

SCHOOL EFFECTIVENESS: RETROSPECT AND PROSPECT

DAVID REYNOLDS

INTRODUCTION

To start with the retrospect, the 1990s have so far been without doubt the decade of school effectiveness and school improvement. At the level of national politics the Labour government's programme of educational reform published in the White Paper *Excellence in Education* (Department for Education and Employment, 1997) has been clearly influenced by the school effectiveness paradigm, by notions of simultaneous 'pressure and support' that come clearly from the school improvement paradigm (Fullan, 1991), and by a 'value added' perspective to information on schools that comes from the advances in data analytic techniques of the last ten years (Goldstein, 1995). The Tory Government also was clearly influenced by research findings on such aspects as the role of the headteacher in creating effective schools (Mortimore *et al.*, 1988) and the importance of class teaching or instructional factors. Enthusiasm for school effectiveness and school improvement knowledge has also been notable in the practitioner sphere, with an expansion in the numbers and activities of the Higher Education/School Improvement Networks, of which that at the Institute of Education in London is the most prominent.

School effectiveness research has done much of educational value, so we should not be surprised by this influence. What have we done to deserve this?

Specifically, firstly we have convincingly helped to destroy the belief that schools can do nothing to change the society around them, and have also helped to destroy the myth that the influence of family background is so strong on children's development that they are unable to be affected by school. Twenty years ago there was a widespread belief that 'schools make no difference' (Bernstein, 1970) which reflected the results of American research (e.g. Coleman *et al.*, 1966; Jencks *et al.*, 1971) and the disappointed hopes that followed from the perceived failure of systemic reform, enhanced expenditure and the other policies of social engineering that constituted the liberal dream of the 1960s (Reynolds and Sullivan, 1981). Additionally, twenty years ago there was an educational research paradigm in which the belief that families were the sole determinants of children's 'educability' and the associated belief that schools had minimal effects generated research which, in its basic research strategies and structure, reinforced the paradigm that had created it in the first place.

The second positive effect of school effectiveness research is that in addition to destroying assumptions of the impotence of education, and maybe also helping to reduce the prevalence of family background being given as an excuse for educational failure by teachers, we have taken as our defining variables the key factors of school and pupil outcomes, from which we 'back map' to look at the processes which appear to be related to positive outcomes. Not for us in school effectiveness the celebration of new policies because they are new or because practitioners like them, or the opposition to new policies because they potentially damage the interests of educational producers. For us, our 'touchstone criteria' to be applied to all educational matters concern whether children learn more or less because of the policy or practice.

Thirdly, we have continuously in our studies shown teachers to be important determinants of children's educational and social attainments and have therefore hopefully managed to enhance and build professional self-esteem.

Fourthly, and this is the last of our positive contributions, we have begun the creation of a 'known to be valid' knowledge base which can act as a foundation for training (see reviews in Reynolds and Cuttance, 1992; Mortimore, 1991; Rutter, 1983; Bosker and Scheerens, 1997). With knowledge of school and of teacher effectiveness, the latter of which has unfortunately to be imported from North America because of the historic antipathy towards research in this area in the United Kingdom (see Creemers, 1994), we can avoid the necessity of the endless reinvention of the 'teaching wheel' and can move teachers to an advanced level conceptually and practically.

This to me is an impressive record of achievement for a relatively small number of people. Indeed, the group of persons in the general disciplinary area that is entitled 'effectiveness and improvement' is not much larger now than it was ten years ago, leading to various pressures that researchers in the area know all too well. Effectiveness and improvement is indeed one of only a handful of areas within the British educational research community that is currently exhibiting a steep curve of intellectual and practical advance, the others over the last ten years being assessment, educational policy and certain aspects of educational psychology.

THE CRITICS AND THE CRITICISMS

Given what we have done in school effectiveness, it is rather surprising to see what now amounts to a considerable volume of criticism, much of it ill informed, about the discipline. Indeed, we have now unfortunately reached the stage when a side swipe at effectiveness is almost the stock in trade for the intellectual *lumpenproletariat* of our research community when they want to try to raise a laugh. What are the criticisms, and how justified are they?

- It is said that effectiveness research has a very restricted range of outcome measures and therefore adopts a 'conservative' definition of the outcomes of education (Hamilton, 1996; Elliott, 1996). Yet of course most school effectiveness studies measure a wide range of social and affective outcomes as well as the 'conventional' one of academic achievement, including self-esteem, behaviour, delinquency, liking for school and perception of the teachers, to name but a few taken from recent major studies (see review in Reynolds *et al*, 1996).
- It is said (Hamilton, 1996) that school effectiveness has a simple knowledge base — that we are peddling snake oil — but this is difficult to square with the contextually specific, theoretically modelled versions of informed and practically sophisticated effectiveness research that now represents the disciplinary cutting edge (see reviews in Teddlie and Reynolds, 1998).
- It is said (Elliott, 1996) that we have simplified, vulgarised and sanitised our research to make it possible to have close relationships with government but this is difficult to square with the consistent attacks on governments made by many within the discipline over the last ten years when governments exhibited policies that were not those suggested by our research (see the summary in Sammons and Reynolds, 1997).
- It is said — particularly by some in Scotland (Brown, Duffield and Riddell, 1996) — that we have neglected to give attention to the voice of the teacher and to the understandings of practitioners, which are themselves essential both if we are to understand practice and to generate school improvement. This is, I think, a more valid criticism of the effectiveness paradigm, which since it has been cast in the positivistic tradition has been more concerned to establish the research truth than it has been to understand why it is that practitioners have their beliefs, 'true' or 'false'. We will return again to this area later.

If one studies these criticisms, one is forced to conclude that much of the explanation for them is that many of them come from people who appear to have read very little school effectiveness research and to have tarred effectiveness researchers with unfair and unjustified criticism. I think it was Einstein who once said 'Great spirits often encounter violent opposition from mediocre minds' — the experience of school effectiveness research shows one does not need to be Einstein to experience this!

Two further factors other than ignorance are important to understand the criticisms and the critics. Firstly, the school effectiveness paradigm originated *not* within the educational research mainstream — indeed, mainstream educational research was virulently hostile to effectiveness insights, as anyone who remembers the reviews of Michael Rutter's *Fifteen Thousand Hours* can testify (Acton, 1980; Goldstein, 1980). Michael Rutter was a child psychiatrist. Michael Power (1967), who produced the first articles on school differences in delinquency rates in the mid-1960s, worked at a social medicine unit. Denis Gath (1997) was in child guidance when he produced his work on school variation in child guidance referral rates in Oxford schools. I worked for a Medical Research Council epidemiology unit in Wales.

