

ESRC Teaching and Learning Programme

Capacity for Research into Teaching and Learning

Final Report

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CONTENTS

Acknowledgements	i
Contents	ii
Summary	iv
Chapter One: An Overview of the Issues	1
1.1 Introduction	1
1.2 Conceptions of Research into Teaching and Learning and its Use	2
1.3 The Concept of Research Capacity	5
1.4 Considering Capacity for Different Conceptions of Research into Teaching and Learning	7

1.4.1	Capacity for Applied Social Science Research	7
1.4.2	Capacity for Research for Understanding of Teaching and Learning	11
1.4.3	Capacity for Research for Evidence-based Teaching and Learning	15
1.4.4	Capacity for Researching and Learning Schools	18
1.5	Conclusion	21

Chapter Two: Interviews with Experts 22

2.1	Introduction	22
2.2	Diverse Perspectives on Capacity for Research into Teaching and Learning	23
2.2.1	National Perspectives	23
2.2.2	Perspectives on School-based Research	28
2.2.3	Further Education	34
2.2.4	Other Potential Sources for Capacity	36
2.2.5	Distinctive Target Areas for Research	40
2.2.6	Research into Teaching and Learning in Scotland	43
2.3	Conclusion	43

Chapter Three: Estimating Current Capacity 45

3.1	Introduction	45
3.2	Capacity for Applied Social Science Research into Teaching and Learning	45
3.3	Capacity for Research for Understanding Teaching and Learning	48
3.4	Capacity for Research for Evidence-based Teaching and Learning	53
3.5	Capacity for Researching and Learning Schools	55
3.6	Conclusion	56

Chapter Four: Conclusions and Recommendations 57

4.1	Introduction	57
4.2	Capacity for Applied Social Science Research into Teaching and Learning	57
4.3	Capacity for Research for Understanding Teaching and Learning	58
4.4	Capacity for Research for Evidence-based Teaching and Learning	59
4.5	Capacity for Researching and Learning Schools	60

SUMMARY

1 Overview of the Issues

1.1. Since one element of the ESRC Teaching and Learning Research Programme's remit is 'to contribute to the development and enhancement of research capacity' in the field of teaching and learning, this small project was commissioned in order to clarify the meaning of that task, to explore possibilities for its achievement, and to assess current research capacity in the field.

1.2. The project has been undertaken in three broadly consecutive components:

(a) an overview of the issues, conceptualising 'research capacity in the field', considering ways in which it might be enhanced and developed, and considering also ways of estimating current capacity;

(b) an exploration, through interviews with expert informants, of ways in which issues of research capacity differ according to contexts for teaching and learning, different countries within the United Kingdom, different conceptions of research, and different institutional contexts for the conduct of research;

(c) the collection of simple quantitative information relevant to current capacity for research into teaching and learning.

1.3. Four sub-fields of research into teaching and learning are distinguished:

(i) research aimed at applying knowledge from social science disciplines to policies and practices for teaching and learning;

(ii) educational research aimed at achieving improved understanding of teaching and learning practices, processes and contexts;

(iii) research designed to provide direct evidence of effective approaches to teaching and learning;

(iv) practitioner research, and especially schools as research and learning institutions.

1.4. Research capacity is conceived as the most and best research which could be done now if there were the political will and the necessary resources for it to be done. Research capacity is viewed as being dependent on appropriate and adequate expertise, motivation and opportunity.

1.5. Capacity for applied social science research into teaching and learning is viewed as being largely located in social science departments of universities. Such capacity is seen as probably being constrained largely by the lack of motivation of academic social scientists to engage in applied research in a field such as teaching and learning. The provision of incentives for social scientists and educational researchers to collaborate in such research is seen as a likely way of enhancing capacity of this kind.

1.6. Capacity for educational research aimed at developing understanding of teaching and learning is viewed as being located largely in university departments of education, and to a lesser extent in independent research organisations. This capacity is considerable and is not constrained by any lack of individual or institutional motivation for research of this kind. A much greater constraint is the lack of sufficiently developed research expertise among a large proportion of the people concerned. It is through finding ways of developing that expertise that research capacity of this kind can probably most effectively be enhanced.

1.7. Capacity for research designed to provide direct evidence of effective approaches to teaching and learning is also likely to be located largely in university departments of education, but to be thinly scattered. The culture of educational research has, for understandable reasons, moved from one dominated by quantitative thinking in the sixties to one of domination by qualitative thinking in the nineties. Promotion by the Programme of quantitative research relating teaching and learning processes to outcomes could be very important in enhancing research capacity of this kind.

1.8. Capacity for research by teachers and by schools is increasingly recognised as important, but it is also the most difficult sub-field to conceptualise and in which to see a clear way forward. This is the case too in relation to capacity for effective use of research by schools. Several different long-established and more recent ways of thinking about schools' and teachers' engagement in, and use of, research interact and compete here; and there is, furthermore, very little evidence available about the possibilities or implications of serious engagement by schools with research. Both current capacity and possibilities for enhancement are likely to lie mainly in close research partnerships between schools and university departments of education or other educational research organisations. It is through contributing to understanding of the possibilities for such partnerships and for researching schools, and of their implications, that the Programme could probably do most to enhance research capacity of this kind.

2 Interviews with Experts

2.1 The initial overview of research capacity for teaching and learning was based on general knowledge of the educational research scene and on relevant literature. However, its general validity in the eyes of educational researchers and of users of research needed to be tested. In particular, a generalised view of capacity for research into teaching and learning had been developed, not taking account of different contexts of teaching and learning, different populations involved or other differences of potential importance. The second component of the project therefore involved interviews with twenty-two expert informants selected in order to explore such possible differences.

2.2 National Perspectives Key national perspectives were sought from a representative from the DfEE, from four nationally prominent educational researchers, and from a representative from the ESRC Research Training Board. From the DfEE perspective, the neglect of research on the effectiveness of teaching and learning in different aspects and contexts, the need for research to be organised so as to make a cumulative contribution, and the need for more effective communication, dissemination and use of research were emphasised. Researchers themselves tended to focus attention on issues of research quality, and related matters of training, recruitment and funding policies. They put emphasis too on the value of collaboration, both between disciplines and between academic researchers and educational practitioners, but warned of the complexity and difficulty of such collaboration. The Training Board representative was primarily concerned to develop more effective ways of recruiting able people with teaching and/or social science backgrounds to become trained researchers of teaching and learning.

2.3 School-based Research The importance of schools and teachers using and perhaps engaging in research, and the problems of conceptualising capacity in this area, were reflected in the interviews sought with, and provided by, a representative from the TTA, two LEA chief education officers, a headteacher and an academic researcher who were all enthusiastic proponents of teacher and school research. There was strong agreement on the crucial importance of partnerships between university departments, schools and LEAs. The lack of practical value of most research done without school involvement was emphasised; more focused research, it was thought, could lead directly into school improvement. There were, however, different points of view as to the kinds of research which schools and teachers could most usefully do. There were also real difficulties for teachers in themselves engaging in research. They rarely had the time nor the training that was needed, nor the necessary infrastructure to support them. It was for these reasons that collaboration with university departments was crucial.

2.4 Further Education Four people were interviewed: an FE college principal; two university lecturers specialising in FE; and a representative from FEDA. The distinctiveness of teaching and learning in FE, and of the related research needs, were emphasised. There was only a limited research tradition to build on, and current research was inadequate in quantity and quality. Partnership with university departments was seen to be important in FE, within a networking context, both to do the needed research and to build up the capacity for such research within FE

itself. Changes in both the culture of FE and in its infrastructure would be necessary if the desired capacity were to be developed.

2.5 Other Potential Sources of Capacity People interested in educational research from university social science departments, from independent research organisations and from business were interviewed. In university social science departments, respondents were concerned about the decline of disciplinary research in university departments of education. With the emphasis on school-based initial training for teachers, few education staff had a training in social science research. Too much research into teaching and learning was not conducted from an objective viewpoint, and funding arrangements did not encourage those in university social science departments to engage in research on teaching and learning. It was among psychologists that there seemed most confidence that such research would be useful and that educational researchers would benefit from collaboration with them. Independent research organisations, it was suggested, had tended to develop substantial capacity for quantitative research. In some of these, it had proved possible too to provide career structures for researchers, who elsewhere were dependent on the vagaries of the contract research system. In other organisations, however, there were frustrations because working on a supply and demand basis discouraged theorised research, offered researchers only limited perspectives and provided only limited support for research training. The one business representative interviewed reported virtually no capacity for research into teaching and learning in their large organisation. The culture of such organisations, it was suggested, supported enquiries into best practice but these were based on common sense developments and evaluations. Business people were wary of academic research on the grounds that academics knew little about the world of work.

2.6 Distinctive Target Areas for Research In relation to each of the three areas of early years education, special educational needs (SEN) and the education of ethnic minorities, about which experts were interviewed, more research into teaching and learning was seen to be necessary. Distinctive concerns included those about learning outside the school in the early years, inclusive pedagogy, the need for less SEN research undertaken from committed standpoints, and the need to understand the processes leading some ethnic minority communities to achieve high levels of educational success. In so far as distinctive kinds of research capacity were needed in these areas, the need was for researchers with a good objective understanding of the substantive teaching and learning issues.

2.7 Scotland From our interviews with two leading researchers, we did not form a view that the problems of capacity for research into teaching and learning were highly distinctive in Scotland. Capacity was to be found in university education departments with the Scottish Office (now Scottish Executive) being a highly significant source of funds. Concerns were expressed that the funding infrastructure was not sufficiently supportive of basic research aimed at understanding teaching and learning processes.

3 Estimating Current Capacity

3.1 Rigorous estimation of current research capacity in terms of the expertise, motivation and opportunities which people have, and which could be mobilised now, would be a complex and difficult task. Within the constraints of this project, therefore, we have sought to offer robust estimates of capacity on the basis of current research activity. Different indicators of capacity, incorporating different quality standards, can however give widely disparate estimates.

3.2 Evidence of university social scientists' engagement in research on teaching and learning has been sought through a simple questionnaire survey of highly rated departments, through examination of ESRC records for both research grants and research studentships, and through analysis of publications in key journals. It is clear that research into teaching and learning by social science staff or research students is rare, except to some degree in Psychology and

Linguistics. Even in these latter two subjects, earlier evidence suggests that applied research is rare.

3.3 A simple attempt was made to explore possible factors constraining social scientists from engaging in research on teaching and learning. The patterns of response were far from simple, but lack of incentives was overall rated as the most important factor. This then supports the earlier suggestion that the Programme could very usefully offer incentives for collaboration between university education and social science departments in research of this kind.

3.4 Evidence of capacity for educational research aimed at developing understanding of teaching and learning has been sought through a simple questionnaire survey of university education departments, through examination of ESRC records for research grants and research studentships, and through analysis of journal publications. The majority of research-active staff of these departments, and very large numbers of PhD students, are claimed to be engaged on research into teaching and learning; and both ESRC records and evidence from journal publications lend some qualified support to these claims. The availability of the diverse population of contract researchers in education as a significant part of the research capacity is also briefly examined on the basis of a BERA survey.

3.5 University education departments also claim that most of the research into teaching or learning conducted by their staff or research students is informed by social science ideas. At the very least, this does suggest a culture of readiness to draw on social science theory in the shaping and interpretation of research into teaching and learning. There can be little doubt either that a large amount of research into teaching and learning is being conducted or that educational researchers are in general ready to be influenced by social science theory. It does seem however that much of the current research of this kind is likely to be of limited quality both methodologically and theoretically.

3.6 The questionnaires to university social science and education departments, the use of ESRC records, and the journal analyses also sought evidence about capacity for research designed to provide direct evidence of effective approaches to teaching and learning. While a large proportion of those staff and research students in psychology departments engaged in research into teaching and learning are reported to be doing research of this kind, little research of this kind appears to be going on in other social science disciplines.

3.7 In university education departments, significant minorities of the staff and research students doing research into teaching and learning - larger than expected - were claimed to be engaged in such quantitative research concerned with effectiveness. Analysis of ESRC records and of journal publications gives only limited support for such claims. A clear positive correlation is apparent between departments' research ratings and the proportions of staff and research students claimed to be engaged in research of this kind. It is again those within education departments with psychology backgrounds who tend to be doing most such quantitative research on the effectiveness of teaching or learning.

3.8 We have not succeeded in establishing any persuasive quantitative evidence about schools and teachers currently engaging in or using research. This is primarily because we have not found any satisfactory way of conceptualising such research capacity which would command consensual support, nor therefore any satisfactory indices. However, most departments of education claimed to have established institutionalised research partnerships with groups of schools, which would suggest some commitment to the idea of researching schools; and over a thousand part-time PhD students, many of whom are likely to be teachers and who are concentrated mainly in strong research departments, are claimed to be engaged on research into teaching and learning.

4 Conclusions and Recommendations

4.1 Capacity for Applied Social Science Research into Teaching and Learning: Conclusions

- (a) There is hardly any current capacity (according to all our indicators) in university departments of economics, sociology and social anthropology for research into teaching and learning.
- (b) There is a small amount of capacity in university departments of psychology and linguistics for research into teaching and learning, but
 - (i) this capacity is concentrated in only a few departments;
 - (ii) little of the research is of an applied kind, and less in mainstream educational contexts.
- (c) Social scientists believe that at present they have little incentive to conduct research into teaching or learning.
- (d) University education department staff are well disposed to using social scientific ideas in their research (and indeed report that they generally do).
- (e) Collaboration between educational researchers and discipline-based social scientists is recognised as being difficult; yet each group would bring expertise to such collaboration that the other demonstrably tends to lack.

Recommendation 1 Strong incentives should be offered within the ESRC Teaching and Learning Programme for collaborative research between educational researchers and disciplinary specialists in the social sciences, for the application of social scientific concepts to non-laboratory teaching and learning contexts.

Recommendation 2 Support for such research projects should be conditional on the inclusion within them of an element aimed at exploring the collaborating researchers' differing preconceptions about how their research will be useful, problems or tensions arising from these, and effective strategies for cross-disciplinary collaboration.

4.2 Capacity for Research for Understanding Teaching and Learning: Conclusions

- (a) It is claimed by university education departments that very large numbers of staff and of PhD students in them are engaged on research into teaching and learning. In contrast, evidence from RAE analyses suggest that a smaller proportion of research-active staff are engaged in such research, and only a very small proportion (7.1%) in generic research into teaching and learning. Evidence from ESRC records and from journal publications gives various intermediate estimates, ranging from twenty per cent to fifty per cent of educational research activity. These figures do suggest therefore that a large amount of research is being conducted into teaching and learning and that, by the standards of the ESRC and of leading journals, a good deal of this research is of high quality;
- (b) Nonetheless, the discrepancies among these figures suggest that a very large amount of research into teaching and learning is likely to be of poor quality, a view shared by the expert educational researchers whom we interviewed. On one hand, this is not surprising, given the backgrounds, training and working conditions of many university education department lecturers. On the other hand, there is surely a need for research into teaching and learning on this large scale, but it needs to be good.

(c) We conclude that there is no lack of lecturers in university departments of education with the necessary motivation, and with some opportunity, to conduct research into teaching and learning; and that a large reservoir of capacity can therefore become available if the research expertise of these lecturers can be enhanced.

(d) Large numbers of PhD students are currently claimed to be engaged on studies concerned with teaching and learning. A small, although still substantial, number of these are ESRC research students, who can be assumed to be receiving good broad initial training as researchers. Most such PhD students are, in university departments with high research ratings, expected to contribute to future research capacity.

(e) Another important potential source of future capacity is the large body of educational contract researchers, who demonstrably have the motivation to be researchers and who either have research expertise or are well placed to develop it. What they generally lack is a coherent career structure and, in many cases, sufficient job security to be able to plan intelligently to continue their engagement with research.

(f) There is good reason for complaint that insufficient attention has been given in this country to the critical review, synthesis and use of both the research done in Britain, and the very large international body of research, into teaching and learning.

Recommendation 3 The Programme should take deliberate steps to ensure that junior lecturers, contract researchers and PhD students have sustained opportunities over periods of at least two years to engage with the Programme's teaching and learning research projects so as to develop their expertise in research of this type. Attention should be paid to:

- (i) the composition of research teams;
- (ii) contract researchers' prior research training and the length of their contracts;
- (iii) earmarked research studentships associated with projects.

Recommendation 4 Substantial Programme resources should be allocated to thorough, critical reviews and syntheses of national and international research on teaching and learning and to consideration of the implications of these for policy, practice and further research.

4.3 Capacity for Research for Evidence-based Teaching and Learning: Conclusions

(a) Even on the basis of university education departments' self-reports, the evidence is of relatively limited capacity in them for quantitative research into teaching and learning effectiveness, although that capacity tends to be concentrated in the highest rated research departments. Evidence from other sources shows the level of such capacity to be very low.

(b) Capacity for research of this kind appears to be found predominantly among researchers with backgrounds in psychology, and in universities among those working in education and psychology departments and publishing in educational psychology rather than purely educational journals.

Recommendation 5 Since the level of capacity for this kind of research is very low, the success of the Programme in enhancing capacity in this respect (and even perhaps in sponsoring high-quality research) will be dependent on it adopting a highly pro-active strategy in this area.

Recommendation 6 Such a strategy should be designed to educate, encourage and to support educational researchers in the use of diverse approaches to quantitative study of teaching and learning effectiveness, recognising the genuine difficulty and complexity of useful research of this

kind. It would be counter-productive for the Programme to be used to promote any single narrow orthodoxy of approach.

4.4 Capacity for Researching and Learning Schools and Colleges: Conclusions

(a) While there is much enthusiasm for research to be more usable and more used by schools, and also for schools to see themselves as actively engaged in research, there are very diverse understandings of what all this might mean, what responsibilities schools should accept, and why they should accept them.

(b) There seems nonetheless to be a strong consensus not only in support of schools' greater engagement with research but also about the centrality in this of research partnerships between schools and university departments. Most university education departments claim to operate such partnerships, although there seems to be little evidence of these in research publications.

(c) In Further Education, there is an equally strong move towards staff engagement with research into teaching and learning, and also towards partnership with universities to develop such research work. It is important to recognise, however, the distinctiveness of FE teaching and learning, and of its research needs and aspirations.

Recommendation 7 A major priority for the Programme should be to seek to develop research capacity of this kind. One of the most appropriate ways for it to do this will be through supporting systematic investigations of the problems and possibilities for schools and colleges in becoming research organisations, in working in sustained research partnerships with university departments, and in generating high quality research into teaching and learning.

Capacity for Research into Teaching and Learning

Chapter 1: An Overview of the Issues

1.1 Introduction

One of the aims of the ESRC Teaching and Learning Research Programme is to 'contribute to the development and expansion of research capacity in the field', the field being education or, more specifically, teaching and learning. The purpose of this first chapter is to consider what that might usefully mean. More specifically, it will seek to

- (1) make broad distinctions which may be necessary for this purpose among different kinds of research into teaching and learning and ways of using that research;
- (2) consider the concept of 'research capacity' and how it may appropriately be operationalised in relation to such different kinds of research;
- (3) consider possible methods by which the country's broad capacity for such research may validly but simply be estimated;
- (4) consider what might be involved in developing and expanding such capacity.

