Research Papers in Education
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713707783

Balancing rigour and responsiveness in a shifting context: meeting the challenges of educational research

Mary James [a]
[a] Institute of Education, University of London. UK

To cite this Article: Mary James , 'Balancing rigour and responsiveness in a shifting context: meeting the challenges of educational research', Research Papers in Education, 21:4, 365 - 380
To link to this article: DOI: 10.1080/02671520600942354
URL: http://dx.doi.org/10.1080/02671520600942354

Research Papers in Education
Vol. 21, No. 4, December 2006, pp. 365–380

Balancing rigour and responsiveness in a shifting context: meeting the challenges of educational research

Mary James*
Institute of Education, University of London, UK

'Learning how to learn—in classrooms, schools and networks' (LHTL) was a major school-based development and research project within the ESRC Teaching and Learning Research Programme. As such it was expected to work towards fulfilment of TLRP aims to work for improvement in learning outcomes, in authentic learning and teaching contexts, using multidisciplinary approaches and enhancing research capacity whilst making fundamental contributions to knowledge and, at the same time, working in partnership with users to achieve impact on policy and practice. These were ambitious goals. This article describes how the LHTL project confronted these challenges and what was learned as a result. The benefit of finding ways to build the social capital of educational research and to promote collective, open and reflective debate with user communities was, in the end, felt to outweigh the considerable costs.

Keywords: *Project management; Research capacity building; Research design; TLRP accountability; User engagement*

Expectations placed upon projects within the Teaching and Learning Research Programme

This article provides some reflections on the challenges and dilemmas faced by a project team working within the Teaching and Learning Research Programme (TLRP): the biggest investment managed by the Economic and Social Research Council (ESRC) and the largest coordinated programme of educational research ever in the UK. The experiences of one project, its attempts to resolve the issues, and the lessons learned, are offered as commentary on goals and management in educational research in general, and within TLRP in particular.

*Institute of Education, University of London, 20 Bedford Way, London WC1H 0AL, UK. Email: m.james@ioe.ac.uk

ISSN 0267-1522 (print)/ISSN 1470-1146 (online)/06/040365–16

DOI: 10.1080/02671520600942354

Like many other projects within the TLRP, 'Learning how to learn—in classrooms, schools and networks' (LHTL)[1] was an attempt to design and execute a collaborative development and research project with the twin goals of achieving high relevance and high 'scientific' quality—to work in Pasteur's Quadrant (Stokes, 1997). The university departments from which team members were drawn have traditions of carrying out high quality research for the benefit of pupils, teachers and schools but the challenges for the project were still considerable. In an early conference paper we characterized this as the need to serve two masters (James *et al.*, 2003a) because of the need to respond to the expectations of communities of scholars, on the one hand, and communities of policy-makers and practitioners on the other.

The adoption of a responsive mode was, in essence, a condition placed upon the project through participation in the TLRP. With a level of investment around £40m supporting 60+ projects, networks, fellowships and seminar series over ten years from 2000, expectations are understandably high. Each project within TLRP is expected to:

- work to achieve significant improvements in learning outcomes for identified groups of learners;
- work in authentic settings of teaching and learning;
- bring multidisciplinary or interdisciplinary approaches to research;
- enhance the capacity for a research-based approach to education and training practices;
- work in partnership with practitioners, learners, policy makers and others in the research community, to achieve maximum impact through transformation of the research results into actionable strategies and practices;
- make research-based contributions to the fundamental understanding of teaching and learning.

Each of these expectations was itself a response to concerns about the quality and impact of educational research which had been articulated in recent years, in the UK and elsewhere (for more detail see Pollard, 2005).

On both sides of the Atlantic there have been vigorous debates about the kinds of research that provide the best basis for 'evidence-informed policy'. In the US, the debate revolves around what counts as 'scientifically-based research'. For example, a special issue of *Educational Researcher* (2002, 31(8)) encouraged a 'dialogue' on what this means in education - an invitation that was readily taken up in subsequent issues. In the UK, the focus is similar but extends to encompass, perhaps more fully, issues concerning the contribution of users to the research enterprise and how knowledge from research can be transformed in ways to achieve impact in communities of practice.

In the US, federal policy now seeks to mandate certain methods, namely experimentation in the form of randomized control trials.[2] The response of the UK Government to these debates, especially to the criticisms of Hillage *et al.* (1998) and Tooley and Darby (1998) has not been to mandate particular kinds of educational research but to challenge educational research to find its own robust answers to the

legitimate questions posed in these debates. Hence the expectations that were placed upon TLRP, which, although funded by the Higher Education Funding Council for England, Department for Education and Skills, Scottish Executive, Welsh Assembly Government and the former Northern Ireland executive, is managed by the ESRC to provide a suitable degree of independence from direct Governmental control. In this article, the practical ways in which the LHTL project attempted to respond to these concerns and expectations are discussed, as well as its efforts to maintain the coherence of a complex research design in the messiness of the real world of education policy and practice.

