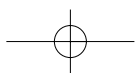
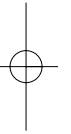
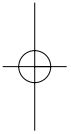


Part One

Debates about Evidence-based Practice



Chapter 1

Teaching as a Research-based Profession: Possibilities and Prospects (The Teacher Training Agency Lecture 1998)

David H Hargreaves

Introduction

Teaching is not at present a research-based profession. I have no doubt that if it were, teaching would be more effective and more satisfying. The goal of enhancing effectiveness and satisfaction can be achieved only by a combination of several means, of which an adequate research base is just one. It is in my view a singularly important one which deserves to be given priority. However, I shall argue in this lecture that providing that research base will require a radical change both in the kind of research that is done and the way in which it is organised. To make my case I look inside the profession and the research community to examine what we now do; but I shall also look at another profession to detect what lessons can be learned about creating a genuinely research-based profession.

The £50–60 million¹ we spend annually on educational research is poor value for money in terms of improving the quality of education provided in schools. In fundamental respects the teaching profession has, I believe, been inadequately served

¹ Taken from: Teacher Training Agency Annual Lecture, London, 1996.

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by us. It need not be so. If the defects in the way educational research is organised were remedied, research would play a more effective role in advancing the professional quality and standing of teachers. Left to ourselves, we educational researchers will not choose the necessary radical reforms. It needs others, including practising teachers, to give the firm push to get researchers on the move.

My lecture is in three parts – educational research in a comparative professional framework; diagnosing what went wrong; and finally, the way forward.

Part One: Educational Reserch in A Comparative Professional Framework

Rarely have teachers looked at other professional fields to examine whether they might learn from their structures and cultures. The comparison I make now is with medicine, and in particular with doctors in hospitals. The medical profession has gained in public prestige concurrently with the growth of its research. The teaching profession has not. We need to investigate why this is so and what can be done to change things.

My own research in schools and hospitals indicates that both education and medicine are profoundly people-centred professions. Neither believes that helping people is merely a matter of a simple technical application but rather a highly skilled process in which a sophisticated judgment matches a professional decision to the unique needs of each client. Yet the two professions see the role of scientific knowledge in informing professional practice in very different ways. The kind of science, and so the kind of research, involved in each profession is very different. The academic infrastructure of medicine is rooted in the natural sciences (anatomy, physiology, pharmacology etc.). No doctor denies that medical competence requires a grasp of this infrastructure². Doctors draw on this knowledge-base for the technical language of the profession.

There is no agreed knowledge-base for teachers, so they largely lack a shared technical language. It was once hoped that the so-called foundation disciplines of education – psychology, sociology, philosophy and history – would provide this knowledge-base³ and so were given great importance in the curriculum of teacher training, BEd. courses especially. Unfortunately, very few successful practising teachers themselves had this knowledge-base or thought it important for practice. It remains true that teachers are able to be effective in their work in almost total ignorance of this infrastructure. After qualification teachers largely abandon these academic influences and the use of social scientific terms within their professional discourse declines⁴: the disciplines of education are seen to consist of ‘theory’ which is strongly separated from practice. Trainee teachers soon spot the yawning gap between theory and practice and the low value of research as a guide to the solution of practical problems.

In medicine, as in the natural sciences, research has a broadly cumulative character. Research projects seek explicitly to build on earlier research – by confirming or falsifying it, by extending or refining it, by replacing it with better evidence or theory, and so on.

Much educational research is, by contrast, non-cumulative⁵, in part because few researchers seek to create a body of knowledge which is then tested, extended or replaced in some systematic way. A few small-scale investigations of an issue which are never followed up inevitably produce inconclusive and contestable findings of little practical relevance. Replications, which are more necessary in the social than the natural sciences because of the importance of contextual and cultural variations, are astonishingly rare. Moreover educational researchers, like other social scientists, are often engaged in bitter disputes among themselves about the philosophy and methodology of the social sciences. Given the huge amounts of educational research conducted over the last fifty years or more, there are few areas which have yielded a corpus of research evidence regarded as scientifically sound and as a worthwhile resource to guide professional action – and this is true in areas which might be regarded as fundamental⁶. In many educational areas a line of research ends with a change of fashion, sometimes (and often pretentiously) called a ‘paradigm shift’, not because the problems in it have been solved. Post-modernists argue that it has been an illusion to imagine that the social sciences could ever be cumulative: social science is just another mode of discourse with no legitimate claim to any special or privileged authority. To concede this is, in my view, to undermine the *raison d’être* of most of the research that is currently funded. Nor for a minute do I accept the charge that educational research is *in principle* misguided; my argument is that the profession needs educational research but that it must be a very different kind of research if it is to influence practice.