Mainstream educational research adhered to another paradigm which held that 'schools made no difference' and therefore attempted to deny, disprove and debase school effectiveness because the new discipline threatened its disciplinary 'taken for granted'. From the sociologists of education with their belief in structural determination (Bowles and Gintis, 1976) to the educational psychologists and their belief in the primacy of early, family based experience (Davie *et al.*, 1972), all would and did agree that school effectiveness had got it wrong.

Secondly, the criticism of school effectiveness research reflects the critics' adherence to a very different view about what the nature of the educational research enterprise should be. School effectiveness is about — indeed, celebrates and is proud of — a 'technological' orientation to education, and is simply concerned to deliver 'more' education to more children. As such, it eschews the values debate about goals that has been seen as an important part of educational enquiry by those who have obtained status and held power within the educational research establishment of the last twenty years.

I am sure that none of us from any sub-discipline of educational research would deny the importance of this debate — indeed, it touches on the fundamental question that should inform all our work — what is it, and what should and could it be, to be educated? But it is important to realise that the continued concern about 'ends' not 'means' that has characterised much educational research, over the last twenty years has been a particularly British one, and is not paralleled in any other country that I know. In its essential Britishness, it has reflected a national culture that gives more status to the pure than the applied, to the useless more than the useful and to the educational philosopher more than the educational engineer, that dirty-handed and overall-clothed school effectiveness researcher. Robin Alexander's (1996) excellent and illuminating series of criticisms about the *Worlds Apart* (Reynolds and Farrell, 1996) review of research in international achievement comparisons unwittingly betrayed this view of us when he talked patronisingly about the 'academic community's jet setting hi-tech, intellectual sharp dressers — the Essex men and women of educational research' (p. 6), a description he believed to fit Reynolds, Creemers, Mortimore and Barber. Detailed reading of Alexander's 'critique' of school effectiveness, as of the criticisms of others, does little but confirm the view that the critics see effectiveness research as vulgar, rather grubby empiricism and simply not British. This may, of course, be a very good thing for the prospects of British children.

So much for the criticisms. I suspect that these will diminish as those within the educational research community who have opposed school effectiveness lose their influence and their platforms. Indeed, I suspect that much of the criticism of school effectiveness is by people shouting into the educational room as they are, thank goodness, retreating and retiring rapidly through the door.

It is essential, though, if school effectiveness is to fulfil the faith that is currently placed in it by governments and by others, that it considers what it has accomplished and that the paradigm moves on, intellectually and practically. This is what I will attempt to do for the rest of this paper by looking at the historical evolution of the research base, at its accomplishments and its limitations, and at the remaining key cutting edge areas where investment of time may repay itself.

In the first phase of effectiveness research from 1967 to 1989, there was the early work already referred to which came mostly from medical environments, with Power (1967, 1972) showing differences in delinquency rates between schools and Gath (1977) showing differences in child guidance referral rates.

Our own early work (Reynolds 1976; 1982) into the characteristics of the learning environments of apparently differently effective secondary schools, was followed by work by Rutter *et al.* (1979) on differences between schools measured on the outcomes of academic achievement, delinquency, attendance and levels of behavioural problems, utilising this time a cohort design that involved the matching of individual pupil data at ages eleven and sixteen.

Subsequent work in the 1980s included:

1. 'Value-added' comparisons of educational authorities on academic outcomes (Department of Education and Science, 1983, 1984; Gray, Jesson and Jones, 1984; Woodhouse and Goldstein, 1988; Gray and Jesson, 1987; Willms, 1987);
2. Comparisons of 'selective' school systems with comprehensive or 'all ability' systems (Steedman, 1980, 1983; Gray *et al.*, 1983; Reynolds *et al.*, 1987);
3. Work into the scientific properties of school effects, such as size (Gray, Jesson and Jones, 1986; Gray, 1981, 1982), the differential effectiveness of different academic sub units or departments (Fitz-Gibbon, 1985; Fitz-Gibbon, Tymms and Hazelwood, 1989; Willms and Cuttance, 1985), contextual or 'balance' effects (Willms, 1985, 1986, 1987) and the differential effectiveness of schools upon pupils of different characteristics (Nuttall *et al.*, 1989; Aitken and Longford, 1986);
4. 'One-off', small scale studies that focused upon usually one outcome and attempted to relate this to various within-school processes. This was particularly interesting in the cases of disruptive behaviour (Galloway, 1983) and disciplinary problems (McManus, 1987; McLean, 1987; Maxwell, 1987). These latter three studies — all from Scotland — show the potential contribution of qualitative, closely focussed case study research, as does the more recent material of Brown, Duffield and Riddell (1996).

Towards the end of the 1980s, two landmark studies appeared concerning school effectiveness in primary schools (Mortimore *et al.*, 1988) and in secondary schools (Smith and Tomlinson, 1989). The Mortimore study was notable for the wide range of outcomes on which schools were assessed (including mathematics, reading, writing, attendance, behaviour and attitudes to school), for the collection of a wide range of data upon school processes and, for the first time in British school effectiveness research, a focus upon classroom processes.

The Smith and Tomlinson (1989) study is notable for the large differences shown in academic effectiveness between schools, with for certain groups of pupils the variation in examination results between similar individuals in different schools

amounting to up to a quarter of the total variation. The study is also notable for the substantial variation that it reported for results in different school subjects, reflecting the influence of different school departments — out of 18 schools, the school that was positioned ‘first’ on mathematics attainment, for example, was ‘fifteenth’ in English achievement (after allowance had been made for intake quality).

From 1990 onwards work in the United Kingdom has been partially situated within the same intellectual traditions as in the 1980s, notably in the areas of:

1. Stability over time of the effects, positive or negative, of schools (Goldstein *et al.*, 1993; Gray *et al.*, 1995; Thomas, Sammons and Mortimore, 1995);
2. Consistency of the effects of schools on different outcomes — for example, in terms of different subjects or different outcome domains such as cognitive/affective (Goldstein *et al.*, 1993; Sammons, Nuttall and Cuttance, 1993, Thomas, Sammons, Mortimore and Smees, 1997);
3. Differential effects of schools for different groups of students (for example, of different ethnic or socio-economic backgrounds or with different levels of prior attainment) (Jesson and Gray, 1991; Goldstein *et al.*, 1993; Sammons, Nuttall and Cuttance, 1993);
4. The relative continuity of the effects of school sectors over time (Goldstein, 1995; Sammons *et al.*, 1995);
5. The existence or size of school effects (Daly, 1991; Gray, Jesson and Sime, 1990; Thomas and Mortimore, 1994). There are strong suggestions that the size of primary school effects may be greater than those of secondary schools (Sammons *et al.*, 1993; 1995);
6. Departmental differences in educational effectiveness (Fitz-Gibbon, 1991, 1992; Sammons *et al.*, 1997).