This chapter will first consider kinds of research into teaching and learning and their use; and then the general notion of research capacity. It will then consider, in relation to each of the different kinds of research, what capacity might mean for this kind of research in particular, where such capacity might be found, how it might be assessed and, finally, how the capacity might be enhanced or developed.

Since the Programme's remit is to concern itself with teaching and learning in all possible formal and informal contexts, it is important that the analysis of research capacity offered here should be comprehensive, taking account of these diverse contexts. The analysis offered in this first chapter will seek to be general and inclusive, but as such it will be based on assumptions about the comparability of issues of research capacity for these diverse teaching and learning contexts. In order to explore the validity of such assumptions, semi-structured interviews have been held with key people who are knowledgeable about research from different institutional perspectives, about different research traditions and especially about research into teaching and learning in different contexts. Findings from these interviews will be reported in the second chapter.

A key component of this study is the obligation to describe, and ideally to quantify, the current capacity of the UK for research into teaching and learning. Means for doing this will, as noted, be explored in the first chapter. In the third chapter, the results of these attempts to describe and to quantify current research capacity will be reported.

1.2 Conceptions of Research into Teaching and Learning and its Use

It seems necessary to distinguish for this purpose among four very broad ways in which research into teaching and learning may be conceived and approached. These distinctions are firstly among different agents of research, specifically social scientists in general, professional educational researchers, and professional teachers; and secondly, to some extent coinciding distinctions among very different ways in which research may be seen as informing the policy and practice of teaching and learning.

A Applied Social Science research into Teaching and Learning

Teaching and learning activities are such endemic and important aspects of human life, and especially of life in today's societies, that they are properly the subject of research within several of the social science disciplines. It has been persuasively argued, furthermore (e.g. Beveridge, 1998), that one of the major limitations of educational research generally, and of research on teaching and learning in particular, is the limited extent to which it tends to be informed by relevant theoretical work in the social sciences. Therefore it may reasonably be suggested that one kind of research which this Programme might fruitfully promote is research which takes its starting point in social science theory. It is assumed, however, that the kind of research capacity with which the Programme is concerned should be limited to research which is undertaken with a deliberate intention that it should be useful in some way in informing social practices of teaching and/or learning.

The ESRC is accustomed to distinguishing between 'basic', 'strategic' and 'applied' research, and these distinctions are probably helpful when teaching and learning are viewed from the perspective of social science disciplines such as psychology, sociology or economics. From such perspectives, any research into teaching and learning that is designed to be of practical use is likely to be seen as 'applied' or at best 'strategic'; and it is no doubt because of this, and because of the low status of applied research, that so little research is done in education by mainstream social scientists. The contrast between educational research, concerned as it generally is with implications for policy and practice, and disciplined-based research in the social sciences is a sharp one. For example, commenting on 79 ESRC End of Award Project Reports submitted in 1996-97 within the Knowledge, Communication and Learning Theme, McIntyre (1997) noted the following:

About sixty of the seventy-nine projects under consideration here were based in university Psychology or Education departments. The cultures of these two kinds of departments tend to be very different, especially with regard to the impacts sought for research findings and analyses.

Most of the projects based in Education departments were conceived, conducted and used with a view to influencing official policy and/or professional practice in a fairly direct way. The claims made for the impact of such projects therefore tend to be about dissemination of findings to, and discussion of implications with, schools, LEAs, teachers and especially official bodies such as DfEE, SCAA, OFSTED, TTA and NCVQ. The strongest claims are those which produce evidence not only of having been listened to by such bodies but also of having had a demonstrable influence on their policies.

In contrast, the majority of projects based in Psychology departments seem to have been conceived almost entirely in terms of the theoretical issues to be pursued, and with no thought to research users other than the research community to which the researchers themselves belong.

What seems to be lacking in the research into teaching and learning conducted both by Psychology and by Education departments is research which is both theoretically informed and also directed towards providing useful guidance for policy and practice. It seems likely that the notion of 'applied' research into teaching and learning is a useful one when considering the capacity of the social science disciplines for such research, and how this capacity might be increased.

B Research for Understanding of Teaching and Learning

Within the field of educational research, there is a widespread assumption that the value of research must in large measure be judged in terms of its usefulness in informing policy and practice. Thus virtually all educational research is 'applied' or at least 'strategic', although few educational researchers would find these categories helpful or appropriate. There remain, however, important distinctions to be made between ways in which educational research into teaching and learning might be useful, and significant controversies about the value, feasibility and appropriateness of these. For the purposes of this project, it seems useful to distinguish three broad ways in which research into teaching and learning can be conceived and used.

First, a widespread view among educational researchers (e.g. Nisbet and Broadfoot, 1980; Hammersley, 1997) is that educational research can most usefully inform teaching and learning through the improved understandings it can offer of educational practices, processes and institutions. These improved understandings do not, and cannot, provide instant recipes for good practice, but gradually, over quite long periods, through teacher education, curriculum materials and other channels, they lead to more informed and insightful policies and practices. There is little doubt that research does influence teaching and learning in such ways, although the indirectness and the timescales involved makes quantification of such influence and of consequent benefits virtually impossible. Research undertaken with this view of its usefulness has in recent years been predominantly qualitative in nature, although quantitative research can serve the same kind of function. Capacity for research of this kind is likely to be of a generally academic and social scientific kind. Capacity for its use will depend on the general interpenetration of the academic educational world with that of policy and practice.

C. Research to Guide Evidence-based Teaching and Learning Practice

An alternative view, less popular in recent years, but vigorously and influentially promoted by, for example, Hargreaves (1996), is that research should be directed more towards the provision of direct guidance about effective practice in teaching and learning. Teachers should have access to evidence from controlled studies (ideally randomised controlled experiments) about the procedures most likely to achieve specific desired learning outcomes in specified types of

circumstances. The relative scarcity of such research must to some extent be because of the difficulty of doing it with a persuasive degree of validity, a difficulty which is due in part to the technically demanding quantitative research involved and in part to the organisational problems of achieving the willing collaboration of groups of schools, teachers, students, parents and/or learners in non-institutional contexts. Capacity for research of this second kind must thus involve both a distinctive kind of academic engagement and a strong inter-institutional infrastructure. Capacity for its use depends on policy makers' and practitioners' readiness and ability to be distinctively guided by this type of research-based knowledge.

D Researching and Learning Schools

While the above approaches to educational research into teaching and learning emphasise the theoretical or generalisable knowledge sought by professional academic researchers, other approaches place more emphasis on the local context and on the role of practitioners. Long-established theoretical perspectives emphasising investigation aimed at understanding or 'evaluation' of specific local institutions or cases rather than the aspiration to generalise (e.g. Cronbach, 1975; Stake, 1978), and the importance of the 'teacher as researcher', ideally placed to engage in action research on his or her own practice (Stenhouse, 1975), combine here with more recent concerns that schools can and should themselves be 'knowledge-creating' (Hargreaves, 1999). Such an emphasis on teachers and schools as the agents of research, and of specific institutions or local contexts as the primary beneficiaries, implies some merging or at least some redefinition of the roles of schools and of academic researchers. It does not imply any diminution in the need for rigour in research on teaching and learning, but it does suggest the critical importance of partnerships between researching schools and academic research institutions. Capacity both for such research and for its use must depend on how the work of these partnerships becomes part of a redefinition of the work of each of the collaborating institutions.

A rather different tradition is that of developmental research, concerned to produce new curricula or teaching approaches, in which schools work closely with development agencies. Such developmental research was very significant in the UK in the seventies and remains of importance in continental Europe and the United States. Earlier activity of this kind tended to share the centre-periphery limitations, but not the political advantages, of National Curriculum developments. Today, capacity for such developmental research would depend on strong knowledge-creating schools working in dialogue with external developmental agencies. Just as teaching and learning are activities widely pursued outside educational institutions, so research into such teaching and learning probably occurs in other organisational contexts most obviously in relation to industrial training. Schools are not the only organisation in which capacity for research into teaching and learning may be needed and may exist.

Finally, it is important to include a less ambitious but nonetheless radical and challenging conception of how schools, and teachers and learners in other contexts, might be engaged with research. Contributing to research-based knowledge is not an aspiration which all educational institutions, teachers and learners will share. On the other hand, if research is to be seen as useful for learning and teaching, then a basic aspiration of researchers in this field must be that the learning teacher, the learning learner and especially the learning school will be learning from, among other things, research. The capacity of teachers, learners and schools to interpret and use research effectively must be viewed as one element of research capacity in this field.

While these broad conceptions of how research should inform policy and practice have generally been debated as alternatives, there is no reason why they should not be viewed as mutually complementary approaches to research on teaching and learning.

1.3 The Concept of Research Capacity

'Capacity', in its literal meaning, is concerned with how much can be put into a space or a container. It is a quantitative concept, and it is concerned with potential. 'Research capacity' is not then concerned with how much research is being done, but with how much could be done. 'Potential' might however imply what could be possible in the future; and presumably, with time and investment and sufficient inducement, millions of people and thousands of organisations could eventually become effectively geared to engage in research on teaching and learning. In discussing capacity, and especially in our attempts to estimate capacity, we are clearly not concerned with such future possibilities, but rather with present capacity. We have noted that one of the Programme's aims is to 'contribute to the development and expansion of research capacity in the field'; and that is an entirely sensible aim. Present capacity then is the amount that could be done now.

A useful elaboration on this is offered through analogy with the concept of 'thermal capacity', the quantity of heat required to raise the temperature of a body by 1° C. The increase in temperature depends not only on the amount of heat but also on the nature of the body. By analogy, we may note that research capacity will depend not only on the ability and willingness of people to do research but also on the nature of the organisations and systems within which they have to operate.

How much research into teaching and learning could be done now? If it were needed or wanted, how much could be done now? One difficulty with interpreting these questions is in deciding what is to be viewed as part of the capacity and what is to be viewed as part of the conditions necessary for the capacity to be realised. Is the fact that I want to do research of this kind to be viewed as an element of my capacity to do it, or as a condition for the realisation of such capacity as I have? Is the fact that the ESRC has a budget for research in this area to be viewed as part of the country's capacity for research of this kind, or rather as a condition for the realisation of that capacity?

Our simple way of answering such questions is to borrow from Heider's (1958) common-sense psychology and to view 'capacity' as 'what we can do when we try'. 'Trying' is the condition for unlocking such capacity as one has. Thus, the country's present capacity for research of this kind is the amount of such research that could be done if the Government, and associated central bodies such as the ESRC and the Higher Education Funding Councils, made their best focused efforts to get such research done. Such 'trying' would include making as much funding available for such research as could effectively be used, and also using Government power and influence in other ways to facilitate the research. The country's capacity is the most it can do when limited, not by lack of immediate funding nor by factors under the immediate control of Government and central bodies, but only by other factors.

The idea of 'as much funding for such research as could effectively be used' makes apparent, however, the problem that capacity (at least when seen in the above terms) is not likely to be a fixed amount, but is much more likely to be elastic, according to the interpretation of such a condition. To take a simple example, there has been a strong trend in recent years for research grants and contracts to be for much shorter periods than in earlier decades. Funding for research on teaching and learning might be provided by central bodies on the current pattern, with a model contract being for around one year, or on a more intrinsically rewarding and more financially secure basis, with contracts of around three years. It is fairly obvious that the availability and commitment of able and experienced researchers will be substantially greater for the latter type of contract; but this would involve greater expenditure and reduced control by central bodies. Another example might be provided by the problem, already mentioned, of attracting researchers from within the social science disciplines to engage in 'applied' research on teaching and learning: while career incentives and disciplinary cultures are likely to motivate such researchers away from research of this kind, well targeted financial incentives might possibly lead them to become part of the country's capacity for such research.

It will perhaps, given this danger of elasticity, be most useful to adopt a narrow conception of 'current capacity' as meaning what it is possible to do now, without any further policy, or organisational or cultural developments. Thus any subsequent changes in potential researchers' attitudes, beliefs or abilities, leading in turn to changes in research practices, should be viewed as changes in capacity not as the mobilisation of dormant existing capacity. What kinds of factors determine the country's capacity for research on teaching and learning? If for convenience we think of capacity in terms of the people who could be doing and/or using such research effectively, then it is clear (again following Heider) that these people would need to have the necessary expertise and the necessary motivation and that they would need the necessary organisational structures to give them the opportunity to do and/or use the research effectively.

Expertise would include the necessary methodological understandings and skills to do the relevant kinds of research, useful practical or theoretical perspectives on the substantive field of teaching and learning, and an adequate contextual understanding of the institutions and cultures with which the research was concerned.

Motivation would include the extent to which research in general, and specific kinds of research into teaching and learning in particular, were priority concerns within the cultures within which the people work or recognised obligations of the roles in which people are employed, and also the established common incentives, for individuals and institutions, financial and of other kinds, which lead people to engage, or not to engage, in these kinds of research.

Opportunity is the most complex of these three general factors. Most basically, it includes people's working conditions, such as whether or not people have the necessary time, facilities and support services to make research of the relevant kinds possible. For some kinds of research, it also includes whether or not there are necessary inter-institutional arrangements to make the research possible, such as arrangements to facilitate the planning of controlled experiments across several schools or other common frameworks to allow systematic comparisons.

Each of these factors will of course have to be considered in more detail in relation to each of the approaches to research and its use which we have identified. However, in considering research capacity as a general concept one further consideration is necessary. It has already been noted that the idea of capacity as an unambiguous fixed amount is unlikely to make sense in relation to research capacity, since the policies pursued by Government and central bodies such as the ESRC certainly influence the capacity which could become available. It needs also to be recognised that there are other important reasons why it is not possible to think of research capacity as an unambiguous fixed amount. Whichever approach to research on teaching and learning one might consider, there is no doubt that doing such research well is a highly complex and difficult task; and while there might, under attractive conditions, be many people willing to do such research, and able to bring some relevant expertise to it, estimates of capacity will vary depending on the standards one sets for expertise, and more generally for the quality of the research that could be done.

1.4 Considering Capacity for Different Conceptions of Research into teaching and Learning

1.4.1 Capacity for Applied Social Science Research into Teaching and Learning

Under consideration here is research which takes as its starting point theories relating to teaching or learning within one or more of the social science disciplines, and which explores the implications of these theories for teaching and learning in particular contexts, with a view to informing policy or practice. Such a purpose implies that there should be a concern (immediate or long-term, but certainly explicit) with understanding good or effective practice, or with optimising such desirable practice. Such research might for example be concerned with the application of cognitive psychology to understanding teaching and learning phenomena in school classrooms,

with the use of risk theory from economics and/or psychology for understanding secondary school students' practical orientations to educational qualifications, or with ways in which Bernstein's or Bourdieu's sociological theories could help schools to understand and thus to revise the account taken in their teaching of the home learning of students from working class or ethnic minority communities.

1.4.1.1 Conceptualisation

Expertise necessary for this kind of research would include, most obviously, a thorough understanding of the relevant theoretical area. It would also include a good wideranging social scientific methodological expertise, of quantitative and qualitative kinds, including extensive skills in assessing educational attainments. Finally, it would include an understanding of the cultural and organisational constraints and priorities operating in the context with which the research was concerned.

Motivation to engage in this kind of research would depend on attributing importance, for whatever reason, to generation of the distinctively applied kind of knowledge with which such research is concerned. It seems clear that the combination of motivation with expertise is critical to the country's capacity for this kind of research into teaching and learning. Within social scientific academic fields, status, promotion and access to research funding through peer review all appear to be strongly associated with actual or potential contributions to the core theoretical disciplines, and those who identify with these academic communities therefore tend to be extrinsically (and also no doubt intrinsically, having chosen to enter these fields) motivated to direct their research efforts towards such basic research. Motivation to engage in applied research (into teaching and learning, for example) is therefore rare.

Opportunity to do research of this kind depends first on how far doing research of any kind is part of, is facilitated by, or is at least a realistic possibility in relation to, one's terms of employment. Second, the opportunity might depend on being specifically employed to do research of this kind or on having some degree of freedom to choose the nature of the research one will do. Third, opportunity may be enhanced or restricted by whether or not one has, or can readily establish, close working relationships with institutions or groups engaged in the teaching and learning one might wish to investigate.

1.4.1.2 Institutional Contexts in which such Capacity might be found

Most academic social scientists with the appropriate level of expertise would be found among the staff of university social science departments. Those employed in such departments are, however, most likely to be motivated to concentrate on research contributing to the theory of their disciplines, and least likely to be motivated to engage in applied research. Furthermore, although they are likely to have the freedom to do such applied research, their opportunities as well as their motivation to do so will generally be limited by their lack of direct contact with institutions concerned with teaching and learning, except those of higher education itself.

Academic social scientists who might be more motivated to engage in applied research into teaching and learning, and might also have superior institutional facilities for doing so, could be found in university education departments, although there might be relatively few of these.

A third context in which social scientists with relevant expertise might be found, is in independent research organisations. Motivation for this kind of research in these organisations is likely to depend, even more heavily than in university departments, on external financial incentives; and good opportunities for this kind of research would depend on these external incentives being sufficiently sustained to justify the development of close working relationships with institutions or groups engaged in teaching and learning.

1.4.1.3 The Assessment of Capacity for Research of this Kind

The extent to which the expertise of staff in university social science departments is related to teaching and learning may be estimated from the proportion of successful applications for research grants to ESRC during, say, the 1995-1998 period which can be classified as falling in that area. A check on the reliability of these estimates may be made from the proportion of successful applications in each discipline to ESRC during the same period for PhD research studentships which can be classified as falling within that area.

The extent to which those with social science expertise related to teaching and learning are currently motivated to engage in applied research in that area may also be assessed by considering the proportion of successful ESRC applications for research grants and for research studentships in the area which have been of an applied nature. A cross-check on this could be obtained by asking a sample of heads of department in each disciplinary area to estimate how many of their staff are engaged in such applied research into teaching and learning.

The extent to which there are comparable social science expertise, motivation and opportunities for applied research into teaching and learning in university education departments and in independent research organisations would have to be established by systematic enquiries addressed to these organisations.

1.4.1.4 Possible Ways of Expanding and Developing Capacity for Such Research

It can reasonably be argued that this is one of the major areas in which it could be valuable and possible to expand and develop capacity for research into teaching and learning. On one hand, social scientists have a great deal of relevant methodological expertise and theoretical knowledge; and on the other, we anticipate finding that very little of this expertise is directed into applied research into teaching and learning.

What would be necessary to develop this capacity? The problem appears to be overwhelmingly one of motivation. The cultures of disciplinary social science departments of universities are not geared towards taking an interest in 'soft' and 'applied' fields such as education; and, as Becher (1989) makes clear, their uncertain status could well be in further jeopardy if they were to do so. It is then a fairly fundamental problem, but it is nonetheless one which could be tackled effectively if there were sufficient determination in Government and related central bodies to do so.