A yet more striking difference between the professions is the identity of the people who actually *do* the research. In medicine, it is possible to draw on the basic sciences which are not in themselves specifically medical – genetics, biochemistry, neuro-physiology – where developments and discoveries are potentially relevant to medical advance. In the same way, educators can draw on other basic sciences – say, cognitive science – where there is potential for educational application.

But there is a very sharp difference in the way the two professions approach *applied* research. Much medical research is not itself basic research (which is left to the basic sciences or medical scientists drawing on such work) but a type of applied research which gathers evidence about what works in what circumstances. It is a search for more accurate means of diagnosing medical problems; better ways of managing the patient; the determination of more effective treatments. The people best placed to do this work are not basic scientists or a special category of medical researchers, but medical practitioners. A considerable proportion of the articles in popular as well as specialist medical journals comes from practitioners in hospitals and general practice.

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A tiny proportion of educational research – that is, funded research, carried out by proper procedures and then made public knowledge through publication – is undertaken by practising teachers: the vast majority of such research is conducted by university-based academics involved in teacher education who do not teach in schools.

In medicine, then, there is little difference between researchers and users: all are practitioners. In education, by contrast, researchers are rarely users and so there are major problems of communication. This shows in the way research is written up and transmitted in the two professions. In medicine there are journals (*The British Medical Journal*, *The Lancet*) which aim to communicate to the whole profession on general medical issues as well as selected advances within specialties. In education the only regular journal which potentially reaches most teachers is the *Times Educational Supplement* where relatively little space is given to research. There is not a scrap of evidence that teachers complain about their lack of access to the findings of educational research. Educational researchers write mainly for one another in their countless academic journals, which are not to be found in a school staffroom.

It is this gap between researchers and practitioners which betrays the fatal flaw in educational research. For it is the researchers, not the practitioners, who determine the agenda of educational research. If practising doctors, especially those in hospitals, stopped doing research and left it almost entirely to a special breed of people called ‘medical researchers’ who were mainly university academics without patients, then medical research would go the same way as educational research – a private, esoteric activity, seen as irrelevant by most practitioners. Educational research is caught between two stools, that of the basic social sciences (psychology, sociology) and that of practitioners in schools. Educational researchers have become adept at falling off both stools, achieving neither prestige from the social scientists (e.g. mainstream psychologists) nor gratitude from classroom teachers.

How different it is for doctors! The spread of evidence-based medicine is rooting much medical research firmly in the day-to-day professional practices of doctors. In the past, a surgeon asked why he was treating a patient by means of a particular operation, or why he was using one operating technique rather than another, would often refer back to his training – ‘I do it this way because I trained under Sir Lancelot Spratt at St. Swithin’s. Today doctors are relying less heavily on the clinical practices in which they were trained and more on an evidence-based approach, in which research into the effects of treatment is used, by both trainers and trainees, as the basis and justification for treatment. In short, some of the most important research in medicine, conducted by practitioners, aims to evaluate the effects of one treatment or one technique rather than another. Is lumpectomy as effective as radical mastectomy as a treatment for breast cancer? Because evidence-based medicine, though fallible, has direct and often immediate relevance to the improvement of their practice and patient benefit, there is a huge incentive for doctors to keep up-to-date.

Far less medical practice is based on evidence than lay people commonly suppose. Medical treatment is not invariably followed by clinical improvement any more than classroom teaching is invariably followed by student learning. Indeed, when doctors concede that

a large proportion of treatments, not to say investigations and referrals, are no more than a face-saving disguise for medical impotence⁷

one is tempted to shout a deeply sympathetic ‘snap’ with an equivalent admission that much teaching, specific lessons and acts of individual attention to students, are no more than a face-saving disguise for pedagogic impotence. ‘All day and every day,’ says another leading medical expert,

we are forced to make what we hope are adequate decisions on woefully inadequate evidence. We are not altogether comfortable living in a world of uncertainty, but we have grown accustomed to it.⁸

Does not this sound more like a teacher than a doctor?