Additional recent areas of interest have included:

1. Work on conceptualising the nature of the school and classroom processes within ineffective schools (Reynolds, 1991; Reynolds, 1996), wherein it is argued there are on view a number of ‘pathologies’ which make it inadvisable to study these schools using only the factors that have been shown to be present within effective institutions.
2. Work on the potential ‘context specificity’ of effective schools’ characteristics internationally, as in the International School Effectiveness Research Project (ISERP), a nine nation study that involves schools in the United Kingdom, the United States, the Netherlands, Canada, Taiwan, Hong Kong, Norway, Australia and the Republic of Ireland, (Reynolds *et al.*, 1994; Reynolds *et al.*, 1996; Reynolds and Farrell, 1996).

FACTORS ASSOCIATED WITH EFFECTIVENESS

We have also by now a good idea about the factors that make schools effective and the knowledge has been codified for use (Sammons, Hillman and Mortimore, 1994; Reynolds and Cuttance, 1992).

Factors related to effectiveness seem to be:

1. *Professional Leadership*

Gray (1990) notes that the importance of the headteacher’s leadership is one of the clearest of the messages from school effectiveness research. Three characteristics have been found to be associated with successful leadership:

- (a) Strength of purpose, involving proactive management, an emphasis upon recruitment of persons who ‘fit’ the school and the generation of consistency and purpose within the school’s management team (Sammons, Hillman and Mortimore, 1994);

- (b) Sharing of leadership positions, as noted in the Mortimore *et al.* (1998) finding of the involvement of the deputy headteacher in decision making and by findings from the same study related both to the involvement of teachers in school management and curriculum planning and to consultation with teachers about spending and other policy decisions;
- (c) A headteacher's role as the 'leading professional', implying involvement in and knowledge about what goes on in the classroom, including the curriculum, teaching strategies and the monitoring of pupil progress (Mortimore *et al.*, 1988; Rutter *et al.*, 1979).

2. *Shared Vision and Goals*

Schools are clearly more effective when staff build consensus on the aims and values of the school and where they put this into practice through consistent and collaborative ways of working. This is seen in:

- (a) Unity of purpose, involving a consensus on values (Rutter *et al.*, 1979);
- (b) Consistency of practice, in which adopting a particular approach to school curriculum guidelines (Mortimore *et al.*, 1988) and to discipline (Rutter *et al.*, 1979; Reynolds, 1976) has a positive impact on the progress of pupils;
- (c) Collaboration, as shown by the collegiality found in the Rutter *et al.* (1979) study and teacher involvement in decision making found in the effective schools of the Mortimore *et al.* (1988) study.

3. *A Learning Environment*

The ethos of a school is partly determined by the vision, values and goals of the staff as noted above, and also by the climate in which pupils work. Two key aspects of this latter factor are:

- (a) An orderly atmosphere (Mortimore *et al.*, 1988; Rutter *et al.*, 1979);
- (b) An attractive working environment (Rutter, 1983; Mortimore *et al.*, 1988).

4. *High Quality Teaching and Learning*

This is generated by:

- (a) Maximisation of learning time, including the proportion of the day given to academic subjects (Bennett, 1978), the proportion of time in lessons devoted to learning (Rutter *et al.*, 1979) or to interaction with pupils (Mortimore *et al.*, 1988; Alexander, 1992), the proportion of time spent on work matters rather than on administrative/maintenance activities (Galton and Simon, 1982; Alexander, 1992) and the existence of well managed lesson transitions;
- (b) An academic emphasis, as noted by Smith and Tomlinson (1989) in relation to entry of a high proportion of pupils in public examinations, and by Rutter *et al.* (1979) in relation to senior staff checking that homework had been done;
- (c) Curriculum coverage, in which more effective schools give pupils higher OTL (opportunity to learn). Bennett (1992) has demonstrated wide variation in curriculum coverage both for pupils within the same class and in different schools. Tizard *et al.*'s (1988) work in infant schools pointed out that 'it is clear that attainment and progress depend crucially on whether children are given particular learning experiences' (p. 172).

5. *High Expectations*

Crucial factors seem to be that high expectations are implicated in generating a more active role for teachers in helping pupils (Sammons, Hillman and Mortimore, 1994), the communication and reinforcement of expectations as

noted in Mortimore *et al.* (1988) and the provision of intellectual challenge, as noted in the Tizard *et al.* (1988) study, where teachers' expectations of both individual pupils and classes as a whole had a strong influence on the content of lessons, and to a large extent explained differences in curriculum between classes with similar intakes.

6. *Positive Reinforcement*

This involves clear and fair discipline (Reynolds and Murgatroyd, 1977; Clegg and Megson, 1968; Rutter *et al.*, 1979; Heal, 1978; Mortimore *et al.*, 1988) and direct and positive feedback such as praise and appreciation (Rutter *et al.*, 1979).

7. *Monitoring Pupil Progress*

Well established mechanisms for monitoring the performance and progress of pupils, classes, the school as whole and the efficacy of improvement programmes are important features of effective schools. These are detailed as:

- (a) Monitoring pupil performance/achievement, as in the sound record keeping noted within the Mortimore *et al.* (1988) study;
- (b) Evaluating school performance, as in the Hargreaves and Hopkins (1991) model of cyclical school improvement.

8. *Pupil Rights and Responsibilities*

These can affect the self-esteem of pupils positively, as in the good staff/pupil relations found in the Rutter *et al.* (1979) effective schools, and as found in schools where there existed shared out-of-school activities between teachers and pupils (Rutter *et al.*, 1979; Smith and Tomlinson, 1989).

Also important may be the positive effects of having high proportions of pupils with positions of responsibility within the school, thus conveying trust in pupils and setting standards of mature behaviour (Ainsworth and Batten, 1974; Reynolds, 1976; Rutter *et al.*, 1979).

9. *Purposeful Teaching*

This is likely to be related both to efficient organisation as in the Rutter *et al.* (1979) study, which found positive effects of preparing the lesson in advance, and to structured lessons, as in the Mortimore *et al.* (1988) findings of a positive effect of efficient organisation of classroom work, a limited focus in sessions and a well defined framework within which a degree of pupil independence and responsibility for managing their own work could be encouraged.