Educational research may well be 'the hardest science of all' (Berliner, 2002) yet this is rarely reflected in standard texts on educational research methods which often give the impression that, whichever 'paradigm' is chosen, it is mostly a matter of rational judgement and systematic application of principles and procedures. Only a few books on educational research (see Walford, 1991; Burgess, 1993) reveal the extent to which *doing* educational research is a values-laden, human activity conducted in social settings which rapidly change and often defy control. It is a major challenge to preserve the integrity of the research enterprise whilst responding appropriately to expectations and changing circumstances. In the account given below, the TLRP expectations are used as a framework for discussion.

Working to achieve significant improvements in learning outcomes

The primary aim of the TLRP is to work to improve outcomes for all learners. This is a bold ambition that raises important and difficult questions for researchers. Unless projects choose to evaluate 'natural' experiments—for example the introduction of a pilot initiative from Government compared with the status quo using existing measures—investigation of 'improvements' usually requires researchers to plan and implement innovations of some sort and to assess outcomes.

Most TLRP projects describe themselves as using some form of experimental, quasi-experimental, research and development, or action research design (see www.tlrp.org for project details). Thus they have been faced with three major tasks: (1) deciding what outcomes are of interest and how they might be measured; (2) planning and stimulating development activity; and (3) evaluating impact and explaining results.

With regard to the first task, the LHTL team accepted that one measure of outcome would need to be pupils' academic achievement as currently measured through nationally prescribed tests and examinations. The research on formative assessment, on which this project was built, had made much of evidence of impact on standard assessments of academic performance. However, at the beginning of our project, we also assumed that we would be interested in learning how to learn as an outcome, as well as a process. Since no adequate measure existed at the time,[3] this led us to attempt to develop an LHTL assessment task. This proved to be problematic and we decided not to use it as a 'test' of learning how to learn 'ability'. However, the exercise was valuable in helping us to think more deeply about the meaning of learning how

to learn. We concluded (see Black *et al*., 2006) that the phrase is best used to connote a family of second order learning *practices* with wide first order application, such that LHTL cannot be separated—as a trait or ability—from learning of itself, i.e., learning something.

Piloting and trialling a potential LHTL assessment tool took considerable time and had to proceed alongside recruitment of schools, development work with teachers, and the beginning of other forms of data collection. Thus we became aware that the desire to reconceptualize learning outcomes—and develop measures of them—and the need to investigate change in the course of a single project were fundamentally in tension (for a fuller discussion of this issue see James & Brown, 2005). On the one hand, investigating change requires some baseline assessment, which encourages the use of existing measures; on the other hand, new conceptions of learning outcomes require new measures and these demand extensive development and trialling. Ideally, we might have proposed a two stage project with the development of concepts and measures first, followed by their use in evaluating development work. However, this would have required a very long project that was most unlikely to be funded in full.

During the early stages of the project we developed a hypothetical 'causal' model with outcomes linked to 'interventions'; here also two problems quickly became evident. First, such a model, focusing mainly on 'bounded' schools and classrooms, gave insufficient attention to some aspects of activity that were likely to be influential, such as networking practice across schools. Secondly, it made assumptions about project interventions that became increasingly difficult to sustain. Schools were experiencing such a plethora of initiatives that isolating the impact of LHTL project interventions would be extremely difficult. A more valid approach seemed to be to treat project development activities as factors contributing, alongside other initiatives, to changes in learning outcomes, pupils' and teachers' beliefs about learning, classroom practices, professional learning and school management practices. This shifted our focus towards investigating the impact of the project *in context* and enabled us to avoid portraying the pattern of influence as unidimensional and unilinear. We therefore revised our model and re-named it 'a logic model for a causal argument' (see Figure 1). This acknowledged a need to seek explanations for phenomena, and the contribution of causal reasoning to this, but it also recognized the difficulty of making firm claims about the power of our specific project interventions to enhance learning outcomes in settings where numerous other contextual and mediating variables have an impact.

A 'solution' to this dilemma might have been to establish controls and to evaluate our results in relation to matched samples, but this was problematic also. Our principal research questions were about the conditions in schools that effect LHTL in classrooms. Thus our chief unit of analysis was the *school* and, had we pursued the notion of controlled trials, we would have needed to find a sufficient number of control *schools,* with similar characteristics in all the dimensions of interest to us, and then persuade them to allow us to collect the whole range of outcome data that we collected in project (treatment) schools. This was not feasible within our resources, neither was it possible to ensure matches on all the variables of interest.