The significant difference between the professions, however, is that whereas doctors are demanding and getting more evidence-based research, teachers are not even seeing their severe lack of evidence-based research as a problem in urgent need of remedy.

To become an effective doctor, then, means learning both from one’s seniors and from research – and the two are tied because one’s seniors are researchers and are familiar with more research than the juniors. Doctors learn to respect and call upon research evidence. In hospitals in particular, doctors will introduce references to research and to scholarly journals within their routine conversations about patients and the diagnosis or treatment of their condition.

In education there is simply not enough evidence on the effects and effectiveness of what teachers do in classrooms to provide an evidence-based corpus of knowledge. The failure of educational researchers, with a few exceptions, to create a substantial body of knowledge equivalent to evidence-based medicine means that teaching is not – and never will be – a research-based profession unless there is major change in the kind of research that is done in education. Today teachers still have to discover or adopt most of their own professional practices by personal preference⁹, guided by neither the accumulated wisdom of seniors nor by practitioner-relevant research. They see no need to keep abreast of research developments and rightly regard research journals as being directed to fellow academics, not to them. Teachers rely heavily on what they learn from their own experience, private trial and error. For a teacher to cite research in a staffroom conversation about a pupil would almost certainly indicate that he or she was studying for a part-time higher degree in education or rehearsing for an OFSTED visit – and would be regarded by most colleagues as showing off¹⁰.

In hospital medicine, then, the acquisition of expertise means becoming more effective not just in terms of practical skills, but also by familiarity with

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the practice-relevant research. Promotion in hospitals is slow: one remains a junior doctor, working under the supervision of a consultant who 'owns' the patients, until one's late thirties or so. Promotion to the higher echelons of the profession is closely related to the acquisition of knowledge well beyond that required for initial registration, namely the FRCS and equivalent examinations, which are difficult and have a specified content. Consultants are outstanding practitioners and they have to prove it. A consultant in (say) surgery, and even more so a professor of surgery, would be a practising surgeon of outstanding achievement. Advances in medicine are made by leading practitioners who are for this reason deeply respected by juniors – and trusted by their patients.

In education, by stark contrast, we have de-coupled promotion from both practitioner expertise and knowledge of research. A headteacher or a professor of education, though perhaps formerly an outstanding practitioner, rarely has regular teaching duties in a school¹¹. Teachers get transformed by promotion into managers, administrators or academics and lack the deep respect junior doctors show to their seniors¹². A higher degree in education may be advantageous to a teacher's promotion, but it is not a necessary condition. A Master's degree is nowadays easily gained, is variable in content, and gives little indication of the knowledge or skills thereby acquired.

Now the purpose of this comparison has been not to suggest we slavishly imitate 'doctors – though in some ways we could with advantage be more like them – but rather to show that in other professions there is a far more productive relationship between research and professional practice and to suggest that solutions to the problems in educational research may require structural and cultural change. In education, to achieve an end result not unlike that of the medics means taking a different research route.

Part Two: Diagnosing What Went Wrong

Something has indeed gone badly wrong. Research is having little impact on the improvement of practice and teachers I talk to do not think they get value for money from the £50–60 millions we spend annually on educational research. The research community has yet to face up to the problem. It protects itself and the *status quo* by a series of defences.

Educational research used to be dominated by the linear model, which draws a direct line from basic research (say psychological research on learning) to applied research (on school children learning an aspect of the curriculum) to the dissemination of findings (which then lead to an improvement in professional practice everywhere). It was widely believed that this model would transform schools and produce professional practice that would be research-based. We now know that this model is simplistic and does not work in its classic form: indeed, most researchers say that they no longer believe in it. It was concluded that

research has an *indirect* influence on 'policy and practice'¹³, which whilst true, had the unintended side-effect of deflecting investigation into the reasons for this lack of direct impact and of persuading many researchers that it was not worth trying to achieve direct effects on practice. Rationalising failure to improve practice through research became a self-fulfilling prophecy.