THE KNOWLEDGE BASE REVIEWED

This, then, is our British knowledge base. Overall it would seem to have four positive features:

1. High levels of methodological sophistication, in which the utilisation of a cohort design, matched data on individuals at intake and outcome and multiple level methodologies are now widely agreed as axiomatic. Britain has also been in the forefront of the development of multilevel statistical modelling (Goldstein, 1995);
2. The use of multiple measures of pupil outcomes, which have included in British work those such as locus of control, attendance, delinquency, behavioural problems, attitudes to school, self-esteem and attitudes to school subjects as well as academic outcomes (see Mortimore *et al.*, 1988 and Reynolds and Sullivan, 1987, for example);
3. The use of multiple measures of pupil intakes into school, utilising prior achievement as well as factors such as age, gender, parental socio-economic

status, parental education and parental ethnicity or racial background. Cutting edge research from other countries (e.g. Teddlie and Stringfield, 1993) often utilises *either* achievement measures or detailed socio-economic data upon background, but rarely both, as in British best practice. The effect of controlling for one or other on the estimates of schools' effects has been explored in Sammons *et al.* (1994);

4. The development of advanced conceptualisations and findings about the role of the school level in potentiating or hindering adolescent development, where the early findings within the sociology of education have been usefully built on by the case studies of Reynolds, Rutter and Mortimore.

If there are any intellectual 'downsides' to the British tradition, they would seem to lie in the following areas:

1. The great majority of British studies that have collected data upon school and classroom processes have sampled only within socio-economic contexts that are disadvantaged and deprived (e.g. Rutter in a London borough with high levels of social deprivation, and Reynolds in the Welsh mining valleys).

This has resulted in an inability within the British research community to further investigate the variation in 'what works' by context that is such an exciting and potentially productive feature of the American school effectiveness research tradition (e.g. Wimpelberg *et al.*, 1989; Hallinger and Murphy, 1986; Teddlie and Stringfield, 1993).

It is also possible that the near exclusion within British sampling frames of very advantaged catchment areas, of independent schools with intakes from very affluent backgrounds, and of religiously administered schools with intakes of probably above average achievement levels might have both constrained variance in organisational practices at the school level, and might have also resulted in the generation of accounts of organisational functioning that are not necessarily applicable to all school types.

2. The absence of more than rudimentary attempts to discern those classroom or instructional processes that might be related to outcomes, reflecting the absence within a British context of the focus upon classroom learning environments that is evident within the American research traditions of learning environment research (Good, 1983) and within the Dutch tradition of learning and instruction (Creemers, 1994).
3. The historic lack of any 'interface' between school effectiveness research and school improvement practice, reflecting the very different intellectual ancestries of the two 'paradigms' (see Reynolds, Hopkins and Stoll, 1993; Stoll and Fink, 1996). Whilst this situation has begun to change considerably in recent years, historically there has been little of the take up of effectiveness knowledge into British improvement programmes that has been so evident in the United States (e.g. McCormack-Larkin and Kritek, 1982). Neither in the United Kingdom has there been more than partial take up of the insights from school improvement programmes into school effectiveness research designs, in spite of the evident utility of some of the improvement variables, such as 'collegiality', 'development planning' and 'school culture' to potentially explain variation in schools' outcomes.

Great Britain in fact has been notable for the direct application of school effectiveness knowledge to schools *without* much influence from the school improvement community, as in the attempt to translate the findings of the *Fifteen Thousand Hours* study (Rutter *et al.*, 1979) into some of the participating schools (Maughan *et al.*, 1990; Ouston and Maughan, 1991) and

the Reynolds, Davie and Phillips (1989) 'Change Agents' material in which effectiveness knowledge was cascaded through schools by specially trained school personnel.

4. The absence of more than rudimentary attempts at theory generation, although the reviewing of the field (e.g. Mortimore, 1991; Reynolds *et al.*, 1994) and the related causal ordering of some of the school effectiveness variables does suggest the beginnings of attempts to move beyond the simple description of relationships to more sophisticated analyses. In no way, though, do these British attempts appear as advanced as those attempted in other countries.

It must be said, in spite of these 'downsides', that there are very many encouraging signs:

- recent school improvement practice is drawing on the school effectiveness paradigm in very many productive ways (Stoll and Fink, 1996);
- the interface between school effectiveness, school improvement and educational policy-making is proving to be a productive one and there are increasing signs of convergence in the interests of British policy-making bodies, such as OFSTED and the national Department for Education and Employment, and the practice and findings of school effectiveness researchers. Both sides can only benefit from this, with policy-makers becoming more aware of the complexities of judging school effectiveness and initiating change in schools as they appreciate the insights of the effectiveness knowledge base, and with researchers appreciating the contingencies of a policy-making perspective.
- in the research community, a number of areas seem to be beginning to generate very creative work, particularly the areas of:
 - (i) The 'site' of ineffective schools, the exploration of their characteristics and the policy implications that flow from this (Barber, 1995; Reynolds, 1996);
 - (ii) The possibility of routinely assessing the 'value-added' of schools using already available data (Fitz-Gibbon and Tymms, 1996), rather than by utilisation of specially collected data;
 - (iii) The characteristics of 'improving' schools and those factors that are associated with successful change over time, especially important at the policy level since existing school effectiveness research gives only the characteristics of schools that have *become* effective (this work is being undertaken by Gray, Hopkins and Reynolds);
 - (iv) The description of the characteristics of effective Departments (Harris *et al.*, 1995);
 - (v) The application of school effectiveness techniques to sectors of education where the absence of intake and outcome measures has made research difficult, as in the interesting foray into the early years of schooling of Tymms *et al.* (1997), in which the effects of being in the Reception year prior to compulsory schooling were dramatic (an effect amounting to two Standard Deviations) and where the school effects on pupils in this year were also very large (approximately 40% of variation accounted for).

FOUR CUTTING EDGE DIRECTIONS

We clearly need to continue fleshing out these various areas noted above. However, even if we continue to work away at these disciplinary cutting edges,

one is not completely sure that this would be enough to ensure that school effectiveness maintains its rapid rate of intellectual progress. It is time for creative work at the 'cutting edge' as well as for normal science, to spur development. One way forward is to look *outside* existing British educational variation in the search for factors that can deliver the goals of high educational achievement for all (see Reynolds *et al.*, 1994). Of particular importance, firstly, is comparative study of other societies than ours since there may be little point of spending another twenty years looking at within Britain variation if the best of British practice does not approach the best of other countries. It is clear that many societies have been forced to generate highly reliable forms of schooling to develop themselves as nations. Taiwan (Reynolds and Farrell, 1996) is a case in point, where a community has been created by a particular interaction between culture, the economy and the educational system. Education there is part of national planning, is a central state responsibility, is adequately funded (indeed, funding is tied to a fixed percentage of increasing GNP), and has educational professionals who behave somewhat differently to ours. In schools, there is routine quality monitoring of the staff by principals, involving the collection of all pupils' homework books and the random selection of some for checking by the principal every term. Each child takes home at the end of each day to their parents or caretakers a book in which the child has described in detail the educational experiences and the curriculum knowledge acquired in the day, for parents to see and act on as they see fit. In lessons in the first years of elementary school, teachers routinely attempt to ensure that all children pass over the hurdle of basic skill acquisition, since the aim is to ensure that all children are educated without failure. Children who fail to complete work continue to work during lesson transitions, in lunch hour or after school, the aim being to reduce the range of intellectual variation to make it possible for teaching to be a more pleasant, stress-free job for teachers, and a more productive learning experience for children.