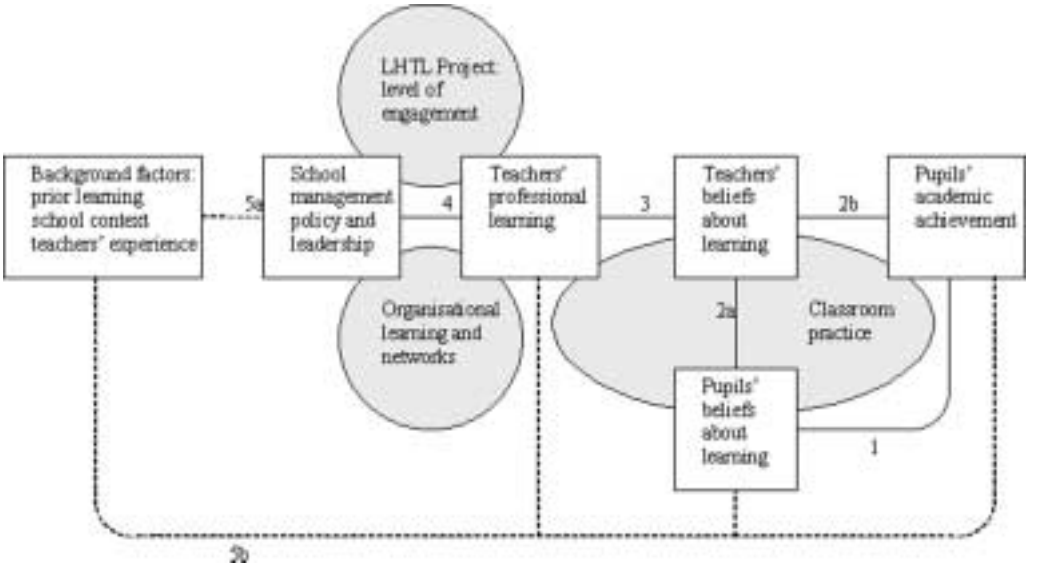

Figure 1. Logic model for a causal argument

Randomization, at school level, would have been even more difficult. Our decision, therefore, was to adopt a strategy based on case comparisons, with the same range of data collected in all project schools. We also sought to recruit a sufficient range of schools to enable us to make defensible judgements about patterns of difference. We found the means to make some limited comparisons with non-project schools, on a number of dimensions, principally background and performance measures, although we remain cautious about the claims we can make.

Project schools were aware, when the conditions of their involvement were negotiated,[4] that the project team would seek access to pupil performance data although, to save them trouble, we proposed to collect this directly, if possible, from the Department for Education and Skill's national database. During the course of our study the DfES granted us access to 'self-evaluation reports' for each of our 40 project schools, on condition that we used them in analyses and reports that did not reveal the identity of individual schools. This condition was not a problem since our own 'Code of Practice' assured schools that we would not reveal their identities (even if some of the schools chose to do so themselves). The self-evaluation reports were compiled for the DfES by the Fischer Family Trust, primarily for use by local authorities so that they could support schools in their improvement efforts. These reports provided performance profiles of project schools—a valuable addition to our case data—and evidence of changes in performance, in terms of raw scores and value-added, over the three years of our project (2002, 2003 and 2004). Most importantly for our purposes, they provided national comparisons with schools in similar circumstances in terms of social context and pupils' prior attainment, although changes in the calculation of performance statistics over the three years led us to treat with caution the validity of these statistics as measures of school improvement.

In these terms, we went as far as we felt we could to incorporate a longitudinal design with quantifiable antecedent and outcome measures to provide the basis for evaluation of change, and data on mediating and context variables to provide the basis of a number of alternative explanations for patterns and associations (see Table 1 for data sources and numbers of respondents). By integrating quantitative and qualitative data, we expected to be able to provide a small range of plausible, evidence-based theories of change in the substantive area of our study

In previous papers (see James *et al.*, 2003b) we considered whether our design could be described as 'Bayesian', 'new political arithmetic', 'complex intervention' or 'design experiment' (Gorard, 2002). We concluded that it conformed to none of the first three models because all require a phased design with some sort of controlled trial preceding or following more qualitative or exploratory work. A description as a design experiment seemed attractive because Cobb *et al.* (2003) describe these as

Table 1. Learning how to learn—instruments and numbers of respondents

	Quantitative measures of antecedents/ outcomes and change over time	Qualitative data to elicit mediating and context variables
Level 1: CLASSROOM	*Teacher and student learning:* ● Teachers' beliefs about learning (TBLQ) (*N* Time 1 = 576; *N* Time 2 = 190) ● Students' beliefs about learning (SBLQ) (*N* Time 1 = 4044; *N* Time 2 = 1811) ● Students' attainments (PAA: key stage test and GCSE data) (40 schools' aggregated data for 2002, 2003, 2004)	● Lesson observation sequences with focal teachers (LOS: recordings and interviews with teachers and pupils + lesson materials) (*N* = 27 lessons) ● Focal teachers' beliefs about learning (TBLI interviews incl. critical incidents) (*N* = 42)
Level 2: SCHOOL	*Organisational learning:* School climate/culture values and practices (Staff questionnaire—SQ) in three sections: Classroom assessment (SQ:A) Professional learning (SQ:B) Management systems (SQ:C) (*N* Time 1 = 1212; *N* Time 2 = 698)	● School coordinator perceptions (interviews and logs) (*N* Time 1 = 32; *N* Time 2 = 31) ● Head teacher perceptions (interviews and policy documents) (*N* = 39) ● Critical friend (*N* = 7) perceptions (interviews and logs)
Level 3: NETWORK	*Network community learning:* ● Knowledge creation and exchange (tracking transaction objects) ● Records of network activity	● Coordinator and head teacher network maps and logs (*N* = 35) ● LA/VEAZ coordinator interviews, maps and logs (*N* = 12) ● Staff questionnaire (L3Q or SQ:E) (*N* = 250) ● School network audit (*N* = 16)

Note: For instruments with two administrations, data were collected from the whole sample on the first occasion but only from half the sample schools (max. 20) on the second occasion. This was a deliberate decision and accounts for some, but not all, of the apparent sample attrition.

iterative, process-focused, interventionist, collaborative, multileveled, utility-oriented and *theory driven*. We viewed our project as all these things. However, the concept of a design experiment derives principally from engineering (Brown, 1992) with its connotations of a prototype developed in a laboratory, then field-tested and brought back again to the laboratory for further refinement, and so on. This was not an accurate description of our project for the reason that much of the refinement was done by practitioners in the field. They, as much as the researchers, were the creators of new practice-knowledge. For a time we played with the notion of an 'expansive design study,[5] but in the end we settled for 'development and research' as the best and simplest description of our project. This draws attention to the fact that development, to enhance learning, took place side-by-side and iteratively with research, to advance both social scientific and practical knowledge.