In reality, researchers continue to adhere to some aspects of the linear model, for they define one of the main problems of educational research to be the *dissemination* of research findings to practitioners¹⁴. Some researchers blame themselves for not disseminating their results; others blame their sponsors for not funding dissemination; and yet others – to my astonishment – blame the teachers for ignoring the research findings and failing to act on them¹⁵. Seeing the main problem as one of dissemination assumes there is something worthwhile to be disseminated. It also assumes that the process of commissioning research and the research itself is in good shape: apparently all would be well if one could simply improve the dissemination of results.

I think these conclusions by researchers are for the most part off-target. There is no vast body of research which, if only it were disseminated and acted upon by teachers, would yield huge benefits in the quality of teaching and learning. One must ask the essential question: just how much research is there which (i) demonstrates conclusively that if teachers change their practice from x to y there will be a significant and enduring improvement in teaching and learning and (ii) has developed an effective method of convincing teachers of the benefits of, and means to, changing from x to y?

We do not have much powerful evidence about effective professional practice, which indicates that the main problem is not with dissemination but at the other end of the research process: how the research is commissioned and set in train. Almost all the money devoted to educational research is allocated on the basis of peer review, that is, researchers themselves decide which research and researchers are worth funding. Even where the body commissioning the research does not itself consist of researchers, the commissioners almost always rely to a considerable degree on peer review.

Now there is much sense in peer review. Those who, on the basis of knowledge and experience, are experts in a field are in many ways most fitted to make judgments on the quality of a research proposal. In a research field that is successful and healthy, peer review works well. But educational research is not in a healthy state; it is not having adequate influence on the improvement of practice; it is not good value for money. In these circumstances peer review serves to perpetuate a very unsatisfactory *status quo*. Researchers continue their work on their own self-validating terms; they are accountable to themselves; so there is absolutely no reason why they should change. Educational research lacks the 'pull' of industry which generates the effective application of engineering research and the 'push' of the Health Service and drug companies which ensures the application of medical research. In education the key fault is the lack of involvement of 'users', that is, practitioners and policy makers, in the peer

review or allocation system: it is their exclusion which prevents the re-direction of educational research towards the improvement of practice.

Part Three: The Way Forward

I offer two ways of introducing the necessary pressures and incentives to change educational research so that it improves the practice of teachers in schools. The first concerns how the educational research agenda is set and the process of research managed; and the second concerns research funding.

Changing the research agenda and research process means adopting as an essential prerequisite of improvement, the involvement of user communities, policy makers and practitioners, in all aspects of the research process, from the creation of strategic research plans, the selection of research priorities and the funding of projects through to the dissemination and implementation of policies and practices arising from or influenced by research findings. It means establishing the machinery for creating **a national strategy for educational research**, including the formulation of short- and long-term priorities, with some mechanism for co-ordinating the work of the various funding agencies to increase knowledge of all parties about what topics are being funded for what reasons and what the outcomes of research are.

A new partnership between researchers and practitioners must be at the heart of any reform. Success here will help to solve so many other problems. Partnerships must (and of course do) exist at the level of the individual research institution and individual research project. All this is to be applauded, as is the pressure the ESRC now puts on researchers to demonstrate consultation with, and involvement of, users as a condition of getting a research grant.

In the field of education much more is needed to change the culture and practices of users or researchers; indeed, there is a danger of researchers playing at user involvement in a rhetorical way because the rules of the 'game' of obtaining funds and doing research have only superficially changed. Practitioners and policy makers must take an active role in shaping the direction of educational research as a whole, not just in influencing projects in which they happen to be involved; and researchers need to know that users are powerful partners with whom many aspects of research need to be negotiated and to whom in a real sense the research community is in part accountable.

It would be desirable to establish a **National Educational Research Forum**, whose function would be to establish a continuing dialogue between all the stakeholders¹⁶ and to shape the agenda of educational research and its policy implications and applications. The Forum's directors would be formed from a mixture of policy makers (at national and local levels), practitioners (heads, teachers), representatives from funding bodies (research councils, charities and trusts) and relevant lay persons (governors, parents) as well as researchers

themselves. The Forum would be the arena in which all stakeholders could talk to one another in that necessarily broad and open conversation about matters of educational interest in which research 'is just *one* element in the complex mix of experience, conventional wisdom and political accommodation that enters into decision making'¹⁷.