The second useful direction for us to take in the search for excellence beyond our existing disciplinary boundaries is to study those non-educational organisations which are not permitted to fail and to see if there are any useful lessons for schools in them. They are known in the jargon of the trade as HROs or High Reliability Organisations and are usually taken to be air traffic control, nuclear power plant operation, electricity supply operation and all the other organisations and their employees who have to generate 100% reliability (see Stringfield and Slavin, 1991). Many people in education may of course be concerned about the use of insights from business and commercial organisations outside education, arguing that education is different. I would suggest such conceit hides insecurity and that education is the same in many respects.

To take an aeronautical analogy, if one is in a holding pattern above Heathrow, it is not reassuring to note that we have the technology to land the plane but might not use it, or that only 30% of air traffic controllers are effective or that we are trying to do something by understanding the ineffective airline traffic controllers but haven't quite managed it yet! Because of the cost, both human and financial, of any failure, such failure is not tolerated. The more recent estimates of the cost of avoidable school failure within the United States (and I know these beg serious questions) estimate that cost as the equivalent of a plane crash every week, yet historically little has been done to prevent school failure by comparison with that done to prevent air traffic control failure.

The characteristics of these HROs are as follows:

- they train extensively, both pre-service and in-service, in order to eliminate operational flaws. When training, all levels of an organisation act as respondents on the effectiveness of all levels, in a process of mutual monitoring;

- the goals of the HROs are few and are explicit. The job of the airline traffic controller is to land the plane, not socially to relate to the pilot!;
- there is a body of knowledge about practice that is codified into SOPs — Standard Operating Procedures — which tell people how to behave in the event of any contingency;
- evaluation is constant, to improve the quality of decision making;
- great attention is given to minor errors, since the belief is that these could cascade into major system failure;
- simulations to identify weak links are always being run, with direct action being taken to identify any ‘trailing edge’ and to make it more effective;
- the organisations are well resourced and equipment is kept in good working order;
- the organisations show simultaneous top down/bottom up properties.

Underlying the reasons for the existence of all the organisational procedures is the belief that system failure or unreliability would generate costs that are too heavy for a society to bear. We are working currently with a number of schools in three local education authorities, to see if schools can be modeled upon HROs.

The third area for possible cutting edge advance to take place is in the field of teacher effectiveness, which has historically been neglected in the United Kingdom. In the United States, the Netherlands, Australia and in virtually all other countries where there are strong research and practice communities, the situation is completely different to that here. Indeed, one could find probably 2000+ articles on the topic of teacher effectiveness worldwide, but find only a handful here.

What factors may be responsible for this? Firstly, there is a particularly British view that teaching is an ‘art’, not a science, and that therefore it is personal factors and qualities, often idiosyncratic and difficult to judge, which are the key factors. It goes without saying that such a view — linked no doubt to those other quaint British beliefs about ‘gifted amateurs’, ‘muddling through’ and indeed to the whole problem of the two cultures and Britain’s placing of education within the humanities tradition — is not heard within other countries, probably because it is clearly wrong and probably also because it is recognised as condemning societies where it is prevalent to having only those small number of excellent teachers who inherit the ‘art’, rather than the larger number who could acquire the applied science of a teaching methodology. Secondly, there is a belief in Britain that we do not need teacher effectiveness material because teaching is such a simple ‘technology’ that it does not need elaboration.

Thirdly, we have been held back in our assessment of teachers and teaching by our unwillingness to confront the issue of inter-teacher variation. School effectiveness research when it began had to struggle against a widespread unwillingness to permit school-against-school comparisons, a situation potentiated by the frankly evasive and opaque prose of Her Majesty’s Inspectorate. Although a knowledge of which individuals and indeed departments are effective is an essential building block of our educational knowledge on ‘good practice’, the fact that effective teachers have to be studied and contrasted with ineffective teachers has clearly been politically and interpersonally difficult.

Fourthly, school effectiveness researchers have themselves been partially responsible for this state of affairs, since because critics of schools said ‘schools make no difference’, researchers celebrated the school level, not the classroom level, in their attempted rebuttals.

This is not an exhaustive list of reasons: the absence of any British tradition in the fields of ‘Learning and Instruction’ within educational psychology is also important, as has been the very damaging focus upon the *goals* of education within

British educational discourse, rather than the *means* that have been the focus in most of our industrial competitors. The tendency of some in the discipline of school effectiveness in the United Kingdom to waste their time playing politics has also not helped (the successful American teacher effectiveness community has been notable for *not* playing politics, for sticking to its knitting and for consequently generating what is probably the world's most robust knowledge base).

Our unwillingness to study teacher effectiveness has been shown to be costly by a number of recent events. Firstly, continued OFSTED reports have shown a very wide variation in teacher behaviours, competence and in consequent outcomes, although it must be stated that these judgements rest more on an experiential than on a research orientated knowledge base. Secondly, school effectiveness research is increasingly showing that the range of variation *within* schools dwarfs the range of variation between schools (Fitz-Gibbon, 1996) and that the influence of the teacher and of the learning level considerably exceeds that of the school. Indeed, the more one looks at the relative effects of schools as against teachers, the more one is given plausible explanations for why so many of our educational reforms have not thus far been successful. We have, by intervening with the school level rather than with the learning level, been 'pulling levers' that have small effects on their own and which may not effect any 'ripple through' to affect the key level of the classroom.

Thirdly, the cost of our ignorance in the field of teacher effectiveness has been shown by those countries which do have the knowledge base intervening productively in children's lives in ways unknown to us. Bob Slavin's (1996) *Success for All*, a literacy programme of awesome power which generates cohorts of children in which few possess reading ages below their chronological age, was based soundly on teacher effectiveness research, as is the highly successful *Dutch School Improvement Project* (Reynolds *et al.*, 1996).

If we were to look at research in the teacher effectiveness field outside Britain, we see emerging international consensus on the importance of the following factors (Slavin, 1996; Creemers, 1994):

The Quality of Teaching, involving:

- clarity of presentation
- management of the learning environment
- a restricted range of goals
- structuring of curriculum content
- questioning skills.

The Appropriateness of Task, involving:

- good match between task/ability
- appropriate grouping strategies.