One strategy might be to follow the recent treatment given to university education departments, which could appropriately be seen as a pilot study, directed at an appropriately easy target, for the much more serious task of changing the cultures, or at least the practices, of university social science departments. Thus they could first be attacked intemperately by authoritative figures for the uselessness of their research, for their self-serving exploitation of the peer review system to sanction the use of large amounts of public money for the pursuit of their self-indulgent interests, for failure to take responsibility for ensuring that their research findings are appropriately used, and for their lack of close working relationships with the potential users of their research. (All these criticisms could be made with demonstrably far greater validity in relation to social science departments than in relation to education departments.) These attacks could then be rapidly followed up by a Government review of the national condition of the social sciences, precipitated by the evident crisis, and then by a radical restructuring of the use of public finances for the social sciences, including no doubt a fundamental restructuring of the ESRC. In the first instance, such measures would lead only to an outraged and reluctant compliance on the part of university social science departments, necessary for their survival, but sustained application of the new procedures and criteria would in due course lead also to a changing of their cultures.

If, however, such draconian approaches are seen as appropriate only for soft targets such as education departments, other less ambitious but more constructive strategies are possible. As will

be seen later, the need to engage experts in the social science disciplines in research on teaching and learning is not because of a lack of available people to do such research. The problem is rather that those who are motivated, and who have good opportunities, to do such research tend to lack the depth of theoretical knowledge necessary in order to make effective use of the social science disciplines for developing good policy and practice for teaching and learning. The real need is to find ways of combining the motivation and the good contextual knowledge and relationships of these people with the distinctive theoretical knowledge, and also the methodological expertise, of those working within the social science disciplines. To quote again from McIntyre's (1997) overview of 79 ESRC project reports within the Knowledge, Communication and Learning theme:

The contribution of the research reviewed here to an improved understanding of knowledge and skills, and especially to the processes involved in the acquisition of knowledge and skills for their effective use, is quite disappointing. Many of the limitations seem to be associated with a major gap that is apparent between the two academic subject areas which might reasonably be expected to generate such understanding through their research, Education and Psychology. That gap is multidimensional, and stretches across just those areas where research is most needed.

To judge from the research that is reviewed here, a very limited amount of research in Psychology is concerned with children or young people of school age, or with the kind of complex learning required for life and work in a modern society, or with contextual influences upon learning. Thus even the extensive research reported on the cognition of pre-school children, and of adults, seems of very little relevance to the practically important issues about the learning of knowledge and skills, and the facilitation of that learning, which concern not only educators but also parents, employers and those seeking employment, autonomy, understanding and effective engagement as citizens in a modern society.

These are of course educational issues, and one might therefore look to research in Education to confront them. In Education, however, most research within the area of this Theme appears to be very descriptive and evaluative in orientation, and aimed at immediate applicability to the improvement of policy and practice. Little emphasis is placed on understanding processes or explaining outcomes, and the research generally has very limited theoretical concern or underpinning. Furthermore, educational research seems to be very narrowly focused on educational institutions and within educational ideologies. Thus, for example, as last year's commentator noted, there is a severe discontinuity between the kinds of research questions being explored within this Theme for pre-school children and those explored for school-age children.

The research that is most needed within the area of this Theme would combine the strengths of both subject areas: the long-term concern for increased understanding and the theoretical repertoire of Psychology; and Education's focus on complex learning in distinctive contexts and its concern with the practical usefulness of the research. Here, as elsewhere, it is research projects and teams which cross subject boundaries that are most likely to be productive. Remaining within subject boundaries is, however, more comfortable and convenient; and so the ESRC's funding policy needs to offer substantive incentives to persuade researchers to make efforts to bridge the gap.

No doubt the ESRC has already made efforts to foster such cross-subject collaboration, but it is not very much in evidence between discipline-based departments and Education. We believe that these conclusions are generally valid in relation to the way in which university psychology departments could best contribute to research on teaching and learning and also, in very large measure, in relation to the potential contribution from anthropology, economics, linguistics and sociology departments. The Teaching and Learning Research Programme has a distinctive opportunity to

- (i) promote exemplary collaborative research between university education and social science departments; and in so doing to
- (ii) expand high-quality capacity for research into teaching and learning by recruiting social scientists to work in this area; and
- (iii) develop high-quality capacity for research into teaching and learning by persuading and enabling educational researchers to become more knowledgeable about relevant social science theory and more expert in using it in their research.

In addition to an insistence on demonstrated user involvement in proposed research projects, the Programme should, we believe, set aside a substantial proportion of its funds for use only where there is demonstrable collaboration between university education departments and 'mainstream' social science departments. Considerable thought will be necessary, however, in order to provide sufficiently attractive incentives to persuade strong social science departments to collaborate with education departments while at the same time promoting the terms of collaboration that are likely to be productive of good research and the sought-after developed research capacity.

1.4.2 Capacity for Research for Understanding of Teaching and Learning

Here we are concerned with what is indubitably the dominant current pattern of research into teaching and learning intended to be of significance for policy or practice. It differs from the previous category in that it takes as its starting point phenomena of, or concerns about, teaching and learning experienced by people engaged in educational or other activities involving learning or its facilitation, not social scientific disciplines or theories. It is characterised by an assumption that research can be most useful through generating knowledge and understanding of the phenomena investigated. Frequently the rationale for such research stems from concerns, on the part of the researchers and/or of those funding their work, about existing policies or practices. How do teachers cope with the demands of the national curriculum, or of the literacy hour, or of new examination requirements? How, if at all, do teachers and their pupils take advantage of smaller classes, and how do these advantages relate to increased opportunities for learning? How do different kinds of teacher and pupil knowledge, experience and access to computers influence the classroom uses of computers and the learning benefits that accrue from them? What kinds of learning do children do that stem not from school-related agendas, but from other aspects of their lives, and why do teachers know so little about such learning? As these questions suggest, probably the bulk of such research is directly or indirectly related to teaching and learning in schools, although work-based learning, professional learning (especially teachers' learning), and learning in other contexts have probably attracted an increasing amount of research attention in recent years.

1.4.2.1 Conceptualisation

Expertise necessary for research of this kind is perhaps of two main kinds, each quite diffuse and wideranging. First is the need to be knowledgeable about the realities of teaching and learning, at least in the type of context to be studied, but preferably much more widely, and to be knowledgeable in a thoughtful, questioning kind of way. This could very usefully include a wide and/or deep knowledge of social scientific theories relevant to teaching and learning, of the history of educational practices and ideas, of diverse teaching and learning practices in different countries and different institutional settings, of current legislation, debates and controversies, and/or of the philosophy of education; but no one of these is essential. Similarly, professional experience and expertise in teaching can be profoundly valuable, but is not essential and can sometimes be limiting. An important element of this expertise is the ability to empathise, and to communicate, with teachers and with learners.

The second type of expertise that is essential for this kind of research is wideranging methodological skills and understanding. Because such research is not limited to any one type of stance or strategy, ability in doing it depends on insightful formulation of research questions and

intelligent, non-ideological and well-informed choice and then use of strategies and techniques for investigating these questions.

Motivation for such research would be likely to stem from some combination of commitment to the improvement of teaching and learning, belief that such improvement will depend on the understanding of those involved, recognition of the need for such understanding to be based on systematic and disciplined research, obligation to engage in such research, and intellectual curiosity about the phenomena being researched.

Opportunity to do research of this, as of the previous, kind depends first on how far doing research of any kind is part of, is facilitated by, or is at least a realistic possibility in relation to, one's terms of employment. Second, the opportunity might depend on being specifically employed to do research of this kind or on having some degree of freedom to choose the nature of the research one will do. Third, opportunity may be enhanced or restricted by whether or not one has, or can readily establish, close working relationships with institutions or groups engaged in the teaching and learning one might wish to investigate.

1.4.2.2 Institutional Contexts in which such Capacity might be found

The great bulk of current capacity for this kind of research into teaching and learning is likely to be found in university departments of education. There are, according to the 1996 RAE, almost three thousand research-active members of staff of education departments, a large proportion of whom are likely to be engaged on research into teaching and learning, most of which may be assumed to be of this kind. In addition, university departments of education employ substantial numbers of contract researchers, many for research of this kind. Furthermore, some of the UK students engaged in training as researchers in university departments of education focus their attention on research of this kind. It may be argued that substantial capacity for research of this kind may be found not only in those currently active in such research but also in others from these three broad groups: tenured staff, current or past contract researchers, and current or past research students, of university departments of education.

Another contributor to capacity for this kind of research into teaching and learning is the independent research organisations, especially the two national organisations, the National Foundation for Educational Research and the Scottish Council for Educational Research. These organisations do research of a broadly comparable nature to that done by university education departments. In that they are staffed by full-time professional researchers, their contribution to capacity, both in quantity and quality, is substantial.

1.4.2.3 The Assessment of Capacity for Research of this Kind

On a liberal interpretation, one could assume the whole of the research capacity of university departments of education (including expertise, motivation and opportunity) to be available for research into teaching and learning of the broad kind under consideration. In contrast, a conservative estimate of capacity would be one based on the current (or recent) quantity of this kind of research. Use will be made of the analysis of RAE returns made by Bassey and Constable (1997); university departments of education will themselves be asked how many of their staff are actively engaged in research of this kind; and an analysis will be made of research grants awarded to education departments by the ESRC in recent years.

The task of assessing the research capacity of contract researchers, especially those in university departments of education, is a particularly difficult one. The first problem is that of judging whether, or how far, the research capacity of contract researchers is already incorporated into estimates of capacity derived from RAE data. On one hand, departments are likely to have used the work of contract researchers in order to present as impressively as possible their departmental achievements; on the other, only the most senior and securely employed contract researchers,

and therefore those with the best publication records, are likely to have been included as active researchers. Those contract researchers not so included should therefore be seen as offering additional research capacity. But what is the nature, amount and quality of that additional capacity? A very detailed survey was conducted by BERA in 1997 of contract researchers working in university departments of education which demonstrated, among much else, that educational contract researchers form a highly diverse population, a large part of which is very transitory, simply because of the insecurity of the employment. Even with the survey information, it is very difficult to know how many contract researchers would be available for research work in a year's time. For present purposes, however, it is clear that in the time available it will not be possible to match the amount or quality of the information on contract researchers derived from the BERA survey; emphasis will therefore be placed on analysing the results of that survey from the perspective of capacity for research into teaching and learning.

The majority of British PhD students in Education study on a part-time basis, while continuing employment as teachers or in other educational occupations. Few of these part-time students seek, and fewer obtain, ESRC support; and it seems likely that few of them complete the thorough broadly based research training which ESRC would require. In order to assess the capacity that current and recent Education PhD students offer for research of this kind into teaching and learning, it will therefore be necessary to seek simple information from departments about the nature of their theses and their availability to engage in research after completing their PhDs.

In contrast, a large proportion of the relatively small number of full-time British PhD students in Education are supported by the ESRC. Since these full-time students do complete a broadly based methodological training, and since it is they who are perhaps more likely to seek research careers, and thus to add substantially to the country's capacity for this type of research into teaching and learning, a separate analysis of ESRC records of the Education PhD students whom they have supported in recent years will be conducted.

1.4.2.4 Possible Ways of Expanding and Developing Capacity for Such Research

It is no doubt a mark of their demoralisation after suffering years of high-profile criticism, and severe loss of autonomy in other areas, but the staff of university departments of education seem in general to be remarkably responsive to external financial inducement in the way they direct their research energies. There is furthermore no reason to question the cultural support within university departments of education for research of this type into teaching and learning, nor the commitment of individuals to, or their interest in, this type of research; and the close working relationships which all university departments now have with schools make it likely that opportunities for this kind of research can be relatively easily negotiated. There is every reason for confidence, therefore, that this ESRC Teaching and Learning Research Programme can be effectively used to expand and develop this kind of research capacity within university departments of education if that is seen to be desirable.

There will, it is predicted, be no difficulty at all in persuading large numbers of education department staff to engage in such research. A more difficult task will be that of ensuring that the expertise for such research is developed and so that the research is of increasingly high quality. It is generally the case that a very large proportion of the staff of university education departments lack a thorough research training and also lack experience of working in high quality research projects: while there are many good researchers in these departments, there are many more who are obliged and in some cases eager to be 'active researchers', but who have not had the opportunity to develop much research expertise. This problem is possibly compounded by a tendency for the most established researchers in education departments not to engage in research on teaching and learning, but to concentrate on wider issues of educational policy, management and organisation. There are indications from the Bassey and Constable (1997) RAE analysis, for example, that this may be so. Whether or not this is so, the main challenge in developing capacity for research of this kind is that of developing the necessary research expertise.

For the Programme to be deliberately used to develop such research capacity, those directing projects within it would need to accept a significant obligation to develop the research expertise of colleagues. While core members of research teams would presumably be established researchers with proven expertise in this field, there could be an obligation not only to include junior researchers in the teams but also to ensure that these junior researchers had experience of working collaboratively on all phases of the research, with the specific purpose of developing their expertise.

Some of these junior researchers should certainly be members of the teaching staff of departments. In addition, however, the Programme has an opportunity to develop the needed research capacity in two other ways. One of these relates to the large number of contract researchers who will be employed on its projects. The BERA survey shows, not surprisingly, that contract researchers in university education departments vary greatly in their research training, and vary also in their expectation of, and indeed in their desire for, careers in which educational research will be important. The Programme can contribute substantially to the development of research capacity by insisting that all contract researchers employed on its projects have had educational, or at least social science, research training to ESRC standards, and that their contracts are designed (in length and in conditions) to enable them to develop specific expertise in research on teaching and learning.

In addition, there is an opportunity to develop capacity at an earlier stage by recruiting PhD students to work within the framework of Programme projects. If the Programme were to finance an extra six PhD studentships each year, say, it would be reasonable for the ESRC Training Board to be asked to earmark twelve of its Education studentships for students working within such projects.

Finally, one of the clearly legitimate complaints of recent years relating to this type of research has been about the lack of adequate attention to its use. While it is arguable that such research should not be expected to have a direct and immediate impact on policy or on practice, that is no excuse for leaving its impact to chance. It is necessary that the claimed findings of research of this kind should be critically examined, that the implications of bodies of such research for theoretical understanding of teaching and learning should be critically synthesised, and that the implications of such theoretical understandings for policy and for practice should be thought through in a disciplined way. Such consideration of the implications for use of this kind of research is as important and as demanding a task as doing the research itself; yet it is strikingly neglected by British researchers, their journals, their organisations and their funders. A major gap in the country's capacity for research of this kind into teaching and learning is the lack of established frameworks, and of experienced and expert practitioners, for this task of considering the implications of research for use.

It is not, however, sufficient that this work of interpreting the implications of research for policy and practice should be done. It is equally necessary that it should be attended to. It is very encouraging that national educational policy-makers should be showing a greater interest in the help that research can give them than has ever before been the case in this country; but it must also be said that these same policy-makers show a marked reluctance to listen to the clearest message that research into teaching and learning has to offer: that these are complex processes, not likely to be enhanced by simple prescriptions. Similarly in relation to practice, the usefulness of research depends upon teachers having the opportunity to think hard about its implications for their practice; and while there is much to be admired about the TTA's efforts to create a national framework for teachers' professional development, as yet that framework shows little concern for such thinking by teachers.

1.4.3 Capacity for Research for Evidence-based Teaching and Learning

In contrast to the previous category, the capacity to be discussed here relates to a very specific kind of research into teaching and learning, that concerned with the effectiveness of patterns of teaching and learning, or with 'what works'. There is considerable controversy over the feasibility of establishing the necessarily authoritative and generalisable guidance for practice to which such research aspires. In part, that is because some of its proponents (e.g. Reynolds, 1998) have adopted implausible extreme positions, arguing for teachers' professional craft knowledge being replaced by an 'instructional technology' which teachers would apply. But even the more modest claim that such research-based knowledge could be made available, and could usefully inform teachers' practice, has been strongly contested (e.g. Hammersley, 1997).

This kind of research into teaching and learning is almost necessarily quantitative, since it depends on the identification of key variables in teaching and learning processes, and the study of how these relate, across different cases, to outcome variables. Such research has always been much more widely used in the United States than in Britain, but in both countries reached its peak in the early 1970s. The ideal pattern, enunciated for example by Dunkin and Biddle (1974), of qualitative studies to establish important variables, followed by correlational studies to examine the impact of naturally occurring differences, and finally by randomised controlled experiments to isolate the effect of potentially crucial variables, was rarely realised in practice. Correlational studies were dominant.

McIntyre (1998) has argued that among the 'good reasons' for which 'fastidious educational researchers' abandoned research of this kind, at least temporarily, in the 1980s were:

'1) We became aware, through helpful critiques from qualitative researchers, of questionable assumptions we were making in our descriptions of classroom activity.

2) We became aware, with the help of critical reviews by leading exponents of this kind of research (e.g. Rosenshine and Furst, 1973; Dunkin and Biddle, 1974) of the atheoretical and ungrounded nature of our selection of variables for study.

3) We found it difficult to design research which took account, as we increasingly recognised we needed to, of the thinking of teachers which informed their actions and of the thinking of pupils which underlay their successful learning.

4) We encountered in practice difficulties of validly translating the complex realities of school life into measurable variables (e.g. McIntyre and Brown, 1978).

5) Since problems concerning ethics, power and external validity led us not to conduct controlled experiments, we were dependent on correlational studies the results of which were necessarily ambiguous in relation to questions of 'What caused (or facilitated) what?'

6) With Cronbach (1975), we were aware that whatever truths we might uncover would be culturally and historically bounded; and our confidence in the cumulative usefulness of our work was shaken.'

(ibid., pp.192-3)

None of these problems have gone away. The difficulty of doing this kind of research at all well is substantial. In addition, the impact of such problems has led to educational research being increasingly dominated by qualitative ways of thinking. But with a new national enthusiasm to make research useful, to facilitate such useful research, and to use it to inform policy and practice, the effort to foster such research is surely worthwhile. We do start, however, from a position of very limited capacity for it. Without a substantial number of experts who can plan such research and act as models for others, the development of capacity will be hard work.

1.4.3.1 Conceptualisation

Expertise for this kind of research depends first on having a good theoretical understanding of teaching and learning activities, processes and outcomes, and an ability therefore to deal with the multiple problems involved in validly operationalising theoretical questions in terms of variables standardised across contexts. It depends secondly on being a good qualitative and quantitative

researcher, the former in order to confront the false assumptions one is in danger of making, the latter in order to plan appropriate research designs, to develop reliable and valid measures, and to conduct the quantitative analyses necessary. There is disappointingly little quantitative educational research expertise in Britain currently, and relatively few of those with such expertise are likely to have substantial experience in studying the processes of teaching and learning.