Building on these interchanges, the Forum would, say every four to five years, conduct or commission a review of current achievements, omissions and problems in educational research, leading to a research foresight exercise¹⁸, involving researcher, user and lay communities, and the establishment thereafter of a national research strategy. Such a strategy¹⁹ would be in broad outline, based on the Forum's conclusions on the most desirable, practicable and applicable research.

The establishment of the Forum and the involvement of users would, I believe, lead to one significant change in the character of research: there would be a dramatic increase in the need for evidence-based research relating to what teachers do in classrooms. Devoting a substantial proportion of the research budget – £10–20 million? – to providing the evidence on effective practice would rapidly change the nature of educational research. Some of the money would be used to fund teachers as researcher-practitioners rather than the objects of the activities of academic researchers. This is one lesson to be learnt from the medical profession. It has to be accepted that, just as it is appropriate to 'buy out' practising teachers to be mentors in teacher training, hard cash is needed to fund teachers to buy time for research. Teacher trainers were slow to yield on the first of these; sadly they may follow rather than lead in the case of the second.

The way money is routed into educational research must be changed. Research councils, especially the ESRC, should have at least their present share, for they have a fine record of funding high quality educational research, as do the various charities. This must continue. Curiosity-driven, long-term 'basic' and 'blue skies' research is as vital in education as in any other scientific field²⁰. What would come to an end is the frankly second-rate educational research which does not make a serious contribution to fundamental theory or knowledge; which is irrelevant to practice; which is uncoordinated with any preceding or follow-up research; and which clutters up academic journals that virtually nobody reads. It would sharply curtail what Professor Michael Bassey has rightly derided as 'the dilettante tradition' in educational research²¹. From this source a substantial proportion of the research budget can be prised out of the academic community, who currently distribute it to one another as they think fit, and over several years transferred in phases to agencies committed to evidence-based research and to full partnership with teachers in the interests of improving practice.

Some of this research money should be allocated through the Teacher Training Agency. The recent development by the TTA of national standards for teacher 'experts', in subject leadership and in school leadership, as well as qualifications for headteachers, is an exciting development which would make

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the professional structures and cultures of education and medicine more closely aligned. But there is no virtue in expert teachers and newly qualified heads studying substantial bodies of educational theory and research that is mostly remote from practical application. It is evidence-based research that is particularly relevant here. Expertise *means* not just having relevant experience and knowledge but having *demonstrable* competence and clear *evidence* to justify doing things in one way rather than another. If the expertise claimed by those given the title is to be authoritative, it must be closely related to knowledge of the evidence about practice, otherwise it is no more than a plea for deference to seniority.

Caroline Cox has pointed to four grounds teachers use to justify their practices:

- **tradition** (how it has always been done);
- **prejudice** (how I like it done);
- **dogma** (this is the 'right' way to do it); and
- **ideology** (as required by the current orthodoxy).

Doctors have used similar justificatory grounds:

- **tradition** ('we continue to base our clinical decisions on increasingly out of date primary training'²²)
- **prejudice** ('most doctors have a very narrow perspective, limiting themselves to their own experience and those of a relatively few colleagues'²³)
- **dogma** ('some operations will continue to be done because they are the fashion'²⁴)
- **ideology** ('in law, if enough doctors do it, then it is right'²⁵)

– quotations taken from commentaries on the advantages of evidence-based medicine.

Both professions have the humility to acknowledge that some of their time-honoured practices prove to be worthless or even harmful; teachers must join doctors in seeking to put professional decision-making to evidential test. When educational leaders have evidence for their practices, they may even command the respect of politicians, who advocate their pet ideas in the secure knowledge that the profession lacks convincing evidence to the contrary²⁶. The TTA, as its work on expertise develops, must be able to commission evidence-based research to support and justify its endeavours.

And should not OFSTED be allocated some research funding? Without question OFSTED has the most comprehensive data-base on what teachers do and how it relates to their effectiveness. Would the profession benefit if OFSTED had a research division to analyse the evidence inspectors collect? Would the process of inspection improve if inspectors were better trained in garnering harder evidence about effective practice? Should schools and teachers defined as

good by inspectors be funded to investigate further the evidential basis for their success? After all, OFSTED believes in inspection for improvement, but school improvement is currently a largely research-free zone.