The Incentives Used, involving:

- high expectations
- reward based control
- appropriate feedback

Time Use, involving:

- maximised learning time
- lesson pace
- minimal class management

Opportunity to learn, involving:

- maximised curriculum coverage.

We need urgently to see the extent to which these factors have the same power within British schools.

The possibility of gaining knowledge in the area of teacher behaviours that are linked with positive outcomes relates also to my fourth point — the need for school effectiveness research to concentrate upon how we can improve schools and upon issues to do with the dissemination and take up of our knowledge base amongst teachers. Since teachers' focal concerns continue to be 'teaching' and 'curriculum', the necessity of being able to relate to those focal concerns through a concern with teacher effectiveness is clear.

It may be, though, that it is the style of intellectual discourse that is prevalent in the rational empirical model that has dominated school effectiveness research that may not be relevant for British teachers, as they are at present. There is scarcely an English, Scottish or Welsh teacher that has not been exposed to effectiveness research through in-service provision and through probably other avenues additionally, yet it does not seem to have 'rooted' in their consciousness, nor influenced their practice.

In their reluctance to embrace new technologies of practice, teachers are behaving as have other groups historically. In the middle ages, some villages starved and their inhabitants died whilst villages situated a few miles away fed and prospered, because they would not accept any new technology. The ideas themselves are not enough, clearly, as they would be for those adhering to the rational empirical paradigm — they need to be made relevant to those like teachers with a 'craft' orientation. To use a culinary analogy, ideas about Indian or Chinese food have been around for hundreds of years without being picked up in Europe. What it needed was for the ideas to be brought by people (Chinese and Indian migrants) who could pass on the craft.

Somehow, then, we have to get across ideas to teachers who have not picked them up historically. What we need are the educational equivalents of the Chinese and Indian cooks and I suspect that the way to find them is to utilise those practitioners who have generated the effective classrooms and schools that we describe, to take school effectiveness into schools as a craft based activity rather than relying on school effectiveness researchers trying to disseminate it from a research perspective. The accounts of these 'exemplary practitioners' are likely to be qualitative, rich, focussed on personalities as much as methods, and highly context specific.

CONCLUSIONS

It may be, though, that even this utilisation of fine craftsmen and craftswomen to deliver the messages of school effectiveness research as foundations for professional development may not be adequate, because the entire intellectual paradigm of school effectiveness research is wrongly premised. In medicine, for example, the 'sick' are studied, are clinically audited to distinguish between 'presenting symptoms' and 'real' causes of illness, and are targetted with specific remedies to make them 'well'. In education, rather than understanding our educational sicknesses, we have run away from them and attempted to understand our successes instead. We have then thought that the characteristics of the well (the effective schools) could be acquired by the ineffective schools, the sick.

Maybe what is required to improve our discipline, truly to move beyond the caricatures of the critics, is indeed to reinvent it and to transform its basic structure of enquiry by focussing upon the ineffective school, by developing the highly context specific interventions these need, and then applying them to generate 'effectiveness'. Maybe school effectiveness needs to become the discipline of the 'sick', and of concern for them, more than it does of the 'well'.

You might be forgiven for thinking that since the entire paper has been generated by working within one paradigm, it is now rather surprising to hear of the utility of a radically different one. However, it is exactly this capacity within school effectiveness to be reflexive and self critical that will keep us one step ahead of our critics. In prospect is not just one term of office for the school effectiveness movement but at least two and probably three terms. We richly deserve this opportunity of proving our critics wrong.

REFERENCES

- Acton, T. A. (1980), 'Educational criteria of success: some problems in the work of Rutter, Maughan, Mortimore and Ouston', *Educational Researcher*, 22:3, 163-173.
- Ainsworth, M. and Batten, E. (1974), *The Effects of Environmental Factors on Secondary Educational Attainment in Manchester: A Plowden Follow Up*, London, Macmillan.
- Aitkin, M. and Longford, N. (1986), 'Statistical modeling issues in school effectiveness studies', *Journal of the Royal Statistical Society, Series A*, 149:1, 1-43.
- Alexander, R. (1992), *Policy and Practice in Primary Education*, London, Routledge.
- Alexander, R. (1996), *Other Schools and Ours: hazards of international comparison*. Warwick, CREPE, University of Warwick.
- Barber, M. (1995), 'Shedding light on the dark side of the moon', *Times Education Supplement*, 12 May, 3-4.
- Bennett, N. (1978), 'Recent research on teaching: a dream, a belief and a model', *British Journal of Educational Psychology*, 48, 127-147.
- Bennett, N. (1992), *Managing Learning in the Primary Classroom*, Stoke, Trentham Books for the ASPE.
- Bernstein, B. (1970), 'Education cannot compensate for society', *New Society*, 387, 344-347.
- Bosker, R. and Scheerens, J. (1997), *The Foundations of School Effectiveness*, Oxford, Pergamon Press.
- Bowles, S. and Gintis, H. (1976), *Schooling in Capitalist America*, London, Routledge and Kegan Paul.
- Brown, S., Duffield, J. and Riddell, S. (1996), 'Possibilities and problems of small-scale studies to unpack the findings of large-scale studies of school effectiveness', in J. Gray, D. Reynolds, C. Fitz-Gibbon, and D. Jesson (Eds.) *Merging Traditions: The future of research on school effectiveness and school improvement*, London, Cassell.
- Clegg, A. and Megson, B. (1968), *Children in Distress*, Harmondsworth, Penguin.
- Coleman, J. S., Campbell, E., Hobson, C., McPartland, J., Mood, A., Weinfeld, R. and York, R. (1966), *Equality of educational opportunity*, Washington, DC, Government Printing Office.
- Creemers, B. P. M. (1994), *The Effective School*. London, Cassell.
- Creemers, B. P. M., Reynolds, D., Stringfield, S. and Teddlie, C. (1996), *World Class Schools: Some Further Findings*, paper presented at the annual meeting of the American Educational Research Association, New York, NY.
- Daly, P. (1991), 'How large are secondary school effects in Northern Ireland?', *School Effectiveness and School Improvement*, 2:4, 305-323.
- Davie, R. et al. (1972), *From Birth To Seven*, London, Longmans.
- Department of Education and Science (1983), *School Standards and Spending: Statistical Analysis*, London, DES.
- Department of Education and Science (1984), *School Standards and Spending: Statistical Analysis: A Further Appreciation*, London, DES.
- Department for Education and Employment (1997), *Excellence in Education*, London, HMSO.
- Elliott, J. (1996) 'School effectiveness research and its critics: Alternative visions of schooling', *Cambridge Journal of Education*, 26:2, 199-223.
- Fitz-Gibbon, C. T. (1985), 'A-level results in comprehensive schools: The Combse project, year 1', *Oxford Review of Education*, 11:1, 43-58.
- Fitz-Gibbon, C., Tymms, P. B., & Hazelwood, R. D. (1989), 'Performance indicators and information systems', in D. Reynolds, B. P. M. Creemers, & T. Peters (Eds.), *School Effectiveness and Improvement*, Groningen, RION.
- Fitz-Gibbon, C. T. (1991), 'Multilevel modelling in an indicator system', in S. Raudenbush & J. D. Willms (Eds.), *Schools, Classrooms and Pupils*, San Diego, Academic Press.
- Fitz-Gibbon, C. T. (1992), 'School effects at A level — genesis of an information system', in D. Reynolds and P. Cuttance (Eds.) *School effectiveness: Research, policy and practice*, London, Cassell.
- Fitz-Gibbon, C. T. (1996), *Monitoring Education: Indicators, Quality and Effectiveness*. London, New York, Cassell.