Motivation to engage in this kind of research is, as noted, limited by doubts both about the view of teachers' professional expertise which it implies, and about the feasibility of doing productive research of this kind. (And even those who argue most enthusiastically for it (e.g. Hargreaves, 1996; Reynolds, 1998) tend to do so on general ideological grounds rather than on the basis of having themselves found ways of resolving the technical problems.) An important element in motivating a significant body of researchers to engage seriously with this kind of research will be overcoming these doubts. Given confidence that the findings of such research will be valued and used by teachers, and that they themselves will be able to do such research successfully, educational researchers may be predicted to be very ready to engage in such research. Initially, however, external financial and other possible incentives are likely to be important.

Opportunity to do good research of this kind is also problematic. Any good research of this kind requires sustained and intrusive researcher presence in classrooms or other teaching and learning contexts, with significant demands also likely on teachers' and learners' time. Teachers and learners in different institutions also have to agree to assessment of learning (and ideally also pretests) for the purposes of the research through use of the same standardised instruments. Problems of comparability of different classes or other groups cannot be resolved statistically, however sophisticated the procedures used, and so randomised allocation of learners to groups, in ways that are not experienced as 'artificial', is ideally an important requirement of research of this kind. Agreement to all of this is likely only from schools highly dedicated to the research partnerships and programmes in which they are working.

1.4.3.2 Institutional Contexts in which such Capacity might be found

Capacity for this kind of research, as in the previous case, is likely to be almost entirely in university departments of education and in independent research organisations. It is likely however to be thinly scattered.

1.4.3.3 The Assessment of Capacity for Research of this Kind

Given what has already been said about problems of expertise, motivation and opportunity in this area, the expectation must be that current capacity for research of this kind is rather limited.

No existing statistical evidence seems obviously relevant to an estimation of this capacity. The main way in which such an estimation can validly be made would therefore seem to be through a survey of the capacity of university social science and education departments. The low expected level, and the scattered distribution, of the capacity suggests that only a survey of the complete population of identified institutions will be adequate.

As a check on this self-report data from institutions, an analysis will be conducted of the number of quantitative research studies on effective teaching and learning which have been published in leading refereed educational research journals in this country in recent years.

ESRC research grants and studentships awarded in recent years will also be analysed to identify any which have been concerned with research of this kind.

1.4.3.4 Possible Ways of Expanding and Developing Capacity for Such Research

At one level, the task here is simple. Almost any research of this kind which is promoted by the Programme will automatically lead to an expansion of research capacity. The problem therefore becomes one of effectively promoting such research.

The initiative already taken by the TTA in sponsoring a small number of research partnerships which were required to meet quite demanding conditions should be helpful here. The progress made, and the problems encountered, by these partnerships should be studied carefully. The initiative already taken by the Programme itself in proposing to establish networks of researchers with common interests is also helpful in indicating one way in which research of this kind could be promoted. Here it would be appropriate for the Programme Steering Group itself to take the initiative in planning the network and in deliberately recruiting members to it. Membership might be open, for example, to formally constituted research partnerships between schools and educational research institutions (such as university departments of education), within which there was an interest in engaging in this kind of research, demonstrable quantitative research expertise and demonstrable expertise in classroom research. The network would have to treat as priorities the development of practically feasible models whereby schools would find engagement in such research a realistic and attractive possibility, and the development of shared expertise for the conduct of such research.

Suggestions made in relation to the 'research for understanding' type of research would also be especially appropriate here. Requirements that research teams should include junior members of staff as learner researchers and that research officers should have completed research training to ESRC standards, and the partial financing by the Programme of earmarked ESRC PhD Education studentships associated with projects of this kind all seem especially relevant to research of this kind.

With regard to capacity for use of research of this kind, it is pleasing that the DfEE Standards and Effectiveness Unit has already committed itself to the establishment of a centre for this precise purpose.

1.4.4 Capacity for Researching and Learning Schools

While the possibility of schools or other institutions for learning engaging in high quality research without any involvement of other more specialist research institutions is not to be ignored, it is in the short term likely to remain a rare phenomenon: schools are not generally staffed for such work, nor do many believe that they can appropriately allocate significant resources to such work. Even when working in partnership with university departments, for example, the primary motivation of schools tends understandably to be the concern to improve their own teaching and learning practices rather than to generate knowledge of a kind likely to be useful to others. While such partnerships have distinctive merits in that they both ensure the practicality of research agendas and facilitate the conduct of the research, they also have inherent tensions, most obviously those between the schools' concern with what is immediately relevant to their local contexts and with what is in their subjective view immediately useful and university departments' concern with generalisable knowledge explicitly formulated to maximise its potential usefulness elsewhere.

Ideas of 'the teacher as researcher' and of 'teaching as a research-based profession' have been widely discussed for at least half a century, and in England especially for the last quarter century, but their influence on the practices of teaching and of research has never been strong. It has been suggested (e.g. Elliott, 1990) that in the 1970s the action research movement was a significant influence on school-based curriculum and pedagogical development work, although the scale of that influence may be doubted. However, as the recently completed ESRC research project on 'Teachers as Researchers (TAR)' suggests (Elliott et al, 2000), this movement has very largely been excluded from such influence during at least the last decade by central government initiatives, and the widespread use of action research in teachers' work for higher degrees has not had a substantial influence on teaching and learning. Relatively few of BERA's one thousand

members are practising schoolteachers. The TTA, persuaded by BERA to invest in the publication of higher degree research, reported in 1998 a very disappointing response to its advertisement for research that was relevant to teaching and learning. Meanwhile the TTA itself, while at one level promoting the idea of teaching as a research-based profession, and funding a very small amount of teacher research, has developed a highly prescriptive financial and organisational structure for teachers' professional development work which is immensely more influential and expensive, and which leaves virtually no scope for teacher research.

There can be little doubt that, under strong political pressure, schools are increasingly trying as organisations to take account of evidence available to them about their own specific performance and problems in trying to achieve higher levels of demonstrable success. How far this extends to an interest in using, far less producing, generalised research findings is less clear. There are certainly suggestions (e.g. Hargreaves, 1999; McIntyre, 2000) that schools have both an opportunity and a need to move towards more analytic, explicit, research-oriented ways of dealing with the problems of teaching and learning which they face; but these suggestions are speculative. If it is seen to be clearly desirable that schools should be more deliberately and actively engaged in the generation and use of research-based knowledge about teaching and learning, deliberate development and expansion of this capacity would seem to be necessary.

1.4.4.1 Conceptualisation

The same kinds of expertise as are necessary for the types of research previously discussed are all potentially relevant here, since any of these kinds of research might be pursued. The most definitive characteristic of the research in this category is that it is likely to originate in large measure from practical problems or opportunities perceived by school staff. The distinctive expertise required in directing such research is not as yet well understood, but it is demanding and involves appropriate definition and efficient management of projects to maintain both their local usefulness and their clarity and validity as contributions to more generally useful research-based knowledge. Such expertise is likely to be needed, and to be subtly different, among school and university staff and at different levels of school organisations. It may perhaps be best conceived as research partnership expertise.

Motivation to engage in such research clearly requires understanding of, respect for, and enthusiasm to contribute to all the different priorities and disciplines involved in the intertwined tasks of engaging in, facilitating, and especially developing teaching and learning and also generating valid, explicit, useful research findings. Commitment to the need for this kind of research from those who engage in it, and from those who fund their efforts, will need to be strong enough to accept that progress will depend upon a gradual acquisition of such understanding, mutual respect and inclusive enthusiasm. Early success will be unlikely.

Opportunity to engage in such research is likely to depend on carefully planned partnerships negotiated at the institutional level. Agreement is needed for example about respective responsibilities, about the provision of resources, especially of time and support for the different participants, and about what kinds of intervention will and will not be possible. Careful planning itself, however, is unlikely to be enough. Improved understanding of what is realistic for such partnerships to attempt, of how they can most effectively work, of the problems they will face, and of how these problems can be resolved will be needed before we can know what is involved in creating useful opportunities of this kind.

1.4.4.2 Institutional Contexts in which such Capacity might be found

Capacity for 'researching schools' is envisaged to be unlikely except in the context of partnerships between groups of schools and one or more university departments of education or other educational research organisation. Yet the pressures on schools to be quickly improving, and the pressures on university departments to help them to do so, are in some considerable tension with

aspirations that schools should engage in, or critically use, high quality research. The belief that there are simple known research-based solutions to schools' problems stands in sharp opposition both to teachers' well-refined practices of learning from their own practice and equally to experience of learning through and from research. It will be only within partnerships which recognise how little we know about how research can usefully be part of the work of a school that the needed capacity will be found.

It may be that Local Education Authorities can be powerful agents for encouraging and supporting schools in their increased engagement with, and use of, research. They could quite easily, however, be instead a major source of the debilitating pressures for instant solutions.

1.4.4.3 The Assessment of Capacity for Research of this Kind

We must confess that we have not been able to establish any satisfactory simple means for estimating the country's capacity for this kind of research. We could describe instances of what we believe to be good practice; and no doubt such instances will be systematically and usefully described in the evaluation which has been commissioned by the TTA of the research partnerships which it has funded. But we have not been able to establish clear, robust, generally applicable and consensual indicators to characterise effective 'researching schools', 'research partnerships' or even schools making effective use of research.

Certainly we shall ask university departments of education about any research partnerships with schools which they have established. But the criteria by which one would judge the effectiveness or appropriateness of such partnerships are not at all clear. We shall examine the extent to which papers in research journals are authored or co-authored by teachers or others employed by schools, or otherwise reflect active researching schools or research partnerships; but it is not clear how far the production of such academic papers is a good measure, far less a balanced measure, of schools' effective engagement with research. Given more time, we could have surveyed schools directly to ask about their use of research, their engagement in research, and any research partnership arrangements into which they had entered. Our major difficulty, however, does not stem from time constraints, but rather from two more fundamental problems. First, it does not seem to us that there is yet a clear consensus, even among those who are enthusiastic about schools' more active involvement in research, about either the goals or the desirable processes of such involvement. There are not even two or three identifiable and clearly distinguishable points of view, but rather a widespread vague approval of the general idea and a range of quite diverse preconceptions about what it might mean. Second, this lack of clear shared visions about what is desirable results in large measure from our lack of knowledge about what is possible, what conditions are necessary to make desirable things possible, and what the costs and other implications would be.

Whereas in relation to the other three types of research capacity we are dealing with fairly well understood goals (even though the merits of these goals may be contested), here we are all feeling our way towards something which is widely agreed to be desirable but which is not at all well understood. We believe therefore that it would be misleading to suggest that we have any valid ways of quantifying research capacity of this kind.

1.4.4.4 Possible Ways of Expanding and Developing Capacity for Researching and Learning Schools

The Programme itself, simply by promoting research of this kind, would contribute very significantly to the country's capacity for such research. Since the establishing of well-conceived and robust research partnerships is likely to be the most difficult of tasks, it would be appropriate for evidence that such partnerships were well formed to be a condition for Programme support; but it would also be wise (if the intention is to develop research capacity rather than simply to use and reward existing capacity) to allow a substantial lead-in period, with clear guidance about the nature

of the desired partnerships, in which new partnerships could be planned. It would also be an essential condition that resources should be shared on a significant scale and on explicit terms with the partner schools. The Programme should also direct some of its resources to clarifying ideas of 'researching schools', to developing improved understandings of the costs and benefits involved for schools, and to elucidating both the problems involved in creating effective research partnerships and effective strategies for solving these problems.

1.5 Conclusion

Given a remit to report after three months on the country's capacity for research into teaching and learning, we have started in this chapter by drawing on available literature, and on our own understandings, about the existing state of research into teaching and learning and about current concerns and debates about such research. We have distinguished four broad kinds of research capacity which should in our view be assessed, and which the ESRC Teaching and Learning Research Programme might appropriately seek to enhance. We have offered tentative assessments of the present state of the country's capacity in each of these four areas, and have offered tentative suggestions of steps that could be taken to enhance capacity in each area.

Because of the limited time available, this initial overview has been less cautious than we should ideally have preferred. It has however provided a structure and some simple procedures which will enable us to go on to make some quantitative assessments of each of the four kinds of capacity which we have distinguished. This quantitative information, which will be reported in Chapter 3, will not provide precise estimates of any of the four kinds of research capacity: we have argued that any aspiration to generate objective, reliable, unambiguous measures of capacity would be misguided. The quantitative information which we shall report can, however, provide rough indicators of the strength and weaknesses of different aspects of capacity in each of the four areas. Among other things, it will support or undermine the arguments which we have advanced in this first chapter.

We are, however, conscious that our conceptualisation of research into teaching and learning, and therefore of capacity for such research, reflects our own positions and experience, associated with university departments of education, teaching and learning in primary and secondary schools, the ESRC and (in recent years) England. We needed, even within the limited time available, to do our best to understand the issues from other perspectives, to re-examine our own assumptions and arguments in the light of these, and to consider new possibilities which might arise. It is to the exploration of such other perspectives that Chapter 2 is devoted.

Chapter 2: Interviews with Experts

2.1 Introduction

In Chapter 1 we have outlined a view of capacity for research into teaching and learning which reflects our best understandings of the present situation in the UK and of the questions which need to be asked about it. That view however inevitably incorporates a number of preconceptions which reflect our own distinctive positions and experiences; and the validity of this report therefore depends upon some testing of these preconceptions against the views of others with different perspectives.

This is especially the case because our remit was very clearly to take a wide view of 'capacity for research into teaching and learning', especially in relation to the diverse contexts in which teaching and learning occur, but also in relation to where the capacity might be found. The view we had formulated was influenced primarily by our knowledge of research into teaching and learning in primary and secondary schools, and of research conducted by researchers in university

departments of education. It was important therefore to consult those who were knowledgeable about teaching and learning in other contexts, and about research that is or might be conducted by other kinds of agencies.

The purpose of the interviews reported in this chapter was therefore to explore the potentially diverse perceptions of capacity for research into teaching and learning of people who could offer authoritative views on the matter from a variety of perspectives. We were concerned to learn about the kinds of research into teaching and learning seen to be valuable in different contexts; about conceptions of the capacity required for such research; about perceived sources of such capacity; about constraints upon the development and use of the required capacity; and about suggested ways in which capacity might be enhanced. We were thus interested both in the different teaching and learning contexts for which research might be needed and in the different agencies which might conduct the research. In some important cases, the researchers might of course also be those engaged in the teaching and/or learning to be researched.

Twenty-two interviews were conducted in all with people known to be knowledgeable and thoughtful about the conduct and/or use of research into teaching and learning in different contexts. Some of the interviewees were chosen because of their expertise in relation to specific areas of teaching and learning: early childhood, special needs, further education, higher education and work based learning. Others, selected because of their known commitment at a policy level to the use of research to inform teaching and learning, included LEA Chief Education Officers, a Headteacher in one school, a representative from the Teacher Training Agency and one from the DfEE. Some 'mainstream' social scientists and leading members of independent research organisations were interviewed. Two of those interviewed were research experts working in Scotland where research into teaching and learning takes place within a separate education system. Almost without exception, all those who were approached agreed to be interviewed. (The exception was in the field of lifelong learning.)

The interviews were semi-structured allowing the researcher to cover a set agenda but designed also to allow respondents to raise issues and to establish their own priorities and areas of special interest if they wanted to. All but three interviews were tape recorded.

This chapter will summarise the overall picture of research into teaching and learning as viewed by these experts for each set of contexts or agencies represented, in terms of:

- (i) what kinds of research into teaching and learning are needed;
- (ii) what implications there are, therefore, for research capacity into teaching and learning;
- (iii) whether they believe there is sufficient research capacity in these contexts or agencies; and how, if at all, it might be possible to determine that capacity.

The Section headings for this chapter are as follows:

1. National Perspectives (DfEE, ESRC Training Board, leading educational researchers)
2. Perspectives on School-based Research
3. Perspectives on FE-based Research
4. Other Possible Sources of Research Capacity
5. Distinctive Target Areas (early childhood, special educational needs, ethnic minorities, higher education)

6. Research into teaching and learning in Scotland

2.2 Diverse Perspectives on Capacity for Research into Teaching and Learning

2.2.1 National Perspectives

In order to ensure that we understood mainstream national thinking about capacity for research into teaching and learning, we interviewed a number of people who could offer key national perspectives. These included a respondent from the DfEE, a representative from the ESRC's Research Training Board, and four prominent educational researchers.

2.2.1.1 Department for Education and Employment (DfEE)

Our respondent at the DfEE thought there were three senses in which insufficient research was being conducted into teaching and learning. These were:

- (i) insufficient research addressing particular issues in teaching and learning; for example, there was plenty of research on Information and Communications Technology (ICT) but very little on the teaching and learning processes. What counted as effective classroom practice in different subject areas?
- (ii) insufficient large scale quantitative research which can be generalised across contexts and which measures effectiveness in teaching and learning;
- (iii) inadequate dissemination of research into teaching and learning. Obscurity of the language of the reports, publication in obscure journals that teachers do not read, and lack of funding for follow-up schemes to help translate research findings into implications for teaching and learning were some of the main issues constraining effective dissemination.

Examples of current gaps in research included:

- (i) the nature of formative feedback to learners and its effects across a range of subjects and educational contexts;
- (ii) science in the middle years of schooling;
- (iii) thinking skills;
- (iv) the effects on pupils of the amount of teaching contact time etc.; and
- (v) cost effectiveness of different kinds of education interventions.

Part of the reason why there was insufficient research of the kinds outlined was a short term, simplistic and somewhat negative past government view of research and the information needed for decision-making. What was needed was a longer term investment policy. It was not about the amount of funding; rather it was about the way the funding was used over time. Another reason given was pressure from the RAE on researchers to stick within a given time-scale of four or five years over which judgements would be made about quality. Thus bids for funding and publications had to happen within that time-scale. The RAE time-scale, University structures for assessing research and the way funding was distributed, amongst other things, tended to encourage lots of short term contracts and this meant that it was difficult to train researchers, especially contract researchers, to sustain their employment and to build up capacity in terms of either the amount or the quality, and to make a commitment to longer term programmes of research.

With respect to expertise, there was thought to be a shortage of open-minded researchers with expertise in both quantitative and qualitative research skills. In terms of infrastructure, there was insufficient job security for contract researchers, a focus of concern for some time but nonetheless unresolved.

A number of ways of building capacity were identified:

- (i) building in to the system rewards for well principled collaborative work within and between institutions;
- (ii) funding more research aimed at replication;
- (iii) encouraging more reviews of current research in particular areas;
- (iv) better organisation of programmes so that research can be cumulative, a gradual build up of more and better and better quality information;
- (v) learning the cost effectiveness of investments in research so that a proper assessment of research capacity could be made.

Academic researchers also had responsibilities towards funders. In general, they could be more aware that decisions would be made by managers and administrators whether or not the complexities of the topic being dealt with had been resolved. Partial information was better than none at all.

Suggestions for quantitative data to assess research capacity into teaching and learning included:

- (i) explore information held by the Further Education Development Agency;
- (ii) explore publications by the Post-Sixteen Education Centre at the Institute of Education, London;
- (iii) trawl the NATFHE Journals;
- (iv) talk to the TTA Consortia;
- (v) consult the independent evaluation of that Consortia;
- (vi) breakdown of research commissioned by the DfEE.

