

The Vital Hours: Reflecting on Research on Schools and their Effects

PETER MORTIMORE

Institute of Education, University of London

Twenty one years ago – in 1975 – I went to work with the now famous child psychiatrist Professor Sir Michael Rutter and with Dr Barbara Maughan and Dr Janet Ouston on a new study of secondary schools being planned for later that year. The study was published in 1979 by Open Books in the United Kingdom and Harvard Press in the United States under the title *Fifteen Thousand Hours: Secondary Schools and their Effects on Children* (Rutter et al., 1979a).

After nine years teaching in London secondary schools, and part-time evening study first for a degree and then for a masters' in educational psychology, I found the atmosphere of a medical research centre and working with a small research team on a new assignment, challenging and invigorating. The results which emerged from our three and a half year project proved exciting – disputing received opinion about the effects of schools and causing the educational research community to think again about its methods. Since then a body of research about school effectiveness and improvement has established itself in many different countries as one of the more productive areas of educational inquiry. It has also stamped its influence on aspects of policy and on educational practice in schools and classrooms.

In this chapter I will comment, briefly, on the mood of education in the early 1970s and the rather pessimistic views of schooling prevalent at that time. I will describe the methodology we adopted in the research and set out our major findings and the mixed reactions their publication evoked. I will report on some of the research which has followed *Fifteen Thousand Hours*. Finally, I will provide a participant's retrospective overview of the value of the research and some comments on the implications of this body of research for education systems.

THE CONTEXT OF EDUCATION IN THE EARLY 1970'S

Views of schooling vary according to the economic mood and needs of the times and are adjusted according to the perceived benefits or disbenefits conferred by schools in relation to their costs. Thus, during the nineteenth century in England when there was an overwhelming need for unskilled labour, schools were seen as largely the responsibility of the church or of private bodies. Public provision was only made for the minority and – even here – the emphasis was on the need for

low costs: “. . . if it is not cheap it shall be efficient; if it is not efficient it shall be cheap. . .” in Robert Lowe’s much quoted phrase (Johnson, 1956). The driving force for a better education system was emancipation and the need for an electorate at least partially educated. England lagged behind a number of more advanced European countries in the establishment of a national education system (Green, 1990). In both the United States and the United Kingdom today there is a mood in which some see large scale investment in urban schooling an unacceptable drain on public resources and others fear a reaction to the seeming lack of success will lead to disinvestment (Boyd, 1995).

By the 1970s the optimism, which during the earlier part of the century had permitted the establishment of free and compulsory schooling, was giving way to feelings that schools had failed to deliver their promise. The “*emergence to prominence of the sociology of education in the late 1950s in Britain and the discovery of poverty in the United States in the early 1960s*” (Silver, 1994) suggested that schooling failed to alleviate many social problems. Studies investigating the efficacy of initiatives to combat poverty, increase opportunity and pursue equality were commissioned in both countries. The conclusion of the research endeavours, culminating in the work of Coleman et al. (1966) and Jencks et al. (1972), was the view that schooling could play only a minor role in countering the influence of social class and family background.

The difficulty the education world had in accepting this conclusion led to research studies which sought to disentangle the effects of what the school tried to do from the influence of what the pupil brought into the classroom. This quest – strongly motivated by a moral concern for disadvantaged children and the seemingly limited opportunities available to them – led to a further swing of the pendulum towards the search for a positive role for schooling. This movement was inspired in the United States by the late Dr Ron Edmonds’s catch phrase “*all children can learn*” (Edmonds, 1979).