- Fitz-Gibbon, C. T. and Tymms, P. B. (1996), *The value added national project: First report*. London, School Curriculum and Assessment Authority.
- Fullan, M. (1991), *The New Meaning of Educational Change*, London, Cassell.
- Galloway, D. (1983), 'Disruptive pupils and effective pastoral care', *School Organisation*, 13, 245-254.
- Galton, M. and Simon, B. (1982), *Inside the Primary Classroom*, London, Routledge and Kegan Paul.
- Gath, D. (1977), *Child guidance and delinquency in a London borough*, London, Oxford University Press.
- Goldstein, H. (1980), Critical notice — 'Fifteen thousand hours' by Rutter *et al.*, *Journal of Child Psychology and Psychiatry*, 21:4, 364-366.
- Goldstein, H., Rasbash, J., Yang, M., Woodhouse, G., Pan, H., Nuttall, D. and Thomas, S. (1993), 'A multilevel analysis of school examination results', *Oxford Review of Education*, 19:4, 425-433.
- Goldstein, H. (1995), *Multilevel models in educational and social research: A revised edition*, London, Edward Arnold.
- Good, T. (1983), 'Classroom research: a decade of progress', *Educational Psychologist*, 18, 127-144.
- Gray, J. (1981), 'A competitive edge: Examination results and the probable limits of secondary school effectiveness', *Educational Review*, 33:1, 25-35.
- Gray, J. (1982), 'Towards effective schools: Problems and progress in British research', *British Educational Research Journal*, 7:1, 59-79.
- Gray, J., McPherson, A. F. and Raffe, D. (1983), *Reconstructions of secondary education: Theory, myth, and practice since the war*, London, Routledge and Kegan Paul.
- Gray, J., Jesson, D. and Jones, B. (1984), *Predicting differences in examination results between local education authorities: Does school organisation matter?*, *Oxford Review of Education*, 10:1, 45-68.
- Gray, J., Jesson, D., & Jones, B. (1986), 'The search for a fairer way of comparing schools' examination results', *Research Papers in Education*, 1, 2, 91-122.
- Gray, J. and Jesson, D. (1987), 'Exam results and local authority league tables', in A. Harrison and J. Gretton (Eds), *Education and Training UK 1987*, 33-41.
- Gray, J. (1990), 'The quality of schooling — frameworks for judgement', *British Journal of Educational Studies*, 38:3, 204-233.
- Gray, J., Jesson, D. and Sime, N. (1990), 'Estimating differences in the examination performance of secondary schools in six LEAs — a multilevel approach to school effectiveness', *Oxford Review of Education*, 16:2, 137-158.
- Gray, J., Jesson, D., Goldstein, H., Hedger, K. and Rasbash, J. (1995), 'A multi-level analysis of school improvement: Changes in schools' performance over time', *School Effectiveness and School Improvement*, 6:2, 97-114.
- Hallinger, P., & Murphy, J. (1986), 'The social context of effective schools', *American Journal of Education*, 94, 328-355.
- Hamilton, D. (1996), 'Peddling feel good factors', *Forum*, 38:2, 54-56.
- Harris, A., Jamieson, I. and Russ, J. (1995), 'A study of effective departments in secondary schools', *School Organisation*, 15:3, 283-299.
- Heal, K. (1978), 'Misbehaviour among school children: the role of the school in strategies for prevention', *Policy and Politics*, 6, 321-333.
- Jencks, C. *et al.* (1971), *Inequality*, London, Allen Lane.
- Jesson, D. and Gray, J. (1991), 'Slants on Slopes: Using Multi-Level Models to Investigate Differential School Effectiveness and its Impact on Pupils' Examination Results', *School Effectiveness and School Improvement*, 2:3, 230-247.
- Maughan, B., Ouston, J., Pickles, A., & Rutter, M. (1990), 'Can Schools Change: Outcomes at Six London Secondary Schools?', *School Effectiveness and Improvement*, 1:3, 188-210.
- Maxwell, W. S. (1987), 'Teachers' attitudes towards disruptive behaviour in secondary schools', *Educational Review*, 39:3, 203-216.
- McCormack-Larkin, M. and Kritek, W. J. (1982), 'Milwaukee's project RISE', *Educational Leadership*, 40:3, 16-21.
- McLean, A. (1987), 'After the belt: school processes in low exclusion schools', *School Organisation*, 7:3, 303-310.
- McManus, M. (1987), 'Suspension and exclusion from high school — the association with catchment and school variables', *School Organisation*, 7:3, 261-271.
- Mortimore, P., Sammons, P., Stoll, L., Lewis, D. and Ecob, R. (1988), *School Matters*, Wells Somerset, Open Books.
- Mortimore, P. (1991), 'School Effectiveness Research: which way at the crossroads?', *School Effectiveness and School Improvement*, 2:3, 213-229.
- Nuttall, D. L., Goldstein, H., Prosser, R. and Rasbash, J. (1989), 'Differential school effectiveness', in B. P. M. Creemers and J. Scheerens (Eds.), *Developments in school effectiveness research*, Special Issue of *International Journal of Educational Research*, 13:7, 769-776.