Evidence-based medicine is gaining support because the number of variables affecting the selection of the right treatment are so great that no individual doctor can expect to be a constant master of this complexity. It is much the same complexity of variables influencing student attitudes and behaviour that bewilders teachers. In education we too need evidence about what works with whom under what conditions and with what effects. The practice of evidence-based medicine,' says the journal of that tide,

is a process of life-long, problem-based learning in which caring for our patients creates the need for evidence about diagnosis, prognosis, therapy and other clinical and health-care issues. In the evidence-based medicine process we convert these information needs into answerable questions

- track down with maximum efficiency the best evidence with which to answer them ...
- critically appraise that evidence for its validity ... and usefulness ...
- apply the results of this appraisal to our clinical practice, and
- evaluate our performance²⁷.

Can any of you say that a parallel approach in teaching, compatible as it is with the notion of the teacher as reflective practitioner, would not be powerfully beneficial?

Educational researchers may not be enthusiastic about these suggestions, which are perhaps too radical for them²⁸. Most academics fear any loss of their autonomy and control over the research process; and they claim practitioner interests are short-termist. There would indeed be some loss of autonomy, and there would be a danger of short-tennism that a National Forum would need to take into account. But the end result would be far more research that is closely related to policy and practice, that is carried out by and with users, and that leads to results which are more likely to be applied in practice. There is much to gain and little to lose in moving as soon as possible to an evidence-based teaching profession. The TTA will, I hope, work with the profession and researchers to make the prospects match the exciting possibilities.

Notes

¹ Until recently it has been virtually impossible to make even a reasonable estimate of annual expenditure on educational research. There is now greater transparency in relation to the 'QR' or research money allocated to universities and the Research Assessment Exercise permits a calculation of the research income of Departments and Schools of Education in universities. QR amounts to some £27M a year and research income from other sources (research

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councils, charities, local and central government, industry and business etc.) around £20M a year. To this has to be added to the costs of educational research done in social science rather than education faculties, which includes the ESRC's research centres dedicated to educational research. There is also the cost of the research element of higher degree students in education (at least £5M a year). I estimate therefore that £50M is almost certainly an underestimate and the true figure may well be in excess of £60M. But it is important to remember how difficult these calculations are. Cf K Bick and Gregg B Jackson, 'Research and Education Reform: a study of the federal role in United States' education research and development,' in *Education Research and Reform: an international perspective*, O.E.C.D./U.S. Department of Education, 1994: 'One of the most difficult tasks we faced was trying to figure out how much is spent in this country on education research and development by all parties, how that compares with prior levels and expenditures, and how it compares with research and development expenditures in other fields.'

2 The success of the occasional impostor suggests this requirement might be exaggerated.

3 A particularly elegant and incisive overview of this and related matters is provided by Paul H Hirst, 'The theory-practice relationship in teacher training,' in M Booth, J Furlong and M Wilkm (eds.) *Partnership in Initial Teacher Training*, Cassell, 1990, pp. 74–86.

4 'One of the most notable features of teacher talk is the absence of a technical vocabulary. Unlike professional encounters between doctors, lawyers, garage mechanics and astrophysicists, when teachers talk together almost any reasonably intelligent adult can listen in and comprehend what is being said ... [This] absence of technical terms is related to another characteristic of teacher talk: its conceptual simplicity. Not only do teachers avoid elaborate words, they also seem to shun elaborate ideas ... This is the tendency to approach educational affairs intuitively rather than rationally. When called upon to justify their professional decisions, for example, my informants often declared that their classroom behaviour was based more on impulse and feeling than on reflection and thought.' (Jackson P W. *Life in classrooms*, Holt, Rinehart and Winston, 1968)

Teachers' doubts about possessing a common technical culture affects their collective status in two ways: they make them less ready to assert authority on educational matters and less able to respond to the demands of society.' (Lortie, D C *Schoolteacher* University of Chicago Press 1975)

5 Some writers seem unduly dogmatic and pessimistic in denying any cumulative character to social science, rather than acknowledging it as a greater problem in the social sciences than in the natural sciences. Take for instance the following: 'Knowledge about policy questions is not cumulative in a scientific sense, partly because the problems are intractable and also because the environment changes so that old solutions do not fit the new circumstances.' Martin Rein, *Social science and public policy*, Penguin Books, 1976, p. 23.