Working in authentic settings

Mention has already been made of the need to work with schools in an environment where numerous initiatives were being offered or pressed on schools by Government, by other researchers, or by the expanding band of educational entrepreneurs and consultants. We were fully committed to working in authentic settings of practice because our aim was to investigate how innovation 'landed' in schools and was implemented. The interaction of initiatives was of interest to us. However, there were other aspects of the authentic setting of our work that caused us concern.

By summer 2003, although much had been accomplished, the project was exhibiting strain created by our ambition to carry out development and research at three levels—in classrooms, schools and networks—and to integrate our work empirically and theoretically. This strain was manifested particularly in the workloads of our full time researchers.[6] Our project's Advisory Group guided us to consider scaling down our research efforts by considering reductions in one or more of three areas: (1) numbers of schools researched; (2) numbers of instruments used; (3) sample sizes. We decided to combine these suggestions by reducing the size of the sample of schools in which we would do intensive fieldwork, particularly lesson observation, from 40 to 20. These 20 became our *main sample* for longitudinal data analysis.

We selected the 20 schools by classifying schools according to the likelihood that we would have near-complete data from them. Curiously, there appeared to be little relationship between schools' enthusiasm for project ideas and their commitment to provide us with data; we managed to collect fairly comprehensive data from some schools that appeared to be doing very little development work as well as from those that were enthusiastically innovating. Therefore, our 20 main sample schools were not exclusively those where we would expect to find 'best practice'. This was not a particular concern to us because we are interested in investigating a full range of approaches to, and degrees of, implementation of project ideas. Our selection provided a subsample of 7 secondary, 11 primary and 2 infants' schools and preserved some clusters, or partial clusters, in which to investigate networking.

This strategy solved our immediate problem, although further unplanned sample attrition occurred. Apart from three schools lost, from 43, very early in the project, we lost no other schools from the study, although we found it difficult to collect some data from some of them, especially responses to the second administration of questionnaires. By the end of funding we had complete data at all three levels from two schools, and complete data at two levels from six others. This sample attrition with respect to particular datasets meant that we had to make some adjustments to our original design, bearing in mind the need to preserve the methodological integrity of our work.

We had considered—although not promised—analysing our quantitative data using multi-level modelling. Incomplete datasets and difficulties in relating some of our teacher level data to pupil level data[7] made this unviable. However, we judged that we could still provide sound answers to our research questions by more modest factor, cluster and regression analyses of our survey data at whole sample level, which could then be used to provide profiles of individual schools. The resulting patterns of within-school and across-school differences could then be explored in case studies drawing on our other qualitative data (for a more detailed account of analysis see James *et al.*, 2006a).

Contributing to, and participating in, research is a marginal activity for most teachers and schools. Other pressures on them continued to grow and, during this period, our plans were particularly challenged by the introduction of new workload agreements which were a disincentive to many school managers from encouraging involvement of teachers in 'non-essential' activities. One mode of development (of three) initially proposed by the LHTL project was based on the model developed by the Kings', Medway, Oxfordshire Formative Assessment Project (Black *et al.*, 2003), in which regular, whole day meetings at the university played a major role. However, the possibility of taking teachers out of school to attend courses diminished dramatically during the period of our research. The two other modes of development were based on models of whole school inset that are familiar in schools, utilizing professional development days and staff meetings, and less familiar models of electronic networking using online resources which the project team had the expertise to support. In practice, working through senior management teams and supporting inset, became the preferred mode. Provision for teacher cover for in-school and across-school collaboration, which all these modes of development were expected to stimulate, was made in the project budget but, despite encouragement to schools to use these funds, much of our budget for teacher cover remained unspent. As pressures on our full time researchers increased, we were able to turn this circumstance to our advantage by using these funds[8] to employ an additional part time researcher, and others on a casual basis. Their contribution proved vital to the successful completion of the project.

Another influential feature of work in authentic settings is the constant movement of personnel in the system. A significant proportion of focal teachers, school coordinators and school managers changed schools or jobs during the period; and, of the 20 local authority advisers with whom we liaised, only two were the same at the end of

the project as the beginning. This is not surprising. Many of those who chose to work most closely with the project were ambitious, for themselves and for the education service, and their involvement with the project may have contributed to fulfilment of some of their aspirations. The same was true for the project team. Of the nine academics who were applicants on the proposal submitted to the ESRC in January 2000, four, including two of the three original co-directors, left the project during the funding period in order to take up key posts outside of the university sector. We were fortunate, however, to find excellent replacements—as was the case in schools and local authorities. Nevertheless, managing a response to these changes was undoubtedly one of the biggest challenges for the project team.