- Ouston, J., & Maughan, B. (1991), 'Can Schools Change?', *School Effectiveness and School Improvement*, 2:1, 3–13.
- Power, M. J. *et al.* (1967), 'Delinquent Schools?', *New Society*, 10, 542–543.
- Power, M. J., Benn, R. T., & Morris, J. N. (1972), 'Neighbourhood, school and juveniles before the courts', *British Journal of Criminology*, 12, 111–132.
- Reynolds, D. (1976), 'The delinquent school', in P. Woods (Ed.), *The process of schooling*, London, Routledge and Kegan Paul.
- Reynolds, D., & Murgatroyd, S. J. (1977), 'The sociology of schooling and the absent pupil', in H. C. M. Carroll (Ed.), *Absenteeism in South Wales*, Swansea, Faculty of Education.
- Reynolds, D. and Sullivan, M. (1981), 'The effects of school: a radical faith re-stated', in B. Gilham (Ed.), *Problem Behaviour in the Secondary School*, London: Croom Helm.
- Reynolds, D. (1982), 'The search for effective schools', *School Organisation*, 2:3, 215–237.
- Reynolds, D., Sullivan, M. and Murgatroyd, S. J. (1987), *The Comprehensive Experiment*, Lewes, Falmer Press.
- Reynolds, D., Davie, R. and Phillips, D. (1989), 'The Cardiff programme — an effective school improvement programme based on school effectiveness research', *Developments in school effectiveness research. Special issue of the International Journal of Educational Research*, 13:7, 800-814.
- Reynolds, D. (1991), 'Changing Ineffective Schools', in M. Ainscow (Ed.), *Effective Schools for All*, London, David Fulton.
- Reynolds, D., & Cuttance, P. (1992), *School Effectiveness: Research Policy and Practice*, London, Cassell.
- Reynolds, D., Hopkins, D. and Stoll, L. (1993), 'Linking school effectiveness knowledge and school improvement practice: Towards a synergy', *School Effectiveness and School Improvement*, 4:1, 37-58.
- Reynolds, D., Creemers, B. P. M., Stringfield, S., Teddlie, C., Schaffer, E., & Nesselrodt, P. (1994), *Advances in School Effectiveness Research and Practice*, Oxford, Pergamon Press.
- Reynolds, D. (1996), 'Turning around ineffective schools: Some evidence and some speculations', in Gray, J., Reynolds, D., Fitz-Gibbon, C. and Jesson, D. (Eds), *Merging Traditions: the future of research on school effectiveness and school improvement*, London, Cassell.
- Reynolds, D., Creemers, B. P. M., Hopkins, D., Stoll, L. and Bollen, R. (1996), *Making Good Schools*, London, Routledge.
- Reynolds, D. and Farrell, S. (1996), *Worlds Apart? — A Review of International Studies of Educational Achievement Involving England*, London, HMSO for OFSTED.
- Rutter, M., Maughan, B., Mortimore, P. and Ouston, J. with Smith, A. (1979), *Fifteen thousand hours: Secondary schools and their effects on children*, London, Open Books, and Boston, MA, Harvard University Press.
- Rutter, M. (1983), 'School effects on pupil progress — findings and policy implications', *Child Development*, 54:1, 1–29.
- Sammons, P., Nuttall, D. and Cuttance, P. (1993), 'Differential school effectiveness: Results from a re-analysis of the Inner London Education Authority's junior school project data', *British Educational Research Journal*, 19:4, 381-405.
- Sammons, P., Hillman, J., & Mortimore, P. (1994), *Key Characteristics of Effective Schools: A Review of School Effectiveness Research*, London, OFSTED.
- Sammons, P., Thomas, S., Mortimore, P., Owen, C., & Pennell, H. (1994), *Assessing School Effectiveness: Developing Measures to put School Performance in Context*, London, OFSTED.
- Sammons, P., Nuttall, D., Cuttance, P. and Thomas, S. (1995), 'Continuity of school effects: A longitudinal analysis of primary and secondary school effects on GCSE performance', *School Effectiveness and School Improvement*, 6:4, 285-307.
- Sammons, P. and Reynolds, D. (1997), 'A Partisan Evaluation — John Elliott on School Effectiveness', *Cambridge Journal of Education*, 27:1, 123-126.
- Sammons, P., Thomas, S. and Mortimore, P. (1997), *Forging Links: Effective Schools and Effective Departments*, London, Paul Chapman.
- Slavin, R. E. (1996), *Education for All*, Lisse: Swets and Zeitlinger.
- Smith, D. J. and Tomlinson, S. (1989), *The School Effect. A study of multi-racial comprehensives*, London, Policy Studies Institute.
- Steedman, J. (1980), *Progress in Secondary Schools*, London, National Children's Bureau.
- Steedman (1983), *Examination Results in Selective and Non-Selective Schools*, London, National Children's Bureau.
- Stoll, L. and Fink, D. (1996), *Changing our schools*, Buckingham, Open University Press.
- Stringfield, S., & Slavin, R. (1991), 'Raising Societal Demands, High Reliability Organisations, School Effectiveness, Success For All and a Set of Modest Proposals', Paper presented at Interuniversitair Centrum Voor Onderwijsvaluie, October.

- Teddle, C., & Stringfield, S. (1993), *Schools Make A Difference: Lessons learned from a ten year study of school effects*, New York, Teachers College Press.
- Teddle, C. and Reynolds, D. (1998), *The International Handbook of School Effectiveness Research*, Lewes, Falmer Press.
- Thomas, S. and Mortimore, P. (1994), *Report on value added analysis of the 1993 GCSE examination results in Lancashire*, London, Institute of Education.
- Thomas, S., Sammons, P. and Mortimore, P. (1995), 'Determining what adds value to student achievement', *Educational Leadership International*, 58:6, 19-22.
- Thomas, S., Sammons, P. and Mortimore, P. and Smees, R. (1997), 'Stability and consistency in secondary schools' effects on students' GCSE outcomes over 3 years', *School Effectiveness and Improvement*, 8.
- Tizard, B., Blatchford, P., Burke, J., Farquhar, C. and Plewis, I. (1988), *Young children at school in the inner city*, Hove, Lawrence Erlbaum.
- Tymms, P., Merrill, C. and Henderson, B. (1997), 'The first year at school: a quantitative investigation of the attainment and progress of pupils', *Educational Research and Evaluation*, 3:3, 101-118.
- Willms, J. D. and Cuttance, P. (1985), 'School effects in Scottish secondary schools', *British Journal of Sociology of Education*, 6:3, 289-305.
- Willms, J. D. (1985), 'The balance thesis — contextual effects of ability on pupils' 'O' grade examination results', *Oxford Review of Education*, 11:1, 33-41.
- Willms, J. D. (1986), 'Social class segregation and its relationship to pupils' examination results in Scotland', *American Sociological Review*, 51:2, 224-241.
- Willms, J. D. (1987), 'Differences between Scottish Educational Authorities in their educational attainment', *Oxford Review of Education*, 13:2, 211-232.
- Wimpelberg, R., Teddle, C. and Stringfield, S. (1989), 'Sensitivity to context: The past and future of effective schools research', *Educational Administration Quarterly*, 25:1, 82-107.
- Woodhouse, G. and Goldstein, H. (1988), 'Educational Performance Indicators and LEA league tables', *Oxford Review of Education*, 14:3, 301-320.