2.2.1.2 Four Leading Educational Researchers

We interviewed four leading educational researchers.

Three of these respondents thought that insufficient research of quality was being conducted into teaching and learning in this country. Two pointed to the low standard of many papers presented at learned society conferences as evidence: much educational research into teaching and learning was insufficiently well thought out or rigorously conducted. One felt that there was not enough "understanding of what good quality research could be about...". Eighty per cent of papers submitted to the British Educational Research Journal (BERJ), for example, were rejected, and only four per cent were accepted without amendment. It was therefore important that there were formal mechanisms for "monitoring, challenging and supporting" research activities. Others thought that there was a problem with the priorities for funding. One pointed to the vast expenditure on National Curriculum development, for example, in the construction of tests and associated technologies, and contrasted this with the amount of research funded into the processes and products of teaching and learning. Another noted a diminishing capacity among LEAs for commissioning educational research: the demand had been seriously reduced from ten years ago. More funding for those engaged in educational research generally would enhance capacity for research on teaching and learning in particular.

All of these experts emphasised the need for a sound formal training in research as an element in building capacity for research into teaching and learning. This was especially important in the area of education where many lecturers and contract researchers come from backgrounds in teaching or school management, for which research skills are not developed either at undergraduate level or through initial training. Most of the research training provided in education was through part-time postgraduate courses - Masters, PhDs and EdDs. Both the content and structuring of research training through such part-time courses posed difficult problems, partly because many of

the students would not go on to do research themselves but would be more likely to be involved in using, commissioning or managing research.

There seemed too to be some dissatisfaction with the characteristics of many of those recruited as educational researchers: many able young teachers seemed unmotivated to move from a teaching career into research posts, partly because of the low pay and insecurity associated with these posts. Attracting educational contract researchers with research qualifications had never been easy. Applications from post-doctoral students for research posts were rare and appointments were usually made on the basis of Masters degrees. Although ideally one would want to recruit post doctoral students who could “hit the ground running” and concentrate solely on the job at hand, a second best was for those appointed with Masters degrees to undertake PhD studies in areas relevant to their contracted projects. Their PhDs completed, they might then move on to more permanent lecturing posts in universities, so enhancing the overall research capacity of the system. However, even this was a somewhat idealised scenario, and it could involve real difficulties both in terms of tensions between research training and completing contracts on time and also in terms of continuity of research staffing.

There were mixed views about the impact of the Research Assessment Exercise (RAE) on capacity for research into teaching and learning. Two respondents thought that it had increased the attention given to research by university education departments and so had probably expanded the quantity of research into teaching and learning and, less certainly, enhanced its quality. Doing well in the RAE had become important for departments, and individuals' contributions were correspondingly important for their promotion prospects. However, one respondent commented on the large number of publications with no empirical base, presumably the result of pressure to publish, so that there tended to be “much valuable scholarship but little empirical research”. This respondent also drew attention to the survey of RAE submissions (Bassey and Constable, 1997) which suggested that higher rated departments tended to be more involved in research into teaching and learning. The implication might be that less research of this kind was done by departments with less expertise, or perhaps by those with less resources.

One major constraint on the development of useful programmes of research into teaching and learning was said to be the naive belief of many funders of research that, once a research topic had been ‘covered’, funding for further research on the same topic was unnecessary. Such beliefs were thought to show a fundamental misunderstanding of how valid knowledge had to be built up gradually over time by the replication of research, repeating it in different contexts, or controlling for different sets of variables. An important use of research in the policy context should be to sensitise policy-makers to the complexities of the realities with which they have to deal, for example by enabling them to understand the complexity of teachers' judgements and actions in classrooms, so that they can plan more intelligently and effectively for the implementation of their policies. Research into teaching and learning tended to be naively regarded by many users and funders (and even by some researchers) as something which was expected to provide quick solutions to problems.

In the conduct of teaching and learning research, one factor constraining the expansion of capacity was mentioned by two respondents. They raised the question of the difficulty for researchers of gaining access to teaching and learning sites. Three main problems were identified:

- (i) too many researchers, given access to primary and secondary schools, had asked irrelevant questions;
- (ii) too many researchers had taken their data from the schools and had never been heard of again; thus many teachers did not know how their contributions had been used;
- (iii) schools were accountable for so many things that time to talk with researchers was minimal.

This was not the case in every teaching and learning context. Some schools had little experience of researchers or had found the researchers and the research helpful. Some sectors were still relatively researcher-free, for example pre-school, special educational needs (SEN) schools, and FE. SEN teachers in particular had welcomed researchers because they wanted their voices to be heard.

Research planned collaboratively between researchers and those engaged in teaching and learning, and also between disciplines, was valued. Arrangements for collaboration needed however to be undertaken with more awareness of the complexities involved and the time to collaborate fruitfully had to be built into any project. One endemic problem was that of reaching a satisfactory balance between fostering the appropriate working relationships at the same time as developing a useful critique of respective contributions. This balance was especially difficult to achieve in collaborating with teachers in schools. Another issue was that, in such collaborations, teachers were often expected to do work over and above their normal duties, and this could lead to a need to give recognition for effort and so to neglect quality.

A substantial amount of collaborative research was being done in connection with the 'teachers as researchers' and 'researching schools' movements, but few teachers seemed to have realised just how context specific teachers' own acquisition of expertise is. Thus there could be problems when there were expectations that what was learned by a teacher in one context was generalisable to others.

2.2.1.3 ESRC Training Board

Our respondent was committed to the role of the ESRC in enhancing research capacity for teaching and learning research by universities and colleges through the recognition of research training and the award of research studentships. This interviewee had come to the view that ESRC research studentships were unlikely to attract young, ambitious and experienced teachers to research. It was suggested that they would be more interested in researching teaching and learning issues if some way could be found to make it more financially attractive. High flyers with families, and in line for promotion to senior posts in schools, might already be earning around £28K at the age of thirty, so were unlikely to want to give that up for studentship stipend for three years.

This respondent thought that there might be several ways in which the ESRC Training Board could boost capacity for research into teaching and learning. The first might be by funding mixed mode studentships whereby education students could opt for one full-time year of research training, returning to their posts to complete their research on a part-time basis. The second might be by introducing a form of 're-entry fellowship' for people who were in some respects well qualified to be educational researchers (e.g. having a good social science background, or being successful schoolteachers with Masters degrees in Education) and who wished to do research in educational settings. Such fellowships would enable teachers to train as researchers, and researchers from other disciplines to acquaint themselves with educational contexts and cultures, without a severe drop in income. A third possibility was an allocation of research studentships, tied to and paid for by the ESRC Teaching and Learning Programme.

2.2.2 Perspectives on School-based Research

Over the past five years or so, attention in education has focused on 'teachers as researchers', 'researching schools' and 'research-informed' and 'evidence-based' teaching and learning. It is in this context that a Teacher Training Agency (TTA) representative, two Local Education Authorities' (LEAs) Chief Education Officers, the headteacher of one 'researching school', and a leading researcher committed to supporting teacher research responded in interviews.

2.2.2.1 Teacher Training Agency (TTA)

The TTA is committed to the idea of teaching as a research- and evidence-based profession and has provided funding to support these ideas. Our respondent was involved in the development of TTA policies and practices with respect to teachers' engagement in, and use of, research into teaching and learning conducted. The interviewee was also active in current debates about what kinds of research should be done into teaching and learning and the implications for collaboration or partnerships between schools, LEAs and university departments. Although it was appreciated that 'teaching and learning' had been conceived very widely for this project, the lack of research focused specifically on schools and classrooms was their particular concern.

It was noted that, according to one analysis, twenty-seven per cent of educational research submitted for the RAE was categorised as 'teaching and learning' or 'pedagogically related research'. On sampling a proportion of that research, our respondent found that much of it had been conducted outside the classroom, for example focusing on the curriculum, or had involved a study of classroom transactions involving only one or two children.

In a recent survey of teachers' views about what kinds of research had been found most useful, our respondent reported that teachers said they wanted research which

"...focuses on the detail . . . the minute micro detail of transactions and relationships in classrooms...and on learning...what they want to know is how to help their pupils learn better...they are interested in quantitative gain data as well as qualitative data on the processes...they want research that provides vivid examples of teachers teaching and learners learning . . . because they are very clear that they will always have to interpret research findings for their own particular contexts..."

Our respondent thought therefore that much of the research sampled from the RAE would not be regarded by teachers as having the most helpful foci.

With regard to teachers as researchers, one of the constraints which limited research in schools and classrooms was the difficulty for teachers in doing it. Teaching itself was a difficult and demanding job. For researchers coming into schools to do research on schools, a primary difficulty was access:

"Teachers are supposed to be experts in their subjects and it is hard for them to expose themselves to research."

The capacity of teachers to use research or to conduct research was at an early stage. Our respondent saw the development, by both teachers and academics, of the necessary skills as dependent on effective partnerships. The TTA had set up four partnerships between groups of HEIs, schools and LEAs. The aims of these partnerships were to encourage and help significant numbers of teachers in these schools to use and to do research.

Motivating teachers to do research was a problem over long time-scales. Initial enthusiasms can wane and there are always small groups of sceptics. However, it was thought that good LEAs knew when to place the activities in any one school "on the back burner" until such time as energies had been revived. No one teacher or school was expected to participate all the time and responsibilities were moved around different sites and individuals.

Another TTA initiative had been to award small grants to teachers to do research. The aims were less in terms of promoting research and more to do with promoting debate and experimentation. They had served to demonstrate "that teacher research can be communicated vividly and accessibly" and that some of the research was very good and very much in demand. Many, but not all, of the teachers involved had previously acquired MAs or PhDs. Teachers doing these

projects were encouraged to think in a cumulative way by taking on bite size projects which could then be built on or expanded later by them or by other teachers.

In terms of building research capacity in schools, the TTA consortia of LEAs, HEIs and schools were expected to be helpful. For teachers producing research there was, however, a great deal of further work to be done to develop skills of analysis of data, interpretation of results and especially the writing of a clear and explicit report which others could relate to and find interesting and helpful to read.

Another TTA initiative which was thought to have the potential to build research capacity into teaching and learning was the setting up of a National Teachers Panel for research. When the Panel has been constituted, its job would be to provide a teacher perspective on matters ranging from research priorities and proposals through to DfEE, TTA and QCA policy statements.

Sources mentioned for the assessment of capacity for research into teaching and learning were:

- (i) INSET submissions to the TTA;
- (ii) Independent evaluation reports of TTA initiatives.

2.2.2.2 Local Education Authorities (LEAs)

Two Chief Education Officers (CEOs) were interviewed because of their recognised commitment to 'research-informed' and 'evidence-based' teaching and management in schools and in LEA policy making and management. Their activities in these respects had led to liaisons with university departments of Education and Psychology.

Their main concerns were to identify overall areas of weakness in teaching and learning, to relay these to schools and to identify research which would point the way to more effective teaching and learning. That would then become the focus for in-school developments and in-service provision. These CEOs had been attracted to the idea of using rigorous, disciplined and generalisable research into the effectiveness of teaching and learning practices but had since been disappointed by the apparent lack of research of this kind. As one CEO commented:

"For the past five years I have been asking educational experts about what practices have been found effective and there are very few people who can answer that question on the basis of research evidence. What they are identifying as best practice is largely subjective, is based on what researchers themselves have found interesting or different, and what research there is tends to be insufficiently rigorous...and insufficiently focused."

Both CEOs thought that the capacity for doing research of the kind they wanted in university departments was there but that there were a number of issues which had to be addressed before that capacity could be released in ways which would support research-informed teaching. These issues stemmed crucially from a perceived "disconnection" between the interests and priorities of university researchers and those of LEAs and schools in terms of:

- (i) the choice of focus for research
- (ii) ease of access to the findings for LEAs and schools
- (iii) the timescale over which research tended to be conducted

Related to focus, one CEO remarked on the amount of research carried out on processes and asked that there be a better balance between classroom processes and products. He also thought that more research into pupils' perceptions of their own learning would be useful to LEAs and schools. Both CEOs agreed that there was a need for research on processes to achieve a better understanding of the thinking which underlay teachers' decision-making but that crucially there needed to be much more research on whether or not these processes led to effective outcomes.

Related to access, they commented on how much of academic research reports were written in a language difficult for busy non-academics to grasp, and, related to timescale, they explained how LEA decisions had to be taken over very short timescales, often on matters affecting the whole school system.

Factors affecting teachers' capacity to use research were described both in terms of their experiences of research as irrelevant but also in terms of the prevailing cultures in schools:

"..[using evidence-based research] requires a quite fundamental cultural shift...schools think that research is nothing to do with them..."

The CEOs differed in their conceptions of research, however. For one, rigorous research which focused on effective outcomes of teaching and learning would ideally be based on a psychology or medical model using, for example, experimental and/or comparative research using control groups. Surveys of teachers' or pupils' views were likened to opinion polls. For the other, research included teachers reflecting on their practices and developing management information systems, a broader definition.

The implications for LEAs in building research capacity were two-fold. First, university departments would have to provide more "user friendly" research, especially research focusing on what teaching and learning strategies have been proved effective, and second, related to that, the prevailing culture in schools would have to be changed. With respect to these, their interrelationships, and perhaps also their respective views on what counts as research, the strategies adopted by the two CEOs were a little different. One sought to influence the culture through an LEA-led process of "building a more systematic reflective approach to managing teaching and learning in LEAs and schools...well supported by the climate of target setting...". This did not include pursuing "action research" or notions of "school centred research." which were thought too likely to evoke a "variety of views". Rather he sought consensus by promoting the idea of teachers and schools as being responsible for improving what they did, for example, by learning more about what was done in practice and how it was done. This CEO thought that:

"...the greatest untapped potential research capacity in the country are the fifty highly skilled educationalists in my advisory service...out there feeding in to their own knowledge and then feeding what they have learned back into other schools...fifty full-time field workers who individually will see ten times as many lessons as any researchers in an education department...that data is just lost to the system..."

The other acknowledged that selected teachers (e.g. 'advanced skills' teachers as research leaders) needed to develop research skills in selected subject areas, valued the idea of some schools taking on a research role (e.g. Beacon schools working with schools with poorer results), and stressed the need to develop partnerships and networking (e.g. through local forums for research and development) between and across LEAs, schools and Higher Education. Such arrangements could help to develop appropriate and relevant research foci, disseminate findings and to work out the implications of these findings in collaboration with teachers. In each of these LEAs, one measure that was expected to enhance teachers' research capacity, and the capacity to use research, was an LEA based Masters degree run in conjunction with a university education department.

Suggestions made for how the level of research capacity in schools and LEAs for doing or using research into teaching and learning could be determined included:

- (i) consulting a sub-group of a national standards task group set up by LEAs to identify best practice through research (or by other means). The aim was to produce a report about the role of LEAs in promoting best practice;

(ii) consulting the Education Management Information Exchange (EMIE), a service from the National Foundation for Research into Education (NFER) paid for by LEAs. It was described as a collection of data from disparate small data gathering exercises across LEAs which the NFER analysed, collated and made available to LEAs to aid decision-making.

(The NFER was subsequently contacted by the RCP research officer. She was told that the information was confidential to LEAs and only accessible by them. However, she was also told that the data base held mainly information management data, that none of the information held was directly related to teaching and learning processes and was therefore unlikely to be relevant to capacity for research into teaching and learning.)

2.2.2.3 Headteacher

This respondent was a Headteacher of a successful Sixth Form College and Community School and was committed to having a research oriented school. The school had, for example, been involved in a university initiated science education programme, which had involved staff in “introducing the programme and researching it”. A resident researcher had been appointed on a full-time basis and twelve of the staff had completed MEds over the last two years. The whole school had been organised to enable and encourage staff to do research into teaching and learning.

The HT believed that research findings produced by the school were a powerful agent for change in teaching practices. The science education programme adopted by the school had been particularly effective

“because they (the university) had adopted a rigorous experimental design with both control groups and experimental groups and the outcomes were self evident...it was very difficult for teachers to say ‘I’m not interested in this’ because they could see it made a real difference [to the students’ learning]...”

Asked whether teachers had sufficient expertise to do good research into teaching and learning, a number of constraints were identified:

- (i) the vast majority of teachers did not acquire research skills as part of their initial training; much more time in training was now devoted to school-based work;
- (ii) time to learn on the job was very limited;
- (iii) professional isolation from other teachers and their research limited learning;
- (iv) where teachers were part of what they were researching, it was difficult for them to maintain objectivity.

Several measures were being taken at the school to address these issues and develop capacity for quality research. One was to encourage teachers to do Master’s degrees with research components. Another was to ensure that teachers were well supported by experts in university departments. However, the Headteacher wanted the acquisition of research skills built into the infrastructure:

“I am more interested in the idea of building capacity to research into our own professional knowledge base . . . we are not just knowledge transmitters...we are knowledge producers as well...like the medical profession.”

Our respondent pointed to the careless and potentially confusing use of the word ‘research’ at every level of debate about school based research. In his school, they distinguished clearly between ‘enquiry’ as the conscious pursuit of expanding knowledge in a way that might not measure up to academic criteria for validity, and ‘research’ where methodologies and methods are critiqued and questions of ethics, data gathering etc. are critically examined.

In the work of enhancing the capacity for research in the school, certain issues of infrastructure arose:

- (i) schools were organised for keeping track of pupils and their achievements and not for keeping track of research;
- (ii) schools were organised for communication within subject areas and not for teachers' cross-school communication;
- (iii) promotion of teachers tends to be associated with participation in additional activities. Those teachers who did not want promotion or who had not been promoted by their early thirties were not so motivated to participate actively in generating knowledge and understandings about teaching and learning.

The position of teachers in the school was thought to have a bearing on research capacity building for teaching and learning. Some had travelled through the system at a time when the culture was different. Some others when promoted to management positions tended to become less interested in classroom processes and more interested in management and administrative activities.

Facilitating infrastructures for research capacity building in schools were thought to include:

- (i) fostering a culture of continuing professional development;
- (ii) building into the school timetable time for collaborative research;
- (iii) negotiating formal and sustained links with HEIs;
- (iv) full-time employment of a professional researcher to act as a mentor, a facilitator and a coach;
- (v) accredited in-house in-service arrangements with research components;
- (vi) clear expectations about how teachers will spend non-teaching time;
- (vii) cultivating a language of research.

No suggestions were made about sources which could be used to make quantitative assessments of research capacity in schools.

2.2.2.4 An academic proponent of teacher research

We interviewed an 'academic' researcher selected partly because of their known commitment to teacher research. Our respondent valued research on classroom processes by teachers but only in so far as it came up with useful outcomes. In this person's experience, much action research and other kinds of research conducted by teachers tended to be personal and context bound. They were dismissive of the notion held by some teacher educators that teacher research should be about the "personal development of the teacher".

