 'consumers' of teaching) believe that there is a relationship, and that this relationship is a positive one.

The present study has sought to respond to the call by Brew & Boud (1995) for researchers to move away from the previous emphasis on correlational studies to 'more fine-grained studies'. We think that the methodology of the study reported here shows how qualitative and quantitative analyses, in this case using focus group dialogue, can be mutually illuminating and supportive. This more direct and focused methodology has generated a consistent set of data that seems to support the 'conventional' wisdom of many, perhaps most, academics that synergies occur between research and teaching.

Previous research has mainly focused on correlations between proxy measures of research activity and teaching 'quality'. In this context, the caveats in the conclusion to one of the best known of these correlational studies is central to what we see as the implications of our research. Ramsden & Moses (1992) analysed teaching–research relationships at the level of the individual and the department in a range of Australian universities. The authors interpreted their study to show that there is 'no evidence in these results to indicate the existence of a simple functional relationship between research output and the effectiveness of undergraduate teaching' (p. 273). However in their conclusion, Ramsden & Moses note that:

the findings are based on studies of association, rather than of functional mechanisms, and therefore cannot reveal the existence of a sequence of cause and effect ... It seems entirely plausible that heavy involvement in research and publication, at least for some academic staff and departments, take time and effort away from teaching undergraduates. However it is crucial to understand that the *present*

evidence in no way refutes the proposition that the continuing study of and intellectual curiosity about a subject is necessary for effective teaching. Our results indicate that the simple model of more research, therefore better teaching is suspect. (pp. 292–293; emphasis added)

We would now comment that the linked studies we have carried out at undergraduate and postgraduate level appear to reinforce and confirm the conventional wisdom that lecturer research does confer benefits upon student learning. The positive effects we report are generic benefits of research: we have not attempted to differentiate between different kinds of research. The briefing notes we provided to participants (see Fig. 2) provide a definition of research that best fits discipline-based research, but it remains an open issue whether changing this definition would also change student judgements of its value.

The present research also points to the need for ‘fine-grained studies’ to consider more carefully the particular contexts of learning, including the *academic level*, the *academic discipline* and variables such as level of research activity associated with the *university department*. Related investigations carried out by the Oxford Brookes research group suggest that student motivation is also a relevant variable (Breen & Lindsay, 1999; Jenkins *et al.*, 2002). These studies suggest that a positive attitude towards research is dependent upon a conception of research as *relevant* and *salient* to students’ goals and motivations. The latter study indicates that students of applied postgraduate subjects may have less positive attitudes towards research than those of other subject areas, indicating that currently, salience is less successfully achieved in these disciplines.

Whilst in general our studies certainly indicate positive effects and attitudes to lecturer research at undergraduate level (including year one), they also give particular weight to the importance of such research to student learning at postgraduate level. The importance of a research base to postgraduate teaching has often been proclaimed but infrequently investigated. Thus, in the UK, the Robbins Report (1963, para. 555) stated that ‘in the graduate school there are no ultimate authorities, no orthodoxies to which the pupil must subscribe’. The American scholar, Burton Clark (1993), encapsulates the consensual assumption in the title of his study of postgraduate education in a range of countries—*The Research Foundations of Graduate Education*. The relatively few research studies at graduate level do reinforce this widespread perception. Neumann studied student and senior administrators’ (heads of department and above) views of the relationship between teaching and research in a large Australian research university. Both samples saw the ‘teaching—research nexus’ as important, and for the administrators, the ‘teaching and research nexus at graduate level was forcefully affirmed ... (while at undergraduate level it) is quite complex’ (Neumann, 1992, p. 167).

Smeby (1998, p. 10) analysed staff perspectives on teaching and research by surveying staff views in all four Norwegian universities and interviewing staff at Bergen and Oslo. ‘Faculty were asked about the extent to which they thought their research influenced their teaching. Very many teachers thought this was the case to a great extent at post-graduate level, while there were a few who thought this at a lower level.’ The studies reported here from Oxford Brookes do give added weight—from a student perspective, in one UK institution—to the value of staff research to student learning, and support the view that this value increases at postgraduate level. The study of Brookes postgraduates also adds to a small but growing body of research that has sought to gain a better theoretical understanding of postgraduate pedagogy, including analysing ‘what is “good” and “bad” teaching ... and ... how and why might teaching in this instance be located within a more comprehensive “understanding” of “pedagogy”?’ (Green & Lee, 1995, pp. 40–41).