Bringing multidisciplinary approaches to research

Our instrumentation was developed on the basis of existing theory, and the 'substantive' theory implicit in our logic model, which we intended to test and modify. But we also hoped to build some new theory and to examine how our findings might illuminate, or be illuminated by, 'formal' theories such as constructivist and sociocultural theories of learning and cognition, activity theory, distributed cognitions theory, communities of practice theories, network theories or theories of social and intellectual capital. Given that the team was made up of educational researchers with different backgrounds (ranging from physics to English and media studies, and philosophy to sociology) we decided not to locate this study in a single, narrow, theoretical framework but to create a project which would enable us to test a number of analytical perspectives. We believed that the phenomena we were interested in can be viewed through a number of lenses, each of which can enrich and deepen our vision. During the course of the project, we developed a series of internal discussion papers, each derived from a different theoretical perspective, which we discussed with particular attention to their points of overlap or tension. An article by Black *et al.* (2006) is the result of one such discussion; it attempts to bring insights from philosophy, psychology and education to bear on the problem of defining 'learning how to learn'. Although we are satisfied with this as an outcome of across-disciplinary thinking, we would not wish to underestimate the difficulty of such work.

First, we were aware of concerns over cherry-picking the language, concepts, methods and validity tests of distinct forms of knowledge (Hirst, 1974) and thereby disrupting the essential coherence of different frameworks. For example we discussed the wisdom of attempting to bring together concepts such as 'autonomy' (from philosophy), 'self-regulation' (from psychology) and 'agency' (from sociology) to capture a central feature of learning how to learn. In methodological terms, we had similar struggles to work out how best to analyse our video data of classroom practice: whether to apply systematic classroom observation using an objective category system which would render quantifiable patterns; or to adopt a 'connoisseurship' approach derived from the arts (Eisner, 1991). Marshall and Drummond (2006) describe how we decided to draw on particular expertise within the team to view these data as performances or texts amenable to a form of 'practical criticism'.

At the network level our initial assumptions about the role of electronic networks, and the likelihood of the importance of communities of practice, gave way to an alternative approach. This required the seeking out of theories from social network analysis and social capital theory and the development of entirely new data collection instruments (see Carmichael *et al.*, 2006).

In these modest ways, we took seriously the TLRP aim to pursue multidisciplinary research. What we found, however, was that this requires great commitment, not least in the attempt to understand one another's language and perspectives. We experienced, at first hand, the nature of distributed cognition and, although we did not expect to come to 'think alike' in all respects, progress towards common understanding was sometimes painful. It was much more than a purely rational or cognitive activity and it challenged norms of behaviour, role expectations, dispositions, feelings of confidence, and attitudes towards others. It engendered some (temporary) anger and upset as well as much laughter. Even a modicum of success could not have been accomplished without time to work the issues through. The fact that we established a schedule of monthly whole team meetings, including a two-day residential every term, proved vital to keeping the team together in the development of its collective thinking, as well as keeping the separate components on schedule.

Enhancing research capacity

The experiences described in the section above indicate the extent to which capacity building was an outcome of working within the team, and learning from one another, rather than seeking new knowledge and skills from external courses, etc, although all team members brought new ideas and practices to the project. The contract researchers tended to make more use of opportunities to attend courses on specific topics, particularly those mounted by the TLRP's Research Capacity Building Network (RCBN). This might be expected because they had fewer competing calls on their time. However, even for these, the building of specific skills and knowledge on a 'need to know' basis, whilst engaged on concrete project tasks, was vitally important. For example, one of the project's full time researchers developed a pattern of seeking 'supervisions' from a more experienced statistician when he got 'stuck' in his analytical work. He improved his skills step-by-step such that, at the conclusion of the project, he possessed both breadth and depth in his methodological expertise.

The LHTL project did not involve teachers-as-researchers as a central feature of its design, although one of our full time researchers and teachers who collected additional data of their own plan to collaborate on writing a detailed, book-length case study of the project in their school. Sharing results of the baseline staff questionnaire with teachers and managers in all schools was also an important school level activity intended to build research capacity within schools because our longer-term intention was to encourage the use of this instrument as a self-evaluation tool. The project always proposed to 'leave behind' materials, including research instruments, as a deliberate strategy designed to meet the TLRP aim of enhancing research capacity among educators more broadly.[9]

The project was also successful in supporting bids from two practitioners for Research Training Fellowships linked to the project. Unlike some others, these have retained their practitioner status: Robin Bevan continues as a deputy head teacher; Pete Dudley is currently a regional director for the national strategies, having formerly worked for networked learning communities at the National College for School Leadership (see www.tlrp.org for details of their studies).

We suspect that all these capacity building benefits accrue from the relatively large scale of the project. There seems little realistic prospect of producing many 'compleat researchers' (Gorard, 2002) if funding is limited and projects are small. The best that research methods courses in higher education may be able to do is produce researchers who are 'literate' across a broad methodological spectrum and 'skilled' in a subset. If funders have the vision and resources to support more longer-term and complex designs requiring multiple skills and perspectives, then research capacity might genuinely be expanded in the actual 'doing' of research, i.e., in the communities of practice.