Our respondent saw research conducted by teachers as an opportunity for them to develop a greater understanding of what and how they were teaching and what and how children learned as a result. The greatest benefits to research capacity building in teaching and learning contexts was where people's research led to more generalised understandings and where teachers worked with more experienced researchers to determine the implications of their research, or the research of others, for classroom practices.

Suggestions for sources of quantitative information on research capacity for teaching and learning included:

- (i) lists of membership and of conference abstracts from the British Evaluation Society (because of the broad mix of backgrounds of its membership);

- (ii) lists of conference papers and survey of bulletins produced by the Cambridge Action Research Network (CARN);
- (iii) list of recipients of the prizes awarded by SCRE to teacher researchers.

2.2.3 Further Education (FE)

This section covers capacity for research into teaching and learning in Further Education (FE), including post-16 education in schools and colleges, FE institutions, vocational education and the work place. Four people were interviewed: an FE college principal; two university lecturers specialising in FE; and a representative from the Further Education Development Agency.

Teaching and learning in FE was distinguished from teaching and learning in HE. FE was characterised by its “closeness to the world of work” with its changing demands and uncertainties, and by the growing personal aspirations or expectations which led people to change their jobs and to seek qualifications, further qualifications or different qualifications. The learners were adults often with considerable experience of life and work, not all of which reinforced continued learning. Some differentiating features across teaching and learning contexts were that

“..schools are compulsory...universities are selective and Further Education is neither of these..”

The current move in FE was from a narrow focus on vocational training to a wider view, locating training within the community to be served. The over-riding commitment was to “access, success and progress for people who haven’t had a chance before..”. The main thrust was towards using a wider range of approaches to teaching appropriate to the different contexts of learning and aimed to counteract disaffection among some students. While there were plenty ideas and prescriptions for appropriate techniques, these had been promoted and implemented without recourse to research evidence and with little systematic evaluation to determine their effectiveness in practice. Furthermore, with regard to work based learning, much of the development has concentrated on learning from experience which divorced experience from college based learning.

Those in HE doing research on FE and an FE Principal agreed that most of the little research there had been into further education had been “empirical and ad hoc” and that what was needed was more research grounded in theory and more research where the relationships between teaching and learning were studied. The HE specialists also saw problems in conceptualising the issues to be researched, which they believed to be fundamental to the quality of the design and outcomes.

The amount and quality of research conducted in FE was considered insufficient although a start had been made, helped very much by the establishment of the Further Education Development Agency (FEDA) with a small capacity to fund research. The college principal in particular would value much more research focused on establishing the most effective teaching approaches or styles. Important questions for future research included: ‘What prior learning do students have?’ ‘How can college teaching and learning proceed from that base?’ ‘What flexible learning approaches would be valuable across the contexts of work, college, apprenticeship and situations where students mixed working with studying, e.g. sandwich courses?’ ‘What kinds of approaches best served these different purposes and situations?’ All the respondents agreed that what was really needed in FE was structured and penetrating research into teaching and learning.

According to the FE Principal, PhDs were valuable vehicles for gaining research expertise and experience, especially for College principals (and were a requirement for FE principals in the USA). Too often FE principals concerned themselves only with issues of accountancy and marketing and in FE a start had to be made at the top with “the elders of the tribe”. What they should do was to think and talk more about teaching and learning issues. The HE respondents thought that expertise in research gained by FE staff through HE research degrees was limited by the

nature of the academic PhD. Universities needed to take a long hard look at their degree structures to see if they could be made more flexible.

From a college perspective, FE needed more provision of flexible research training courses provided by HE experts. Most FE staff were very keen to do research and were already doing quite a lot of what was termed “kitchen table-top research” and would be highly motivated to learn and improve. One issue in researching teaching and learning in the college context was to problematise teaching and learning in a way that would interest staff in seeking greater understanding and solutions.

From an HE perspective, evidence had suggested that traditions of researching and writing up research in further education were under-developed. To enhance the capacity for research into teaching and learning, more expertise in research and writing needed to be built up over time.

Researching one’s own teaching practices was regarded as an established tradition in FE Colleges and there were pockets of people in FE who were highly motivated to do research; but fostering interest, enthusiasm and efforts to do more research depended on changes in the culture and infrastructure as well as in the attitudes and interests of individuals. Some aspects of changes to infrastructure thought necessary included the following:

- 1) changes in the FE funding mechanisms to encourage research;
- 2) changes in the career structure to encourage aspiring researchers among FE staff to stay in FE.

It was thought that the best way to develop expertise, motivation and opportunities for research into teaching and learning and to influence the culture was to do this through the development of networks. This would mean promotion of ongoing partnerships between FE and HE where the role of HE was to deliver research on FE and at the same time develop FE capacity to do their own research. This was happening currently but a major constraint was that HE was very rarely funded for performing both roles. To develop capacity, as well as to deliver research, required that both partners be funded for the extra time that would be required. Funding bodies did not seem to be aware, and had not been made aware, of the time implications of collaborative work.

Sources of quantitative data suggested which might be used to determine capacity for research into teaching and learning in further education and the work place included:

- (i) DfEE UKHE Statistics: Education and Training Statistics for the UK
- (ii) Society of Learned Societies in the Social Sciences (ALSISS)
- (iii) Qualifications and Curriculum Authority (QCA)
- (iv) Training and Enterprise Councils (TECS)
- (v) Publications produced by the Post-16 Education Centre, Institute of Education, London
- (vi) Survey of FEDA FE Research Journals
- (vii) Survey of FEDA Annual Conference papers

2.2.4 Other Potential Sources of Capacity for Research into Teaching and Learning

2.2.4.1 University Social Science Departments

Two eminent sociologists and two equally eminent psychologists, all of whom had engaged extensively in research relating to education, were interviewed.

Sociology of Education

Sociologists with backgrounds in both sociology and education thought that there was very little detailed sociological research into teaching and learning despite the large number of projects

undertaken in recent years as part of the National Curriculum initiative. In general, questions about what happened in teaching and learning contexts, how what had been learned was identified, and what had actually been learned as a result had not been adequately addressed. Conscious that research into teaching and learning tended often to be defined as school based, one respondent emphasised that what counted as research into teaching and learning should go well beyond formal schooling to include such contexts as work-based and community teaching and learning and professional continuing development.

The respondents agreed that there was insufficient capacity for teaching and learning research in university and college education departments. One of them explained that:

“many of the staff were never hired because of their research skills in the first place . . . but because of their abilities to train teachers..”

Recruiting sociologists or psychologists to the staff of education departments was a diminishing priority with the exception perhaps of those who would have responsibility for graduate programmes. So more education staff trained in social science research, or more people from social science disciplines, were urgently required to redress this situation.

A common perception was that this decline in disciplinary research in education over the past twenty years or so had led to a loss of capacity to do social science research in education departments. One of the sociology respondents saw the ESRC as the only funding body fostering disciplinary research in the social sciences. Agencies like the DfEE and the QCA were regarded as disinterested in disciplinary, academic types of research and more interested in policy and problem based research. Although small numbers of sociologists and psychologists still worked in education departments they were increasingly divorced from mainstream university sociology and psychology departments.

Our social policy respondent thought that collaboration between sociology and education departments should be considered with caution. They thought that too much sociology had come under the influence of “non-rigorous ways of thinking” and concluded that:

“...it may well be that people in education are doing what I would regard as better grounded sociology than some of the things people are doing in sociology departments....people use story telling and narrative as if they were some kind of alternative methodology....I don't buy that...”

Psychology

The psychologists interviewed also commented on the apparent lack of interest in departments of education in appointing expert discipline-based researchers in the social sciences. The emphasis instead was on appointing subject experts with substantial school experience, but little training in social science research, a factor which was thought to limit the capacity of education departments for doing good research into teaching and learning. These respondents argued strongly for enhancing research capacity in education through interdisciplinary collaboration. One of them commented:

“...I would prefer to have people who are passionate specialists and who can work together...I don't know that educational researchers need endless experience of classrooms to do a good job nor do I think they need to have endless training in psychological methods. Education lends itself very well to team approaches where you bring together those people who are really brilliant at what they do and can co-operate...”

The other psychologist summed up their perceptions as follows:

- (i) few psychologists located in university Education departments carried out rigorous research into teaching and learning;
- (ii) little psychological research carried out in Psychology departments overlapped with educational research;
- (iii) too many educational researchers have no training in social science research;
- (iv) too much educational research is conducted by people committed to a particular position or ways of doing things;
- (v) in educational research it seems culturally inappropriate to be critical.

Of all the social science disciplines, this respondent considered psychological research to be the most relevant and theoretically appropriate to investigations into teaching and learning. Our respondent was struck by how rarely the work of, for example, clinical psychologists, criminologists or cognitive scientists, found its way into educational developments or literature. Furthermore, it was thought that the culture of educational research tended to embrace sociological theories and methodologies which marginalised the impact of psychological research and reduced the possibilities for useful collaboration.

This respondent thought that there was sufficient research of the kind already being conducted in education departments. In order to get a pay-off from a greater investment into research into teaching and learning, the research would have to be good research, useful to someone for something. One kind of research of which there should be more was longitudinal studies to map out children's learning careers. These were expensive so tended to be rare.

To ensure that there was coherence and continuity, and a pay off, this respondent emphasised the importance of co-ordinating research:

"...you could have a hundred researchers asking integrated questions whereby each study interconnects with the previous one...one smaller study building on another . . . in ten years we'd have a lot better understanding of teaching and learning . . . more useful and highly generic across contexts . . . also less expensive.." (p. 3)

One important factor for building capacity was training in research, especially for rigorous, disciplined research of the kind he had in mind. Few postgraduate research students in education received this sort of training. There were plenty of psychologists with the relevant expertise to conduct such research into teaching and learning. However, features of the existing infrastructure might work against their wanting to contribute. One example provided concerned the ESRC's refereeing processes and system for categorising bids for funding. Referees for bids labelled 'Education' were educationalists, thought to be unsympathetic to rigorous psychological methods. Many psychologists working in the area of teaching and learning preferred now to seek their funding from other sources, for example, the Medical Research Council or the Wellcome Trust. The implication for the ESRC's Teaching and Learning initiative was that what counted as teaching and learning research would have to be made "scientifically clearer".

No suggestions were made for sources of quantitative data which could be used to establish capacity.

2.2.4.2 Independent Research Organisations

The director of an independent educational research organisation was interviewed, as were two researchers who had both very recently moved to their university posts from other independent research organisations.

It was reported that difficulties were frequently experienced by independent research organisations in recruiting researchers. For one respondent, this seemed to indicate that research capacity in terms of expertise and motivation was low. This was especially so because his organisation had a

well earned national reputation of cultivating career pathways and providing thorough training for its employees. Casualisation of the research workforce was believed to be one important factor contributing to this difficulty:

“that’s not a recognised way of generating high levels of commitment...within five to six months into any contract...people would either leave to take up new posts or their time, energy and focus were diverted towards finding a more secure post...The efforts made... to foster long term employment have made a considerable difference in stabilising this situation...”

From the perspective of a former employee of another independent research organisation, clients tended to want quantitative research and the emphasis of the organisation had to be on acceptance and then the efficient and effective delivery of contracts, on which it was entirely dependent for its funding. Most employees were recruited without a Doctorate and although there was encouragement to do one, no support was available and few people were able to sustain the extra effort required in the face of strict deadlines for contracted investigations and reports. There was no space for research training and most employees learned on the job. Employees would have been supportive of a ‘mixed mode’ Research Council scheme whereby the Council funds a PhD for two years full-time, followed by two or three more years part-time while in employment.

In the same organisation, although staff acquired expertise which stood them in good stead for future jobs, most were quite disadvantaged by having little or no involvement in the design of the research they were expected to carry out. As the research was policy driven and empirical in nature, there was generally no opportunity for staff to write theoretically informed papers although very motivated to do so.

Concern about casualisation of the research labour force was not however confined to those with experience of independent research organisations. Leading academic researchers managing large numbers of contracts employing researchers on short term contracts talked about the lack of incentives available to attract young, enthusiastic people with the right kind of qualifications and experience in education and research. Even with such benefits as have come from the CVCP Concordat with the research councils, those with mortgages and families were unlikely to be attracted to untenured and poorly paid research posts, especially those who were bright and ambitious and who could look forward to good careers, for example in the teaching profession.

Sources of quantitative data suggested for determining capacity for research into teaching and learning were:

- (i) DfEE and QCA
- (ii) BERA Conference Abstracts

2.2.4.3 A large retail business

An interview was conducted with a representative from a large retail company, one of a number of business people identified by the ESRC as potential informants about capacity for research into teaching and learning in business contexts. Their expertise was at Senior Management level where they were responsible for the development of training policy and its organisation and implementation. This respondent was also responsible for the recruitment of graduate staff. Teaching and learning in this context was largely concerned with general and transferable skills and not with training in technical skills (which it was assumed that managers had on entry to the firm). They were unaware of any research on the processes or products of management training and were doubtful that the company would use it if there was. As far as they were aware all the funding for research was concentrated on food and textile technologies. This respondent would have found it helpful to have research information providing insights into, advice on and models for making people into better leaders. Efforts had been made by the company to identify best practice and to draw up lists of good practices on the basis of these.

In terms of building capacity for research to inform teaching and learning practices, the company was unlikely to be interested in funding the acquisition of social science research skills in-house although staff researching their own practices might have some appeal. It was thought that staff themselves would be motivated to do that because a poor sales record was a disadvantage. Management staff also were interested in becoming involved in projects of any kind because this involvement tended to raise their profile and enhance promotion prospects.

Secondments had been provided in the past for staff to do MBAs or, more rarely, PhDs for which justification would be sought in terms of practical relevance to some aspect of the company's work. There was, however, a strongly held view in business circles that social science research was too long term. There might be more interest if the nature and timescales of PhDs were to become more flexible and the topics encouraged more relevant to work. A certain wariness of academic research was based on the assumption that academics knew very little about the real world of work. Common sense approaches were preferred.

At a time when the profits of many companies were down and serious down-sizing was widespread, there was less money around for research in what were considered marginal areas. The company was however moving slowly towards less top down approaches and in doing so it might find that there were problems for which social science research would be useful.

No suggestions were made about sources of quantitative data which could be used to assess research capacity in this context.

2.2.5 Distinctive Target Areas for Research

2.2.5.1 Early Childhood

The expert in 'early childhood' interviewed was a psychologist with a particular interest in quantitative research into early years learning before and during primary school.

This respondent thought there could be more research related to education in the early years. Those working within the range of ages 0–8 were thin on the ground, funding was less easily come by, and what research there was tended to be divorced from mainstream school research - the closer to infancy, the more divorced it was. More research was needed on learning which happened outside the school because there were clear relationships between achievement in schools and the context of family life.

Much of the psychological research into teaching and learning in the early years of schooling had focused on the individual child, usually involving experimental designs. This meant that there was additional work to be done relating findings to classroom settings:

“Most of the experimental work carried out by psychologists is just the beginning...”

However, the additional collaborative work of interpreting results and developing strategies which took account of early childhood research findings, and findings from research in other fields, and factors and insights with a bearing on classrooms, had rarely been undertaken. One constraining factor for collaboration between psychologists and educational researchers and practitioners was a preference amongst psychologists to work with other psychologists, which they found more stimulating because of their shared or similar standpoints.

For researchers in larger educational institutions, however, the problem was believed to be less pressing because groups of researchers in different disciplines had opportunities to meet and exchange ideas informally. While psychologists should continue to do the research into teaching

and learning they were best qualified to do, collaboration with teachers, educationalists and educational researchers, formal and informal, was thought crucial at the follow up stages.

With reference to sources of quantitative data on research capacity, the BERA Interest Group focusing on 'Childhood' was suggested as a contact; also the Thomas Coram Research Unit.

2.2.5.2 Special Educational Needs

Two respondents contributed their views as research specialists in special educational needs. Neither of them were impressed with the amount or the quality of special needs research into teaching and learning taking place in this country. In particular they were not impressed with the amount of research focusing on the factors which influenced effective learning for people with learning difficulties at different stages throughout childhood and adulthood.

They were agreed that, in relation to children with special educational needs and the current thrust towards 'inclusion' of these children into school classrooms, one neglected area of research was the promotion of better understandings about how teachers might organise their classroom teaching more effectively for inclusion. In general, too much attention and funding by government had been directed towards policy issues and too little towards pedagogical skills. This tendency was reinforced by universities which, it was claimed, did not seem to consider research into pedagogy a high priority for use of their own funding.

Methodologically no great differences were thought to exist between research into special needs and research into teaching and learning in general. However, one respondent thought there was less scope for large scale quantitative research in special needs due in part to the difficulties of establishing representative samples for small populations.

The same respondent was also concerned about the large numbers of leading special needs researchers with personal commitments to particular strategies for improving provision. This person's view was that there was a danger of commitment interfering with the objectivity and rigour of the research being done. This danger could be reduced if significant number of specialists worked in the same team. It was thought that critical mass was important in developing an adequate research infrastructure in special needs teaching and learning:

"the larger the established research body, the more effective.... if you are to get the best value for money, there has to be that kind of concentration...whether its from the point of view of researchers learning from more experienced researchers or keeping a research team going . . you need critical mass."

Such critical mass was also important for taking into account the multiplicity of other factors impinging on special needs research. Related to large teams of researchers working together,

"...you could have a multiplicity of specialisms or a dedicated special needs team that could do very well on its own but there are aspects of special needs which impact on things like assessment, school management, resources etc. and a special needs team could not operate in isolation from assessment and other forms of expertise..."

Our respondents were agreed that keeping a team going and exchanging expertise would happen most effectively when people were working in the same place. Important aspects of capacity to be developed and expanded included investment in databases of past and ongoing research in the relevant areas, reviews and syntheses of research data and results, and ease of access to all these.

In terms of how current capacity for research into teaching and learning and in particular, into teaching and learning in special needs, could best be assessed, it was thought to be a difficult task. The following sources were suggested by our respondents:

- (i) project funding data from the DfEE and QCA;
- (ii) abstracts of BERA conference papers;
- (iii) lists of research conducted in universities supplemented by a number of case studies of education department research projects.

2.2.5.3 Ethnic Minorities

We interviewed one respondent in the field of social policy working in a Sociology department who had a particular interest in ethnic minorities in education. Although not a researcher into teaching and learning this respondent was interested in using such research. Most research into the teaching and learning of ethnic minorities appeared to be based on the assumption that ethnic minority groups in general were underachieving. Recent statistics, however, had indicated that it was important to distinguish among different ethnic minority groups: many groups were doing much better in school and in HEIs than the national average would suggest. Our respondent wanted to see more research into teaching and learning in schools and in HE investigating why some ethnic minorities performed so well: research to establish clearly the processes by which these learning outcomes had come about could help those doing less well.

Some suggestions for quantifying capacity for research into teaching and learning for ethnic minorities included the following:

- (i) the UCCAS and PICAS database the capacity of which has been extended by the addition of qualitative studies in schools;
- (ii) the Fourth National Survey of Ethnic Minorities, ESRC Programme, University of Essex;
- (iii) ASEN, the Association of Ethnicity and Nationalism.