Implications for Practice and Policy

Postgraduate students and postgraduate courses are a rapidly growing element of many higher education systems. Taught master's students frequently seek courses that meet specialised professional and personal concerns and they are 'discerning and frequently demanding students.' (Knight, 1997, p. 3). Postgraduate students often pay directly for their education and, arguably as a result, their perceptions of what they receive have added force both for themselves, and for departments and institutions seeking to attract them and meet their needs. The present study clearly demonstrates that student perceptions of 'quality' postgraduate pedagogy incorporate a requirement for courses to be, at least in part, research based, and taught by staff with current knowledge of research in the discipline.

There are hard edges to these perceptions to do with costs, staff availability and 'salience'. Concerns about staff availability, which were a strong feature of undergraduate attitudes, re-emerged with equal force in the postgraduate sample, often with a financial spin to the same general concern. As one Planning student put it:

Well, when you want to see a lecturer and he is off somewhere, you see it as *you* and *your* life. Why the hell is he not available for me and I am paying fees? Especially if you are a foreign student [who pay higher fees than UK-domiciled students] ... I always think about my £7,000 and why am I paying it when they are not available.

As with undergraduate perceptions of staff research (Jenkins *et al.*, 1998), one clear policy implication is that individual staff, departments and institutions have to find strategies to meet postgraduate student concerns with respect to the effects of involvement in research upon staff availability. But the study of postgraduates introduces a new issue, that of 'salience', which individual staff, course teams and departments should also seek to take into account. For, just as Knight argues that we should not simply read off good practice at master's level from what we know of undergraduate pedagogy (Knight, 1997) so we should not assume that what was 'quality' postgraduate pedagogy some 20–30 years ago continues to meet the needs of current postgraduates. In the context of the 1963 Robbins Report, most postgraduates were motivated by academic concerns and many were seeking an academic career. Such students would readily have appreciated strong research- and theory-driven postgraduate courses. The same assumptions do not hold today. The recent growth of postgraduate education appears to be fuelled by students (many of them in professional careers) seeking a qualification to help them advance in careers outside academia. This is illustrated by another comment, also from a Planning student:

There is a problem with academics in their ivory towers and, you know, all the research in the world does not make any difference if it's not relevant. And I think it's slightly different with Planning because it's such a practical subject, and they have to keep up to date. But sometimes, God only knows if their research is relevant to anything related to current issues, ... particularly the more theoretical tutors that we have.'

Views such as this do not mitigate the obligation to ensure that students are fully exposed to theoretical concerns. It does mean, though, that course teams have to devise formal and informal curriculum strategies to show that such research is 'salient' to student concerns, including in part the induction of a belief that choosing the course was an economically sound decision. Such strategies will often be very course-specific, but might involve, for example: ensuring that presentation of abstract theory is at some point followed by demonstrations of how this theory can be used to inform practice, or inviting former students back

to report on how theoretical material is now being used by them to shape policy. Reflexively, it may be helpful to draw the attention of students to research and policy debates which indicate that understanding the research process and being able to carry out or manage research studies may be central to employment in the new 'knowledge economy' (Seltzer & Bentley, 1999).

Implications for Institutional and National Practices and Policies

Somewhat more speculatively, we think that the study we have reported raises important questions and implications for practice and policy at departmental and institutional levels (see Jenkins *et al.* 2002, for a fuller discussion of these issues). In particular, higher education institutions should seek to ensure that effective synergies occur between research active staff/academic research teams and undergraduate, and perhaps particularly, postgraduate teaching. Departments and institutions must avoid the organisational dangers identified by Clark (1993):

Research, teaching and study can exist in not so splendid isolation, with full time research staff in one corner, some teaching staff off in one corner and only slightly guided, if at all, by the results of recent research, and students studying in another corner, with codified text in hand but out of the sight of research activities and peering at distant teachers as if through the wrong end of a telescope. (p. 301)

The studies we have reported reinforce the argument that we and others have made for the development of explicit strategies that consider teaching and research together and seek to strengthen their potential linkages. This applies at institutional and at national level in the context of the allocation of institutional and national funding, and of course and institutional audits (Jenkins, 2000). In the UK, this essential element of strategic thinking does not seem to feature on the agenda of funding councils. The recent Fundamental Review of Research states, 'Despite the evidence of a synergistic relationship between teaching and research, we make no recommendation about this: it would be wrong to allow teaching issues to influence the allocation of funds for research' (HEFCE, 2000, para. 175, 76). That review is effectively silent on the growth of postgraduate studies, and how this might or should shape the funding and organisation of research. We remain hopeful that at some point in the future policy-makers will listen to and act on the kind of findings we have reported, and attempt to ensure that the impact of national, institutional and department policies on teaching-research relations are rigorously researched. For as we think the present study demonstrates, the pedagogic research agenda in this area needs to move away from a concern with individual academics and their qualities as teachers or researchers, and move on to examine 'the circumstances in which teaching and research have occasion to meet' (Hattie & Marsh, 1996, p. 533).

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