In England the same issue was first picked up by a child and adolescent psychiatrist (rather than by educationalists) who had come to this view as a result of his investigations into the various influences on children’s development. Michael Rutter and his team of researchers at London University’s Institute of Psychiatry had already carried out a comparative study of ten year-olds living in two contrasting environments – a semi rural setting on the Isle of Wight (just off England’s south coast) (Rutter, Tizard, & Whitmore, 1970) and London’s inner city (Rutter, Cox, Tupling, Bengor, & Yule, 1975). Having explored the influence of these neighbourhoods on the lives of children and their parents, it seemed only natural to go on and investigate the impact of the school. This approach received the enthusiastic support of a group of London head teachers (principals). The research team had already collected extensive personal and educational information (including reading and non verbal intelligence tests and teachers’ ratings of pupil behaviour) on a large sample of children in their primary (elementary) school years. This data base provided the foundation on which Fifteen Thousand Hours could be built.

FIFTEEN THOUSAND HOURS

The title of the study was derived from our estimate of the total time children spent in schools during their eleven years of compulsory schooling. The aim of the study was to answer two questions: *do different schools have different effects on children's progress*; and, if they do, *what is it about some schools which makes them more successful than others?*

The study focused on twelve non-selective maintained (publicly-funded) secondary schools serving socially disadvantaged, inner city areas. These were the schools which had taken a relatively high proportion of the sample of children studied in an earlier research project on whom detailed information was available. The schools included those which were mixed and single sex, with and without religious affiliations (permitted under British regulations), housed in old and new premises and varying in size from 500 to nearly 2,000 students.

In order to answer the question as to whether schools had different effects, we collected data on four independent outcome measures: students' attendance; behaviour in schools; results in public examinations (set and marked anonymously by external examination boards); and officially recorded delinquency rates. As we stated at the time, we did not believe that these four measures reflected all the aims of schooling but we felt that they could provide a reasonable indication of whether the school was exerting an influence. We followed the whole age-cohort of the original sample of students up to the end of their years of compulsory schooling and then, in a further study, into their subsequent study or entry into the world of employment.

The findings showed that there was marked variation between the schools on each of the four outcome measures, even when – using the data collected in the primary years – we had taken account of differences in the intakes of students. On the measure of academic achievement, for instance, we constructed a weighted score which combined results from the two separate systems of examinations used at that time and correlated these with the children's measured performance at the earlier age and with information on social background. When this was done, the school with the best results gained 70 per cent more passes than expected; the one with the least, 60 per cent less. For the measure of delinquency, we sought permission to obtain classified information from police files. For the measure of attendance we gathered information from schools' daily registers. As with academic attainment, school differences remained even when background factors were taken into account. In each case, it was clear that school variation could not be explained away by differences in the intake characteristics of the students.

The fourth outcome, behaviour in schools, was made up of a scale of a large number of items drawn from our extensive observations in the classrooms and playgrounds and of students' self-reported behaviour. Some of these items were trivial – not having a pen or pencil in class; some were serious – acting aggressively towards the teacher or another student. The scale worked; schools which recorded a high number of trivial items also were more likely to have a number of the more serious ones. In fact, we found substantial (five fold) differences between schools.

These could not be related directly to the intake characteristics of the students. It was clear that the kinds of behaviour the students were showing in their secondary schools were not simply a continuation of former patterns learned in primary schools but were more likely to be the students' response to the situation in their secondary schools. Each of the four outcome measures told the same story and, although there was some variation, the general trend showed a clear tendency for schools which ranked highly on one measure also to have higher measures on the others. We concluded that the first question, as to whether different schools had different effects on children's progress, had been answered in the affirmative.

In order to answer the second question – *What is it about some schools that make them more successful than others?* – we first examined a wide range of factors to do with the size, sex composition and other physical and resource factors which we knew varied between the schools. With only one or two exceptions, we found that these factors bore little, if any relationship, to the different rates of pupil progress which we had observed.