2.2.5.4 Higher Education

We interviewed a representative from a learned society interested in research on higher education.

Our respondent thought that there was insufficient quality research into teaching and learning in HE in this country. The world leaders were not in this country; they were in the USA where it was encouraged by better funding. Many HE researchers thought that the UK had lost a generation of educational researchers mostly because of government funding policies and tendencies to allocate funding to its own priority areas. Neglected areas included research which would increase understanding about how people learned. More questions should be asked about: a) how the brain worked and under what conditions it worked best; b) what kinds of support are needed to maximise learning; c) the interface between an understanding of cognitive development and an understanding of the learning environment; d) electronic teaching and learning using the Web.

Expertise, motivation and opportunities to do these kinds of research were all constrained by lack of money. The expertise was thought to be there and where it was not, she believed that, if the money was there, the expertise would soon follow. Marketing expertise was a kind of expertise clearly lacking among those conducting research into teaching and learning.

The RAE was seen as a problem for capacity building. HEFCE was not thought to have recognised in the RAE the distinctively 'educational' work in HE subject areas. At present everything was pushed into the category of 'Education' so subject areas interested in the pedagogy of delivering subject content lost out. This respondent believed, for example, that some universities had lost their education departments but that educational work was being done in the subject area departments, e.g. Mathematics, Science or Modern Languages.

A source of data which might be used to determine capacity for research into teaching and learning in further education and the work place included the research listing of SRHE members and their interest areas.

2.2.6 Research into Teaching and Learning in Scotland

We interviewed two leading educational researchers in Scottish universities. For them, current research into teaching and learning took place mainly in the context of Scottish Office (SO) (now Scottish Executive) funding for research. Neither of them thought that sufficient research into teaching and learning of the right kind was being undertaken. In particular both thought that the funding infrastructure was not sufficiently supportive of basic research into teaching and learning. However, it was not apparent that these concerns of Scottish educational researchers differentiated them from their English counterparts.

However, a more distinctive constraint on capacity for research into teaching and learning was that normally, in order to qualify for lectureship status in teacher education in Scotland, General Teaching Council (GTC) registration was required. Registration depended on applicants having trained as teachers and this requirement was thought to have limited the numbers of expert and experienced psychologists researching in departments of education in Scottish universities. Those lecturers with a background in psychology who fulfilled GTC requirements were much valued for the discipline they brought to their research in education.

Sources of quantitative data suggested for determining capacity for research into teaching and learning were:

- (i) Scottish Council for Research into Education
- (ii) SO reports on funded research
- (iii) Annual reports of funded research produced by Scottish universities

2.3 Conclusion

Almost irrespective of context, our respondents placed great value on a capacity for teaching and learning which demonstrated relevance, discipline, open mindedness, objectivity, topics which are concerned with understanding classroom processes and products, clarity in reporting, and wide dissemination of results to those expected to make use of them. Views on current capacity in these terms tended to vary according to the positions of the respondents and what stage had been reached in the development of teaching and learning research capacity, or the capacity to use such research, in their own particular contexts. At one end of the spectrum were those experienced researchers, secure in their knowledge and experience of research into teaching and learning. They were mainly concerned with quality not quantity. At the other end were those in the processes of developing capacity for research, less secure, less confident perhaps and certainly more concerned with quantity and with providing support and encouragement to others to become involved in research. Issues of expertise, motivation and opportunity tended to be more salient.

Whatever the issues identified, there was a substantial measure of agreement amongst respondents about the need for collaboration in resolving them. Who the collaborating parties should be, the proposed foci for collaboration, its main purposes and the needs to be met by collaboration varied. At one end of the spectrum there was the example of those social scientists engaged in experimental research on a one to one basis with their subjects. The problem for them was how to translate their findings at the final stages of their research into classroom teaching and learning activities for which collaboration with teachers seemed to be the answer. At the other extreme were teacher researchers, relatively inexperienced in research but highly knowledgeable

about their classrooms. Starting from problems in practice, their needs included translating classroom issues into researchable questions, achieving generalisability of their findings and reporting to others. In this context, sustained collaborations at all stages of the research were sought. Useful collaborations were with experienced researchers and university departments which provided research expertise, accredited research training, and extended support for teachers' research initiatives.

Reports from many respondents of the decline in the number of sociologists and psychologists in departments of education were attributed to the shift of balance in teacher training from theoretical work in university departments to more practical work in schools. This was one reason given for the concerns voiced by our leading researcher respondents about the poor quality of much of the research conducted into teaching and learning. Thus the suggestion was made that there should be more collaboration between social science disciplines and departments of education to inject much needed rigour and discipline into teaching and learning research.

But, as one respondent pointed out, all collaborations are complicated and time consuming. As we have exemplified above, collaborating partners have much to negotiate given different agendas and purposes for doing research. Another respondent commented on the preferences of psychologists to work with other psychologists and this confirms in small measure our initial assumption that interdisciplinary liaisons, especially on a regular basis, might be difficult to bring about. Very little as yet is known about how collaborations work or what the necessary conditions might be to bring about their success.

Chapter 3: Estimating Current Capacity

3.1 Introduction

In Chapter 1, some suggestions were made about how the country's current capacity for different types of research into teaching and learning might be estimated. So far as possible in the time available, these suggestions have been acted on and the outcomes of these investigations are reported here.

Although current research capacity refers to the research which could potentially be done under present circumstances, it has seemed to us that when one looks for reasonably robust indicators of current national capacity it is to indicators of the amount of research that is being done to which one must have recourse. People and organisations may indeed have the expertise, the motivation and the opportunity to engage in research into teaching and learning, and may nonetheless not do so; but it is only when they do engage in the research that we can have confidence that they have sufficient expertise, motivation and opportunity to assure us that the capacity is there. Our approach to estimating capacity has thus been of a simple holistic kind, based on indicators of the quantity of research of different kinds that is currently being done.

While believing that this is the best way to estimate capacity, we are also conscious that this approach gives one no insight into the causes of any limitations in capacity. To be useful in diagnosing such causes, more analytical approaches are necessary. Within the framework of this study, we have been able to do very little such diagnostic investigation; but we have done enough to be persuaded that there is a need for more thorough work of that kind.

This chapter is structured in terms of the four different types of research capacity discussed in Chapter 1.

3.2 Capacity for Applied Social Science Research into Teaching and Learning

3.2.1 Questionnaire Response Evidence

It was suggested in Chapter 1 that capacity for this type of research was likely to be concentrated in University social science departments. The main approach used to estimate such capacity was one of sending a very simple questionnaire to the heads of those university departments of Economics, Linguistics, Psychology, Social Anthropology and Sociology which had been awarded RAE ratings of 4, 5 or 5* in 1996. These highly-rated departments were selected both because it is no doubt in these departments that most social science research is done and also because one could be confident that applied research into teaching and learning in these departments would be of reasonable quality.

The response rate for these questionnaires, if eight responses from unidentified subjects are included, was 53 per cent. The overall number of staff said to be engaged on research into learning and teaching is considerable in some subject areas, but varies between subjects, from 1 per cent of staff for Economics to around 20 per cent for Psychology and for Linguistics. These staff tend to be concentrated in a relatively small number of departments, with three-quarters of all those mentioned being in six Psychology departments and two departments from each of Sociology, Social Anthropology and Linguistics.

Table 1: Responses from Social Science Departments

	Economics	Linguistics	Psychology	Soc. Anth.	Sociol			
Number of departments with RAE ratings of 4, 5 or 5*		32	12	30	13	24		
Number of these departments which responded		13		6	14	5	13	
Total number of staff identified as engaged in research on teaching and/or learning			4		16	61	8	17
Number of these engaged in quantitative research on the effectiveness or cost-effectiveness of teaching and/or learning			4		1	39	0	1
Number of PhD students with teaching and/or learning topics				0		36	24	2
	13							
Number of PhDs engaged in quantitative research on the effectiveness or cost-effectiveness of teaching and/or learning			0		8	16	0	2

The picture is similar for PhD students, with substantial numbers in Linguistics, Psychology and Sociology said to be engaged in research on teaching or learning. Again, there tend to be concentrations, with 62 out of the total of 75 PhD students engaged in such research being in only eight departments. (The responses relating to quantitative research on the effectiveness of teaching and learning will be discussed in a later section.)

3.2.2 Evidence from ESRC records

It was possible to compare these PhD figures with those of ESRC records for PhD students holding ESRC studentships. Students' files were examined to identify any projects which were in any way concerned with the social or cognitive processes of teaching or learning (as opposed, for example, to those concerned only with learning outcomes). On this criterion, which was no doubt narrower than those applied by the departments themselves, sixteen Psychology students awarded studentships between 1995 and 1998 were judged to be engaged on research into teaching or learning, but no Social Anthropology students and only one each in Linguistics, Sociology and Economics.

Unfortunately it was not possible at short notice to conduct a similarly comprehensive check of ESRC research grants in recent years concerned with teaching and learning, since a substantial number of files were not available. However, from those files which were available it seemed that the pattern might be similar to that for PhD students. Thus no Social Anthropology projects, only one Economics project, only one Sociology project, but several Linguistics projects and a substantial number of Psychology projects, funded since 1996, were identified as concerned with teaching or learning processes.

3.2.3 Evidence from Journal Publications

Further sources of evidence which were explored were the two journals in which psychologists and sociologists would be most likely to publish research into teaching and learning, the British Journal of Educational Psychology (BJEP) and the British Journal of Sociology of Education (BJSE). Papers published in these journals since the beginning of 1996 were examined. However, since the concern was with capacity for research into teaching and learning in this country, attention was focused only on those papers written by people based in the UK.

Of 130 papers published in the BJEP during this period, 57 were authored by people based in the UK. The great majority of these authors were based in university education or psychology departments, and were divided approximately equally between the two. (In three cases, there were authors both from psychology and education departments.) We categorised thirteen of the 57 papers as being concerned with teaching and/or learning processes, and again these came in roughly equal numbers from education and psychology departments.

Of 94 papers published during the period in the BJSE, 60 were authored by people based in the UK. The great majority of these authors were based in university education departments. We categorised ten of the sixty papers as being concerned with teaching and/or learning processes.

3.2.4 Constraints on Capacity for Social Science Research into Teaching and Learning

In a very simple attempt to explore potential constraints on capacity for applied social science research on teaching and learning, a question was included in the questionnaire sent to social science departments asking them to rate on a five-point scale of importance four possible constraints on the development of research on teaching and/or learning in their department: lack of expertise; lack of interest; lack of incentives; and difficulties involved in doing such research. Respondents were also encouraged to mention any other constraints.

Overall, there was an interesting lack of consensus about the importance of different possible constraints, even within subjects. Lack of expertise was certainly rejected as a constraint by both psychologists and social anthropologists, but was seen as a very important constraint by several (although not the majority) of the economics, sociology and linguistics respondents. Lack of interest was also firmly rejected by the majority of psychologists, but was highly rated by many sociologists and economists. Lack of incentives was overall the most highly rated constraint, with a 4 or 5 rating from about half the respondents in each of the five disciplines. Difficulties involved

was not rated highly by the majority; but a sizeable minority thought this was quite important. Among them was a psychologist who wrote:

I am extremely interested in pursuing work on learning, particularly work investigating ways to enhance learning and work investigating the underlying processes of learning. I am particularly keen to collaborate with teachers or educationalists, the latter with some expertise in experimental techniques so that some of my findings in the laboratory can be tested in the classroom.

These findings, crude though they are, do suggest that there are interesting and quite complex issues here which might merit more intensive research. They are also quite encouraging, suggesting as they do that there might be a substantial response from social scientists to measures designed to encourage and facilitate their engagement in applied research on teaching and learning, preferably in collaboration with those who combine practical knowledge of the field with some research expertise.

3.2.5 Summary of Findings on Social Science Capacity

It is very clear, first, that there are major differences among the social science disciplines in the extent of existing capacity for research into teaching and learning. While there seems to be substantial capacity in psychology and linguistics departments, there appears to be very little indeed in economics and in social anthropology. It is not self-evident that these differences in capacity reflect differences in the relevance of the disciplines to teaching and learning, for example in guiding policy and practice.

There also appear to be marked differences among university departments of the same disciplines in the capacity they offer for research into teaching and learning. Although all the sources of evidence suggests that among psychologists and linguists there is substantial capacity for, and engagement with, research into teaching and learning, all the evidence is also compatible with a conclusion that, even in these disciplines, the capacity is concentrated in a relatively small number of departments.

These differences in existing capacity among and within disciplines are matched by differences of the same scale in views about the constraints on developing capacity. Nonetheless, it is perhaps encouraging that lack of interest was far from a dominant attitude and that the strongest constraint overall is reported to be the lack of incentives for discipline-based social scientists to engage in research into teaching and learning, the factor most under the control of central bodies.

3.3 Capacity for Research for Understanding Teaching and Learning

Most research into teaching and/or learning is likely to be conducted in university departments of education; and most of it is likely to be aimed at developing understanding of teaching and learning, rather than being aimed at providing directly applicable findings about effective methods of teaching and learning.

3.3.1 Evidence from RAE analyses

It is not clear how much of the research conducted in university departments of education is concerned with teaching and learning. Bassey and Constable (1997), analysing Education submissions for the 1996 RAE, categorised only 7.1 per cent of the publications as being concerned with 'teaching/learning issues'. However, as they make clear, using a single category system they had to allocate each publication to only one category, whereas many papers could properly have been allocated to several. For example, 30 per cent of papers were allocated to 'Curriculum Issues' because they were concerned with specific areas of school curricula; but many of these papers might have been concerned with teaching and/or learning. The same point is

indeed highlighted by Kerr et al. (1998), who in their own analysis of English RAE submissions suggested that education, education policy, and education management were the three dominant themes, and that within education (which included teaching and learning), subject studies was dominant not only in the publications submitted but also in the future plans presented. We can conclude at least that generic as opposed to subject-specific research on teaching and learning attracts relatively little research attention in education departments. (Whether or not this focus on the subject-specific is to be regretted is, however, unclear.)

One aspect of Bassey and Constable's analysis is especially interesting: when they cross-tabulated their content categories with departments RAE ratings, they found some marked trends. In particular, the percentage of publications from 5 and 5* rated departments categorised as 'teaching/learning issues' was 10.4, as opposed to 4.6% for departments rated 1. Given the concern of this investigation with research capacity, including expertise to conduct high quality research, such differential results are of considerable importance.

3.3.2 Questionnaire Response Evidence

A simple survey was conducted, with questionnaires sent to all 104 institutions which entered for the 1996 Education RAE. Sixty-eight responses were received, but in five cases two responses were received from different education departments in the same institutions, and each of these pairs were combined. The overall response rate was therefore 61 per cent. The main findings are summarised in Table 2.

Table 2: Education departments' engagement in research on teaching and learning

RAE Rating	5+5*	4	3a	3b	1+2	other				
Number of departments			13	17	17	20	37			
Number responding		5	10	13	12	14	9			
Average number of research active staff per department		81	30	24	18	16	21			
Percentage of research active staff engaged in research on teaching and/or learning		70	76	75	82	86	60			
Percentage of staff engaged in research into teaching or learning asking effectiveness questions quantitatively					38	31	26	28	4	18
Percentage of staff engaged in research on teaching and learning drawing on social science ideas		75	92	74	73	34	28			
Number of PhD students per department engaged in research on teaching and/or learning		107	37	17	15	5	11			
Percentage of these PhD students engaged in quantitative research on the effectiveness of teaching and/or learning		34	28	22	20	14	20			

Percentage of these PhD students engaged in research on teaching and learning drawing on social science ideas	72	87	72	78	96	65
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Percentage of these PhD students judged likely to continue with research after completing PhD	65	40	28	28	13	40
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Percentage of departments with formally constituted partnerships with schools for facilitating research on teaching and/or learning	80	90	62	67	43	56
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The first thing to be noted from Table 2 is the high proportion of staff who are seen to be engaged in research into teaching and learning. This proportion is lower for the higher rated departments (in contrast to the Bassey and Constable (1977) finding), but even for the 5 and 5* departments it is 70 per cent. If these figures are to be believed, then the suggestion that educational researchers are spending too little of their energies investigating teaching and learning is quite erroneous.

The questionnaire responses also suggest that education department staff and research students predominantly draw, in their research on teaching and learning, on social science ideas. This seems to be generally the case, except for staff in the weakest of research departments. This tells us nothing, of course, about the quality of the use of such ideas. It is nonetheless encouraging that such a large proportion of educational researchers should be eager to use, and to be seen to be using, ideas from the social sciences. It augurs well for their responsiveness to possibilities of collaborating with staff from 'mainstream' social science departments.

Most of the other results summarised in Table 2 are considered in the following sections. One of the most interesting of findings, however, can best be considered here. This concerns the estimates given by the education departments of the number of PhD students who will continue to do research after completing their PhDs. As Table 2 shows, there is much greater confidence about such continuation in higher rated departments than in others. The questionnaire data in fact differentiated between part-time and full-time students, and while there is somewhat greater confidence, especially in weaker departments, about full-time researchers continuing, the trend is similar for both part-time and full-time. One may tentatively conclude that in the stronger departments the PhD tends to be seen as a preparation for a professional future which will at least include research activity, but that this is not the case in the weaker departments.

3.3.3 Evidence from ESRC Records

Some qualified support for the suggestion that most university education department staff are engaged in research into teaching and/or learning comes from examination of ESRC Research Grants files, which suggest that almost half the grants given to education department staff in recent years have been concerned with teaching and/or learning processes. Such a proportion is consistent with the suggestion that, at the highest level of expertise, educational researchers are concerned with much else as well as teaching and learning, but that teaching and learning is nonetheless given central importance at this as at other levels.

ESRC Training Board figures provide similarly qualified support for this dominant position of teaching and learning, in this case in the research done by PhD students. Of the 158 Education students awarded studentships between 1995 and 1998, we categorised 60 as being concerned with teaching and learning processes. The reports from the departments themselves indicate that there are currently 1484 PhD students investigating aspects of teaching and learning in these

departments, suggesting a total of some two and a half thousand such students nationally. The majority of these students are working in departments rated 4, 5 or 5* in the 1996 RAE.

3.3.4 Evidence from Journal Publications

It has already been reported that members of university education departments were among the main contributors to the *British Journal of Educational Psychology* and the dominant contributors to *British Journal of the Sociology of Education*; and that some twenty per cent of the papers published in these journals in recent years have been concerned with teaching and/or learning processes.

A similar analyses was carried out of papers published since 1996 in the *British Educational Research Journal*, the journal of the British Educational Research Association and arguably the main British journal for the publication of empirical educational research. Of the 120 papers published in the journal over this period, 113 were by authors based in UK institutions. The great majority of these authors were based in university education departments. Of the 113 papers, we categorised 32 as being concerned with teaching and learning processes.