6 'Individual [teachers] must resolve recurrent problems largely unaided by systematic, relevant knowledge.' (Lonie, 1975)

7 William G Picketing, 'Does medical treatment mean patient benefit?' *Lancet*, 347, 1996, 379–80.

8 A G Bearn, 'The growth of scientific medicine' in G. McLachlan (ed.) *Medical Education and Medical Care*, Oxford University Press, 1977. Bearn is Professor of Medicine at Cornell.

9 Teaching has not been subjected to the sustained, empirical and practice-oriented inquiry into problems and alternatives which we find in university-based professions. It has been permitted to remain evanescent; there is no equivalent to the recording found in surgical cases, law cases and physical models of engineering and architectural achievement. Such records, coupled with commentaries and critiques of highly trained professors, allow new generations to pick up where earlier ones finished. ... [T]o an astonishing degree the beginner in teaching must start afresh, uninformed about prior solutions and alternative approaches to recurring practical problems. What student [teachers] learn about teaching, then, is intuitive and imitative rather than explicit and analytical; it is based on individual personalities rather than

pedagogical principles ... One's personal predispositions are not only relevant but, in fact, stand at the core of becoming a teacher.' (Lortie, 1975)

10 Cf. William Taylor, 'Knowledge and research' in W. Taylor (ed.) (1973) *Research Perspectives in Education*, Routledge & Kegan Paul, p. 195. The serving teacher who is widely read in the psychology and sociology of education, and who substitutes judgements from these spheres for the traditional recipe knowledge of the staffroom, may find himself regarded as an outsider, already half-way to becoming a college of education lecturer or local authority organizer.'

11 This is, of course, particularly so in the case of secondary headteachers, but in recent years it has become much more common for primary heads to have few or no teaching responsibilities.

12 A teacher today can be considered outstanding by those who are familiar with his work without being thought to have made a single contribution to knowledge of teaching in general; the ablest people in the occupation are not expected to add to the shared knowledge of the group. There is, in short, no tradition honoring the contributions to the craft ...' (Lortie, 1975)

13 The classic and highly influential statement of this position is that by Nisbet J & Broadfoot P *The impact of research on policy and practice in education*, Aberdeen University Press, 1980, which concludes that their historical and comparative review, 'demonstrates the complexity of the variables affecting impact and the degree to which impact is bound to be problematic. Some of these variables are bound up with the essential nature of educational research and with the scope and scale of the enterprise in practice, while others are concerned with the characteristics and predilections of the receiving individuals and groups ... Thus although the available literature is weak in dealing with specific instances of impact, the theoretical insights it provides should help to identify the future contribution of educational research even if the task of actually improving impact turns out to be a more intractable problem.' Many leading researchers have attempted to preserve an optimistic outlook. For example, William Taylor writes that educational research 'exerts its influence by helping to determine the agenda of problems and difficulties, and in providing some of the elements that shape individual and group orientations towards particular issues ... Although the influence of research in education on staffroom conversation and school committee decision is more tenuous and indirect ... it is none the less real and is growing. All this points to the need to be aware of simplistic assumptions regarding the actual and likely pay-offs from research. Some of these are readily traceable, but most make their way into thinking and practice less directly – through the literature on education ... [and] through courses, conferences and lectures ... The fact that ... most discussions about education, except among researchers themselves and some of the professionals in universities and colleges, contain few explicit references to research, is no real guide to its influence and certainly no basis on which to calculate its usefulness in cost/benefit terms.' (William Taylor, 'Knowledge and research' in W. Taylor (ed.) (1973) *Research Perspectives in Education*, Routledge & Kegan Paul, p. 200.) For a similar view see Maurice Kogan in Husen T & Kogan M (eds.) (1984) *Educational research & policy*, Pergamon Press, p. 48.

14 This was amply demonstrated in an unpublished survey of educational researchers conducted by Professor M Beveridge and myself and funded by the Leverhulme Trust.