We turned, therefore, to an examination of the mass of information we had accumulated from our interviews with teachers, questionnaires completed by students of different ages, and from the extensive observations we had made over the three previous years. We found that a large number of items could be related statistically and educationally to the patterns of the outcomes achieved by the different schools. We found, for instance, that teachers' emphasis on the academic life of the school was an important signal to students of the prime purpose of schooling. We also noted – from our observations of over 500 lessons – that the way teachers interacted with students and organised their classroom teaching was critical. Those that drew predominantly on whole class approaches seemed more likely to promote progress than those who focused mainly on individual students. Rewards appeared more likely to change students' behaviours than did punishments. The conditions – both physical and psychological – deemed suitable for students also seemed to have a marked effect on student progress as did the level of responsibility permitted them by the school. Finally, we concluded that the schools most likely to be associated with positive outcomes had created a particular ethos: a positive view of young people and of learning.

The conclusions that we reached, in 1979, were that schools could make a difference and that it was possible to identify some of the factors which made that difference possible. Few of the factors we had identified came as a surprise to teachers although, interestingly, many of the factors that some teachers thought would be important (such as rote learning, small groups and strict punishments) and were not found to be so. Most of the factors which emerged as being strongly associated with positive outcomes fell within the control of principals and teachers and few appeared to be determined from outside of the school. Our conclusions, therefore, were that schools could do much to promote progress and that, even in socially-disadvantaged areas, they could be a force for the good.

REACTIONS TO THE STUDY

In describing the reactions to the study I will draw on an analysis I undertook for a chapter on the practicalities of doing educational research (Mortimore, 1991). The results of *Fifteen Thousand Hours* were first made available to the principals and teachers in the summer of 1978. Their perceptive comments helped us to interpret our findings for the book of the study, published the following year. The book launch was accompanied by a considerable amount of press commentary.

There were two detailed accounts published in the *New Statesman* (Rogers, 1979) and in *New Society* (St John Brookes, 1979) and there were a large number of articles about the research produced in the broadsheet and tabloid press. The newspaper comments were inaugurated by the *Observer* which broke the publisher's embargo with an article headlined *When Potted Plants are Better than Discipline* (Stevens, 1979). This was followed by an article by a Member of Parliament, Rhodes Boyson, in the *News of the World* which focused on the negative findings of the study (Boyson, 1979). *The Yorkshire Post* highlighted more positive aspects in a piece entitled *Lessons for a perfect School* (Whitehouse, 1979). *The Nottingham Evening Post* used the headline *Education Myths are Exploded* (Bailey, 1979) and the *Daily Express* provided *Your good School Guide* (Kemble, 1979). *The Evening News* carried a series of articles under the headline *Do as I do – not as I say* whilst the *Daily Mail* chose *Schools that harm the Gifted* (Rowlands, 1979). Another paper – the *Southend Evening Echo* – drew on a curious and somewhat inaccurate headline *Less Caning does not spoil the Child* (Oswick, 1979). A review in the *Teacher* – the weekly paper of the *National Union of Teachers* – was supportive of the research in a rather lukewarm way – Secondary findings stress the obvious (NUT, 1979) but the *Economist* devoted three columns to a positive review entitled *Schools Count* (Economist, 1979). Unfortunately, the paper which would have been likely to give the most balanced detailed account – the *Times Educational Supplement* – was unable to do so since its staff were on strike at the time.

Much of this commentary either dealt only with the central finding, that individual schools varied in their effects. Most of the headlines were sensational and inaccurate. Overall, the press attention, although it drew attention to the research, polarised the education community and was not helpful, therefore, to the promotion of the study or to the understanding of complex educational debates. Its major preoccupation was to headlines rather than to the substance of our findings.

The second wave of commentaries, some time later, came from academics. Critical articles were published by fellow researchers (Acton, 1980; Goldstein, 1980; Heath & Clifford, 1980; Tizard, 1980a). As a research team, we felt bound to respond to these articles and we devoted a considerable amount of our time to dealing with the points which had been raised. We wrote specific replies to Acton's comments (Rutter et al., 1980a); to Tizard and to Goldstein (Rutter et al., 1980b) and to Heath and Clifford (Maughan et al., 1980). The latter was immediately followed by a further riposte from its authors (Heath & Clifford, 1981).

Two further collections of discussion papers were produced as a result of