3.3.5 Educational Contract Researchers: the BERA survey

To varying degrees, university lecturers in education departments have the expertise, the motivation and the opportunity to be researchers, and perhaps to be researchers into teaching and learning. Certainly, a very large amount of money from the national funding councils is allocated to universities to support research by education lecturers. But this money is concentrated on those departments rated 5 or 5*; each university determines for itself how that money will be used; and within education departments, the extent to which it is used to subsidise teaching, as Hargreaves (1996) suggested, is unknown. Certainly, under present conditions, most education departments struggle to balance their books on the basis of funding council grants and fees, most lecturers have substantial teaching loads, and there are very few staff on long-term contracts who are full-time researchers.

On the other hand, there are large numbers of people in university education departments who are employed solely as researchers. These are contract research workers, employed on more or less short term contracts to work on specific research projects, many of them on a full-time basis. Similarly, large numbers of such workers are employed by the two large national educational research organisations, the National Foundation for Educational Research and the Scottish Council for Research into Education, although the National Foundation operates on such a scale that it finds itself able to give staff long-term contracts after a probationary period. It is among these full-time educational research workers, in university departments and research organisations, that one might hope to find much of the country's capacity for research into teaching and learning. This is especially the case since, while the research grants from the national funding councils may, it is sometimes suggested, be misused by university lecturers either to subsidise their teaching or to pursue their own self-indulgent interests, the focus of contract researchers' work is directly determined by the funding bodies which award the contracts that enable them to be employed.

Between 1997 and 1999, the British Educational Research Association has been engaged in a study of contract research workers in university education departments, the results of which will shortly be published. While the BERA survey was concerned with the nature of the contract researcher population and their conditions of work, not with the focus of their research, it does provide us with a basis for judging how effectively this potentially major source of educational research capacity is currently being managed to foster that capacity. It is possible to provide only a very selective summary of the survey findings here.

One hundred and eight educational contract researchers responded to the BERA survey. They were employed predominantly in the highly rated research departments. Two-thirds of them were female and they were widely distributed in age between twenty-five and fifty-five, with 25-29 as the modal age. Four-fifths held a Bachelors degree, a quarter a PGCE, half a Masters degree and a third a Doctorate. In all, 84 per cent had had teaching experience, in a wide variety of contexts; and 75 per cent had had previous research experience, in very diverse roles. Their current contract lengths varied from two months to six years, with 42 per cent on contracts of a year or less. Funding came from 46 different sources, with just over a fifth being fully supported by their own institutions and a similar proportion by the ESRC. Forty-two per cent of respondents had held previous contract research posts elsewhere, and on average they had held three to four contracts in their present institutions, over an average of four years.

Half of the respondents had waivers of redundancy payments in their contracts, and one third waivers of unfair dismissal clauses, while many were uncertain about the contents of their contracts. Many were concerned about the lower level of support facilities for their work than for lecturers, especially lack of secretarial support and lack of access to computer technology. Induction, appraisal, career counselling and opportunities for teaching all seemed highly dependent on the individual project directors. Experiences of being included in or excluded from departmental activities also varied widely.

Did respondents see themselves as having research careers? To quote one of them, 'the insecurity, low status and marginality of contract research does not offer anything that really approximates to a career....also, one year contracts are anxiety producing: you spend lots of sleepless night worrying about being unemployed.' Most contract researchers expressed a desire for an academic career, with equal numbers preferring purely research careers and teaching and research careers. The majority had not received any career counselling, but just over half were confident that they would be able to pursue academic careers. Although almost half hoped that they would still be employed as contract researchers in five years time, only a small minority even of these thought that they would be.

In conclusion, the ways in which educational contract researchers are treated appear to be just about as diverse as the population of contract researchers itself is. While the BERA study found some examples of excellent institutional practice, the national picture is not one of the careful selection, fostering and use of this potentially very significant capacity for research in education, including research into teaching and learning.

3.3.6 Summary of Evidence on Capacity for Research to Understand Teaching and Learning

We are faced with highly contrasting estimates from different sources of current capacity for research to understand teaching and learning. From university education departments' self-estimates, several thousand staff and PhD students are engaged in such research. From analyses of the RAE, less than ten per cent of lecturers seem to be involved in such research, although the figure is slightly higher for the higher rated departments. Looking at the best of the research, both that awarded ESRC grants or studentships, and that published in high-quality journals, estimates vary from just below half the research projects down to around a quarter. There is, it seems, a very considerable amount of research into teaching and learning going on. At the same time, a much higher proportion of educational research, probably much of it subject-specific, seems to be of this kind than is reflected in the high-quality indices, thus suggesting that there is substantial scope to expand capacity if more of those who are motivated to do such research could be helped to develop their expertise.

3.4 Capacity for Research for Evidence-based Teaching and Learning

For the purposes of empirical data-gathering, we have defined research of this kind as 'quantitative research concerned with the effectiveness (or cost-effectiveness) of approaches to teaching and/or learning'. This will be too broad a definition for those who wish to insist on the irreplaceability of randomised controlled experiments, but too narrow for those who believe that qualitative research, and perhaps especially action research, can have much to offer in providing directly useful guidance for teachers and learners.

3.4.1 Evidence from ESRC Records

We have tried simply to ascertain how much research of this kind is currently being pursued. From ESRC Research Grants records, we found evidence of several such studies in Psychology, one in Education and none in Economics, Linguistics, Social Anthropology or Sociology. From ESRC Training Division records, we concluded that among PhD students awarded studentships since 1995, eight (five per cent) have set out to conduct such studies in Education, six in Psychology, one in Economics, and none in Linguistics, Social Anthropology or Sociology.

3.4.2 Questionnaire Response Evidence

University departments' spokespersons' perceptions of their practice in this respect have been summarised in Tables 1 and 2. Table 1 seems to confirm the impression that research of this kind is very rare among staff in Linguistics, Social Anthropology and Sociology departments, although several Linguistics PhD students were said to be engaged in it. It shows too that the majority of those staff and PhD students in Psychology departments engaged in research into teaching and learning are asking questions about effectiveness, and doing so in quantitative terms. This seems also to be the case for the very small number of Economics staff or students researching teaching and/or learning.

Table 2 indicates that a substantial minority of those staff and research students in Education who are researching teaching and learning are engaged in this kind of quantitative research into effectiveness. (It seems likely that here, as in other respects, respondents have interpreted the criteria rather more broadly than we ourselves have done.) A strong trend is apparent for the proportions of both staff and PhD students using this approach to research on teaching and learning to be greater in those departments rated higher, and therefore where there can be assumed to be greater research expertise.

3.4.3 Evidence from Journal Publications

In our analyses of papers since 1996 in our selected three research journals, we considered how many of those concerned with teaching and learning processes were also aimed at establishing quantitative relationships between these processes and desired outcomes.

Of the thirteen papers in the BJEP concerned with teaching and/or learning processes, eleven were quantitative studies concerned with effectiveness. Those from education departments and those from psychology departments were equally concentrated on such concerns, but there was some apparent trend (very tentatively mentioned because of the small numbers) for psychology department studies more frequently to use randomised controlled experiments and to be laboratory based.

In striking contrast to this dominant concern with effectiveness, none of the ten teaching and/or learning studies in the BJSE were of this type.

Equally strikingly, only four of the thirty-two teaching and/or learning studies found in the BERJ were quantitative studies concerned with effectiveness.

3.4.4 Summary of Evidence on Capacity for Research on 'What works'

It may well be judged that, despite a larger proportion of reported research activity being of this type than might have been expected, there appears to be a smaller capacity for research of this kind than is desirable. Even the modest levels of this type of research reported in the questionnaire responses seem, in the light of evidence both from ESRC records and from journal publications, to exaggerate the actual amount of such research. It is interesting to note that it is likely to be through links with psychology, which have been weaker during the last quarter century than previously, that education could strengthen research capacity of this kind; and indeed it appears to be largely psychologists within education departments who are responsible for such research of this kind as is going on. It is also interesting to note that this kind of research tends to be concentrated in those education departments with stronger research records.

3.5 Capacity for Researching and Learning Schools

As we explained in Chapter 1, it is in this area that we have been least successful in collecting quantitative evidence of research capacity and indeed of identifying kinds of evidence which would indicate such capacity.

One possible indicator, about which we sought evidence in the questionnaire to university education departments, is the number of university education departments which have formed formally constituted research partnerships with schools. The findings, shown in Table 2, surprised us: most departments, and especially most of the strong research departments, claimed to have formed such partnerships.

Beyond that, the finding that over a thousand part-time PhD students in the responding education departments are reported to be engaged in research into teaching and learning is of interest. Almost two-thirds of these part-time students are in departments with RAE ratings of 4 or better; and a very large proportion of them may be assumed to be working as teachers (although we have no evidence on this). It is however far from certain that much of this very considerable volume of research activity is impinging at all forcibly on the schools or other organisations where these teachers work.

Less encouragingly, our analysis of published research papers about teaching and/or learning revealed only two in which it seemed that school and university staff had worked in partnership. In one case, published in the BJEP, the two teacher-researchers had been recruited by the university researchers to work with them and had gone on to be co-authors. In the other case, published in the BERJ, there had clearly been a sustained partnership between a school staff and the two university researchers, but it was the latter who were the sole authors of the paper. There is not evidence in these journals, then, of the multiple research partnerships claimed to be in existence.

Our lack of success in establishing useful indices of research capacity in this area is certainly due in part to lack of time to explore various possible sources of evidence and perhaps to lack of imagination on our part. To a very considerable degree, however, the problem is more fundamental. There are not as yet, in our view, even such moderately well established ideas of good practice in relation to ideas of researching and learning schools as would be necessary in order to formulate good indicators of research capacity. We do not even have the theoretical understanding of what these notions might mean in practice to be able to suggest appropriate indicators. While in relation to other aspects of research into teaching and learning there is a clear need to develop research capacity, here the priority task for the next few years will remain that of exploring the nature and implications of good practice, and so of coming to understand what research capacity might mean.

3.6 Conclusion

Evidence has been sought with greater or less success in an attempt to quantify research capacity of each of the four types identified.

In relation to applied social science, two tendencies are striking: on one hand, the low overall level of social science engagement with teaching and learning, and on the other hand, the considerable variation across the disciplines. Thus at one extreme, the apparent almost total current absence of research into teaching and learning by economists seems especially disturbing, while at the other end of the spectrum, there are substantial pockets of involvement by psychologists, although not obviously much in relation to the complex teaching and learning issues with which educators have to deal. The major constraint on social scientists' involvement in research into teaching and learning is, by their own report, a lack of incentive for them to do so.

In relation to the broad field of educational research geared towards better understanding of educational research, there is clearly a great deal of it going on. There are wide, although understandable discrepancies among the several different indicators which we have been able to offer. At one extreme, most active researchers in university education departments are seen by representatives of these departments to be engaged on such research. Other indices, focused on research into teaching and learning of high quality in these departments, suggests that a quarter to a half is concerned with teaching and learning. By any of these indications, there is no lack of research into teaching and learning; but there are indications that there could be much more if the expertise were more fully developed.

In contrast, there seems to be little research focused on teaching and learning processes and asking quantitative questions about their effectiveness. Such research of this kind as there is tends to be concentrated in the highly rated educational research departments; and it also seems to be very closely associated with psychological traditions of research into teaching and learning.

Finally, we have been unsuccessful in our attempts even to formulate satisfactory quantitative indicators of schools as users of, or as active contributors to, research; nor of research partnerships between universities and schools or colleges. Here as elsewhere, university departments' reports of their own activities indicate that such partnership activity flourishes almost universally; but we have found little objective evidence to support such claims. More clearly, there are many practising teachers who are themselves engaged in educational research, much of it probably into teaching or learning, in the context of part-time higher degree study. But such diverse sources as the TTA and the ESRC Teachers as Researchers research study (Elliott et al., 2000) question severely the relevance of such work for schools. In this important area of capacity, we are still at the stage where conceptualisation is more necessary than quantification

Chapter 4: Conclusions and Recommendations

4.1 Introduction

In Chapter 1, we offered a tentative overview of the issues that needed to be addressed in relation to the country's capacity for research into teaching and learning. In particular, we identified four broad types of capacity and discussed questions of where such capacity might be found, possible ways of expanding it, and how current capacity might possibly be estimated.

In our second chapter, we reported interviews with identified experts in a wide range of teaching and learning contexts, who also occupied very diverse positions in relation to the conduct and use of research into teaching and learning. These experts offered rich insights into the needs, the problems and the possibilities for developing capacity; their testimony did not however challenge, but instead reinforced, our broad conception of the four types of capacity.

In Chapter 3 we have reported our best efforts, in the time available, to offer some quantitative evidence of the current level of the different kinds of capacity. A major question complicating such estimates of amount of capacity is of course that of the quality of the capacity. Therefore the several indicators which we have been able to provide for most types of capacity each give rather different indications of capacity according to the quality judgements built into the indicators.

Our evidence, both from the expert interviews and from the quantitative evidence, supports in our view the conclusion that there are problems in relation to each of the four types of capacity, but that these are of very different kinds. The remainder of this short concluding chapter will focus on the nature of these problems and on our recommendations for steps which might be taken within the ESRC Teaching and Learning Programme to enhance these different types of capacity.

4.2 Capacity for Applied Social Science Research into Teaching and Learning

4.2.1 Conclusions

(a) There is hardly any current capacity (according to all our indicators) in university departments of economics, sociology and social anthropology for research into teaching and learning.

(b) There is a small amount of capacity in university departments of psychology and linguistics for research into teaching and learning, but

(i) this capacity is concentrated in only a few departments;

(ii) little of the research is of an applied kind, and less in mainstream educational contexts.

(c) Social scientists believe that at present they have little incentive to conduct research into teaching or learning.

(d) University education department staff are well disposed to using social scientific ideas in their research (and indeed report that they generally do).

(e) Collaboration between educational researchers and discipline-based social scientists is recognised as being difficult; yet each group would bring expertise to such collaboration that the other demonstrably tends to lack.

4.2.2 Recommendations

Recommendation 1 Strong incentives should be offered within the ESRC Teaching and Learning Programme for collaborative research between educational researchers and disciplinary specialists in the social sciences, for the application of social scientific concepts to non-laboratory teaching and learning contexts.

Recommendation 2 Support for such research projects should be conditional on the inclusion within them of an element aimed at exploring the collaborating researchers' differing preconceptions about how their research will be useful, problems or tensions arising from these, and effective strategies for cross-disciplinary collaboration.

4.3 Capacity for Research for Understanding Teaching and Learning

4.3.1 Conclusions

(a) It is claimed by university education departments that very large numbers of staff and of PhD students in them are engaged on research into teaching and learning. In contrast, evidence from RAE analyses suggest that a smaller proportion of research-active staff are engaged in such research, and only a very small proportion (7.1%) in generic research into teaching and learning. Evidence from ESRC records and from journal publications gives various intermediate estimates, ranging from twenty per cent to fifty per cent of educational research activity. These figures do suggest therefore that a large amount of research is being conducted into teaching and learning and that, by the standards of the ESRC and of leading journals, a good deal of this research is of high quality;

(b) Nonetheless, the discrepancies among these figures suggest that a very large amount of research into teaching and learning is likely to be of poor quality, a view shared by the expert educational researchers whom we interviewed. On one hand, this is not surprising, given the backgrounds, training and working conditions of many university education department lecturers. On the other hand, there is surely a need for research into teaching and learning on this large scale, but it needs to be good.

(c) We conclude that there is no lack of lecturers in university departments of education with the necessary motivation, and with some opportunity, to conduct research into teaching and learning; and that a large reservoir of capacity can therefore become available if the research expertise of these lecturers can be enhanced.

(d) Large numbers of PhD students are currently claimed to be engaged on studies concerned with teaching and learning. A small, although still substantial, number of these are ESRC research students, who can be assumed to be receiving good broad initial training as researchers. Most such PhD students are, in university departments with high research ratings, expected to contribute to future research capacity.

(e) Another important potential source of future capacity is the large body of educational contract researchers, who demonstrably have the motivation to be researchers and who either have research expertise or are well placed to develop it. What they generally lack is a coherent career structure and, in many cases, sufficient job security to be able to plan intelligently to continue their engagement with research.

(f) There is good reason for complaint that insufficient attention has been given in this country to the critical review, synthesis and use of both the research done in Britain, and the very large international body of research, into teaching and learning.

4.3.2 Recommendations

Recommendation 3 The Programme should take deliberate steps to ensure that junior lecturers, contract researchers and PhD students have sustained opportunities over periods of at least two years to engage with the Programme's teaching and learning research projects so as to develop their expertise in research of this type. Attention should be paid to:

- (i) the composition of research teams;
- (ii) contract researchers' prior research training and the length of their contracts;
- (iii) earmarked research studentships associated with projects.

Recommendation 4 Substantial Programme resources should be allocated to thorough, critical reviews and syntheses of national and international research on teaching and learning and to consideration of the implications of these for policy and practice.

4.4 Capacity for Research for Evidence-based Teaching and Learning

4.4.1 Conclusions

(a) Even on the basis of university education departments' self-reports, the evidence is of relatively limited capacity in them for quantitative research into teaching and learning effectiveness, although that capacity tends to be concentrated in the highest rated research departments. Evidence from other sources shows the level of such capacity to be very low.

(b) Capacity for research of this kind appears to be found predominantly among researchers with backgrounds in psychology, and in universities among those working in education and psychology departments and publishing in educational psychology rather than purely educational journals.

4.4.2 Recommendations

Recommendation 5 Since the level of capacity for this kind of research is very low, the success of the Programme in enhancing capacity in this respect (and even perhaps in sponsoring high-quality research) will be dependent on it adopting a highly pro-active strategy in this area.

Recommendation 6 Such a strategy should be designed to educate, encourage and support educational researchers in the use of diverse approaches to quantitative study of teaching and learning effectiveness, recognising the genuine difficulty and complexity of useful research of this kind. It would be counter-productive for the Programme to be used to promote any single narrow orthodoxy of approach.

4.5 Capacity for Researching and Learning Schools and Colleges

4.5.1 Conclusions

(a) While there is much enthusiasm for research to be more usable and more used by schools, and also for schools to see themselves as actively engaged in research, there are very diverse understandings of what all this might mean, what responsibilities schools should accept, and why they should accept them.

(b) There seems nonetheless to be a strong consensus not only in support of schools' greater engagement with research but also about the centrality in this of research partnerships between schools and university departments. Most university education departments claim to operate such partnerships, although there seems to be little evidence of these in research publications.

(c) In Further Education, there is an equally strong move towards staff engagement with research into teaching and learning, and also towards partnership with universities to develop such research work. It is important to recognise, however, the distinctiveness of FE teaching and learning, and of its research needs and aspirations.

4.5.2 Recommendations

Recommendation 7 A major priority for the Programme should be to seek to develop research capacity of this kind. One of the most appropriate ways for it to do this will be through supporting systematic investigations of the problems and possibilities for schools and colleges in becoming research organisations, in working in sustained research partnerships with university departments, and in generating high quality research into teaching and learning.

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