15 This is even stated in print. A recent example is Thomas K Glennan, 'In search of new structures and procedures for organizing government funded education research and development,' in *Education Research and Reform: an international perspective*, O.E.C.D./U.S. Department of Education, 1994 '... increased research quality and quantity will have little impact on the quality of education policy and practice if there is little demand by the education community for the products of that research. In my view the demand is weak for three key reasons: (a) low levels of incentives for improvement of educational practice, (b) the absence of resources to improve school performance, and c) a practitioner culture that does not value research-based knowledge.'

16 Debates about evidence-based practice

16 'Each stakeholder group is entitled to state its wants and to assert them to the needs to which society should pay attention. ... tensions and conflicts are inevitable and even necessary ingredients of development ... We can look forward ... to strengthening through negotiation the shared interests of the many groups in the improvement of education.' Centre for Educational Research and Innovation, *Educational research and development trends, issues and challenges*, OECD, 1995, ch. 6.

17 T. Husen in Husen T & Kogan M (eds.) (1984) *Educational research & policy*, Pergamon Press, p. 31.

18 In developing my view on the role of research foresight in educational research I have been strongly influenced by the report *Technology foresight: a review of recent international experiences*, written by Ben R Martin (of the ESRC Centre for Science, Technology, Energy and Environment Policy in the Science Policy Research Unit, University of Sussex) for the Office of Science and Technology, Cabinet Office.

19 An outline strategic plan should be shared with all the community involved in educational research, the individual bodies of which, whether a major funder like a Research Council or Charitable Trust or a minor player like an individual researcher, would make their own decisions in the light of, but without being bound by, the national strategy. The Forum would play a major role in keeping major players informed of what other players were doing, and would in due course publish the emergent match between research activity and the guiding national strategy. Such feedback loops between a national strategy and the constant decision making by funders and researchers are essential to better communication, co-ordination and coherence in educational research. In this way the Forum would have a duty to keep the research and user communities informed as to progress within the national strategy; to keep a register of current and recent research; and to encourage and support the various forms of networking that are essential to good quality and sustained communication, co-ordination and collaboration both among researchers and between researchers and other stakeholders. In the absence of such improved co-ordination, there is little hope that there will be the cumulative development of research in the field on which successful application rests. The national strategy and its associated processes would be evaluated as part of the lead in to the next research foresight exercise.

20 Michael Bassey has usefully distinguished between educational research and psychological or sociological research in education. It is the latter which must be carefully protected by research councils and the charities.

21 Michael Bassey, *op. cit.* p. 130.

22 William Rosenberg & Anna Donald, 'Evidence based medicine: an approach to clinical problem-solving,' *British Medical Journal* 310, 29 April 1995, pp. 1122-5.

23 Quoted from David Grahame-Smith, 'Evidence based medicine: Socratic dissent,' *British Medical Journal* 310, 29 April 1995, pp. 1126-8.

24 William G Pickering, 'Does medical treatment mean patient benefit?' *Lancet*, 347, 1996, 379-80.

25 *ibid.*

26 There has been a particular problem in this regard with sociologists of education in recent years, for they have favoured writing 'critiques' of government policy, which sometimes have been little more than dressed up criticism from a different political perspective. As a result, (conservative) politicians have come to distrust sociologists even further and see any research they do as biased - perhaps no unreasonably, since the sociologists have been among the first to reject the notion of value-free research.

27 D L Sackett and R B Haynes, 'Notebook', *Evidence-based Medicine*, 1 (1), 1995, p. 5.

28 In an interesting piece under the exciting title 'Near the Chalk Face: new approaches to research for education renovation, in *Education Research and Reform: an international perspective*, O.E.C.D./U.S. Department of Education, 1994, Bob W Connell, who has a distinguished record in educational research in Australia and the USA, gives indications of

understanding just how deep the problems are in educational research, but reaches conclusions that are far too weak to provide adequate solutions because he will not challenge the research community – The statement ‘I do not wish to open the door to academic-bashing any more than to teacher bashing; there are good reasons why academic work should have a considerable degree of autonomy’ precedes the under-developed suggestions that ‘research funding structures that encourage links between particular groups of academics and particular groups of schools’ and ‘a designated part of research budgets should be invested in dissemination’ and ‘I would certainly favor opening up academic journals to the work of teachers.’