Working in partnership with 'users' to achieve impact

The intention behind this TLRP aim was to encourage involvement of 'users', who might be practitioners, policy-makers or other stakeholders, in all stages of research from the identification of research questions to the development of strategies for implementation of findings. In this way impact would be maximized. The LHTL project was built on questions about transferability and sustainability of practice, which had arisen in previous projects such as KMOFAP (Black *et al.*, 2003), therefore the experience of schools and local authorities had been a source of research questions. However, this was indirect. The subsequent stages of the research required much more direct involvement.

Without practitioners there would have been no project; this was why it was so vital to work to keep them 'on board'. Apart from some interventions by members of the project team in the form of whole school in-service training, critical friendship, and the provision of resources, the teachers were themselves responsible for interventions in classrooms, and their practices and perceptions were key data sources. They turned general ideas into practical strategies for different contexts. They also helped to interpret interim findings and they were key agents in the initial dissemination of results. For example, in our formal dissemination event for policy-makers at the end of project funding (in June 2005), the contributions of the teachers and local authority advisers were crucial in convincing some of the natural sceptics in the policy audience that there was substance behind the ideas.

At local level, too, the involvement of practitioners paid dividends. In one local authority, a large network of schools has been built around the four schools in the project. The added value here was very evident with teachers themselves developing ideas well beyond the rudiments that the LHTL project introduced. For example, an annual conference which invited a keynote from one of the LHTL project team in 2004 had pupils giving the 'keynotes' in 2005 (for more detail see James *et al.*, 2006b).

Again, the TLRP expectation that projects will involve users to maximize impact is challenging. Fulfilment of this aim is time-consuming and requires activity only indirectly related to the conventional research tasks of data collection, analysis and writing. In the case of the LHTL project this involved: meetings in local authorities to explain the project and recruit schools; investing time in providing in-service training and critical friendship; contributing to school and local authority events to maintain good relations; coaxing data flow; providing help to practitioners in preparing contributions to dissemination; arranging Advisory Group meetings and consulting on outputs. As the attrition in some of our samples shows (see Table 1), we were not successful in all these respects.

Similarly, we experienced difficulty in maintaining the attention of key policy-makers and other user groups, although this was one main purpose of our Advisory Group and our dissemination events. Policy-makers move around with great rapidity and political agendas move on with equal speed. Planned timetables for reporting rarely synchronize well with new policy initiatives, which cannot always be anticipated, and we had to learn to live with reporting partial results (see, for example, Pollard & James, 2004) rather than miss an opportunity to raise awareness of our work. For researchers, whose instinct is to be methodical and cautious, the pressures to publish before fully ready were uncomfortable. However, pursuing the normal tenets of good scientific research, i.e., publicizing only after thorough academic peer review, sometimes risks missing the education policy boat entirely.

In this context, as in others, the LHTL team adopted a pragmatic compromise which involved drip-feeding results of relatively small but interesting and secure elements of analyses, to whet appetites, before we were in a position to report our full conclusions. Indeed, it was June 2006 before we felt confident enough to publish a *Research briefing*, aimed especially at policy-makers, summarizing the overall findings of our research.[10]

Making fundamental contributions to knowledge

It is indeed our 'logic model' analysis, both in the form of whole sample survey analyses and through case studies of schools, that we expect to make the most fundamental contribution to knowledge. We are now confident that we have some interesting and important answers to questions about the conditions within and across schools that promote LHTL in classrooms—the core of our research. These findings are summarized in our *Research briefing*. A book (James *et al.*, forthcoming), in the TLRP Improving Learning series, will provide a more detailed and general account of the project and findings including case studies of schools. For academic readers, the findings of the project on specific research questions are published in refereed journals. A special issue of *Research Papers in Education* (2006, 21(2)), is dedicated to the project and contains seven articles. *The Curriculum Journal* (2006, 17(2)), contains two articles and a number of other articles are published, or being published, elsewhere (see LHTL and TLRP web sites for updates).

The need to complete our analyses to our satisfaction required us to carry on working for some considerable time beyond the end of formal funding. The project has an

enormous data base: the equivalent of more than 7000 pages of Word and SPSS files deposited in a private area of our website. Whilst this may be an exceptionally large quantity of data, the problem is a familiar one. In order to finish the tasks, some of which remain at the time of writing, the team needs to continue to collaborate. Electronic tools help greatly but there are times when face-to-face interaction is preferable. This is difficult to organize, especially without funding: as new projects are initiated, researchers are recruited to new posts,[11] and the pressures of teaching mount.

The Teaching and Learning Research Programme attracted cross-institutional bids for projects and the majority involve more than one higher education institution as well as other partners. This has been an undoubted benefit but it has also had costs. It has benefited the research community in that it has encouraged collaboration, capacity building, communication, co-construction and the sharing of knowledge and expertise more generally. On the other hand, there will be costs if researchers retreat into their institutions and become embroiled in inter-institutional competition during the run-up to the Research Assessment Exercise in 2008. The TLRP has worked hard to put in place an infrastructure of support and systems to ameliorate these effects (see www.tlrp.org) but it will take the goodwill of individuals, teams and institutions to avoid negative competition surrounding who can lay claim to particular contributions to knowledge.

Reflection

In his 2005 *Educational Review* lecture, Andrew Pollard, the Director of TLRP, argued that, of the possible responses to criticisms of educational research, 'creative mediation' was the 'only really viable response for educational research as a whole' (Pollard, 2005, p. 3). By positioning themselves at neither the compliant nor resistant extremes of response to imposed changes, educational researchers could and should analyse and speak independently for the benefit of society. This 'strategic positioning' would enable researchers to enter debates with policy-makers, practitioners and other stakeholders, about evidence to inform decisions, with some hope of being taken seriously. This is not to deny the value of 'blue-skies' research which has little conception of immediate 'application' but to acknowledge that much educational research is framed in terms of moral purposes and that these purposes can only be pursued in dialogue with those expected to act.

Educational research of this kind is extremely difficult because researchers have to engage in a whole range of activities beyond the usual expectations of the lone scholar or star researcher. These take time; they can be stressful; they often demand new forms of knowledge, skills and attitudes from academics. Pollard characterized what was required as a form of professional 'reflective activism' and argued that this was what TLRP was about.

> We are trying to build the social capital of educational research—developing relationships and networks, sharing perspectives and building alliances with present and future stakeholders both within and beyond the research community. We are trying to promote

> collective, open and reflective debate and action in respect of the challenges which need to be faced. We are working on politically engaged impact and dissemination strategies with a view to making a difference. And finally, we are attempting to position ourselves strategically in respect of long-term issues. (Pollard, 2005, p. 4)

If this is the broad strategy, then the distinctive tactics adopted by TLRP included the creation of a Steering Committee (responsible for both commissioning and evaluating projects and the programme as a whole) with a membership balancing users and academics. This innovation in terms of ESRC procedures was challenging in itself because it forced wider discussion about whose criteria of value were to be privileged and whether consensus could be achieved. Another tactic was the creation of a Directors' Team with distributed responsibilities for mediating some of the information demands of users to project teams and helping to communicate the work and findings of projects to users. A third tactic was the development of an infrastructure of support, including online support and publishing arrangements that would help researchers to reach different communities of policy and practice.

There were times when the different demands were difficult to balance[12] although there are now firm signs that the strategy is having an impact. Government agencies and professional associations are reporting research on their web sites, e.g., the General Teaching Council for England's *Research of the Month.* TLRP researchers are invited to contribute evidence to policy groups, e.g., the education team at HM Treasury and the Conservatives' Public Services Improvement Policy Group. And the results of individual projects are attracting the interest of the mass media, e.g., the LHTL achieved wide national press coverage in August 2006 along the lines of 'Test focus hits learning skills'.[13]

These kinds of exposure make new demands of researchers: in the way they generate and frame questions; in the way they design projects and work with users as advisers or participants; and in the ways they report and disseminate their findings. The aims of the TLRP provided a framework of expectations which needed to be implemented at both programme and project level if any coherence was to be achieved. The LHTL project attempted to take these obligations seriously although, as this account shows, implementation was a good deal more difficult than the theory. Nevertheless, these challenges need to be faced if, as Pollard (2005, pp. 35–36) expressed it:

> The ultimate future-oriented goals of TLRP are to contribute both to a more capable, self-confident and respected body of researchers in this field, and to the improvement of knowledge about teaching and learning on which better educational policy and improved practices can be based.

Perhaps this is a message for educational research more generally.

Notes

1. 'Learning how to learn—in classrooms, schools and networks' was a four-year development and research project funded from January 2001 to July 2005 by the UK Economic and Social Research Council as part of Phase II of the Teaching and Learning Research Programme (see www.tlrp.org). The project (ref: L139 25 1020) was directed by Mary James (University of

Cambridge until December 2004, then at the Institute of Education, University of London) and co-directed, from 2002, by Robert McCormick (Open University). Other members of the research team were Patrick Carmichael, Mary-Jane Drummond, John MacBeath, David Pedder, Richard Procter and Sue Swaffield (University of Cambridge), Paul Black and Bethan Marshall (King's College London), Leslie Honour (University of Reading) and Alison Fox (Open University). Past members of the team were Geoff Southworth (University of Reading until March 2002), Colin Conner and David Frost (University of Cambridge until April 2003 and April 2004 respectively) and Dylan Wiliam and Joanna Swann (King's College London until August 2003 and January 2005 respectively). Further details are available at www.learntolearn.ac.uk.

2. See Goal 4 in www.ed.gov/about/reports/strat/plan2002–07/index.html (accessed 31 August 2006).
3. During our work we became aware that an assessment instrument for 'learning to learn' was being developed in Finland (for a discussion see Black *et al.*, 2006) and, in 2005–2006, the European Commission Standing Group on Indicators established an expert group on developing such an indicator. The LHTL project director was the UK representative in these discussions.
4. One of the first tasks of the project team was to create a project handbook which provided schools, and other project participants, with general information including expectations and codes of practice. This is online at: www.learntolearn.ac.uk/cgi-bin/learntolearn/index.pl?start=home/002_handbook (accessed 31 August 2006).
5. Shavelson *et al.* (2003) argue that a design only warrants the designation 'experiment' if some element of traditional natural scientific design is incorporated. They prefer the term 'design study' to 'design experiment'.
6. We originally bid for three researchers over four years but the TLRP Steering Committee recommended that we extend our work for a fourth year, to assess sustainability, whilst, at the same time, scaling back our budget. Since other costs were fixed, we could only reduce our budget to the requested level by reducing our number of researchers.
7. We were able to identify the teachers who taught specific pupils in our 'beliefs about learning' surveys but we did not ask teachers to identify themselves in our 'staff questionnaires'. These asked for their views of management practices and we judged that they might not give honest answers if they revealed their names.
8. ESRC rules permit some justified virament.
9. All our research instruments are now publicly available online at: www.learntolearn.ac.uk. Sign in as 'guest' and follow the link to 'self-evaluation resources'. Particular interest has been shown in our 'staff questionnaires' which are also available in James *et al.* (2006b).
10. This in downloadable from the project page on the TLRP web site.
11. Both of our full time researchers have been appointed to permanent lectureships.
12. The author of this article had experience from both sides: as a project director and as TLRP deputy director.
13. This was the headline from BBC News online at: http://newsvote.bbc.co.uk/mpapps/pagetools/print/news.bbc.co.uk/1/hi/education/477 (accessed 9 August 2006).

References

Berliner, D. (2002) Educational research: the hardest science of all, *Educational Researcher,* 31(8), 18–20.

Black, P., Harrison, C., Lee, C., Marshall, B. & Wiliam, D. (2003) *Assessment for learning: putting it into practice* (Maidenhead, Open University Press).

Black, P., McCormick, R., James, M. & Pedder, D. (2006) Learning how to learn and assessment for learning: a theoretical inquiry, *Research Papers in Education,* 21(2), 119–132.

Brown, A. (1992) Design experiments: theoretical and methodological challenges in creating complex interventions in classroom settings, *The Journal of the Learning Sciences,* 2(2), 141–178.

Burgess, R. (Ed.) (1993) *Evaluation for policy and practice* (Basingstoke, Falmer Press).

Carmichael, P., Fox, A., McCormick, R., Procter, R. & Honour, L. (2006) Teachers' networks in and out of school, *Research Papers in Education,* 21(2), 217–234.

Cobb, P., Confrey, J., diSessa, A., Lehrer, R. & Schauble, L. (2003) Design experiments in educational research, *Educational Researcher,* 32(1), 9–13.

Eisner, E. (1991) *The enlightened eye: qualitative enquiry and the enhancement of educational practice* (New York, Macmillan).

Gorard, S. (2002) *How do we overcome the methodological schism (or can there be a 'compleat researcher')?* Occasional paper series: paper 47 (Cardiff, RCBN Cardiff University).

Hillage, J., Pearson, R., Anderson, A. & Tamkin, P. (1998) *Excellence in research on schools* (Sudbury, DfEE).

Hirst, P. (1974) *Knowledge and the curriculum* (London, Routledge).

James, M., Pedder, D. & Swaffield, S. (2003a) *A servant of two masters: designing research to advance knowledge and practice.* Available online at: www.tlrp.org/dspace/handle/123456789/59 (accessed 31 August 2006).

James, M., Pedder, D., Black, P., Wiliam, D. & McCormick, R. (2003b) The design of the ESRC TLRP 'learning how to learn' project, paper presented at the 2003 *Annual Conference of the British Educational Research Association,* Edinburgh. Available online at: www.tlrp.org/dspace/handle/123456789/57 (accessed 31 August 2006).

James, M. & Brown, S. (2005) Grasping the TLRP nettle: a preliminary analysis and some enduring issues surrounding the improvement of learning outcomes, *The Curriculum Journal,* 16(1), 7–30.

James, M., Black, P., McCormick, R., Pedder, D. & Wiliam, D. (2006a) Learning how to learn, in classrooms, schools and networks: aims, design and analysis, *Research Papers in Education,* 21(2), 101–118.

James, M., Black, P., Carmichael, P., Conner, C., Dudley, P., Fox, A., Frost, D., Honour, L., MacBeath, J., McCormick, R., Marshall, B., Pedder, D., Procter, R., Swaffield, S. & Wiliam, D. (2006b) *Learning how to learn: tools for schools* (London, Routledge).

James, M., Black, P., Carmichael, P., Drummond, M.-J., Fox, A., Honour, L., MacBeath, J., Marshall, B., McCormick, R., Pedder, D., Procter, R., Swaffield, S., Swann, J. & Wiliam, D. (forthcoming) *Improving learning how to learn in classrooms, schools and networks* (London, Routledge).

Marshall, B. & Drummond, M.-J. (2006) How teachers engage with assessment for learning: lessons from the classroom, *Research Papers in Education,* 21(2), 133–149.

Pollard, A. (2005, October) Taking the initiative? TLRP and educational research, *Educational Review* guest lecture, School of Education, University of Birmingham.

Pollard, A. & James, M. (2004) *Personalised learning: a TLRP commentary* (Swindon, ESRC).

Shavelson, R., Phillips, D., Towne, L. & Feuer, M. (2003) On the science of education design studies, *Educational Researcher,* 32(1), 25–28.

Stokes, D. (1997) *Pasteur's quadrant: basic science and technological innovation* (Washington, DC, Brookings Institution Press).

Tooley, J. & Darby, D. (1998) *Educational research: a critique* (London, Ofsted).

Walford, G. (Ed.) (1991) *Doing educational research* (London, Routledge).