

FORUM

Spring 1974
Volume 16
Number 2

35p

FOR THE DISCUSSION OF NEW TRENDS IN EDUCATION

Schools CAN make a difference

A century of regression

Patrick Meredith

How schools make a difference

Nanette Whitbread

Non-streaming did make a difference

D Thompson

Language, schools and the working class

Brian Harrison

Schools and science achievement

Guy Neave

Sex-roles in reading schemes

Glenys Lobban

Prediction, selection, description and choice

J F Eggleston

Reviews

R G Woods, H MacDermid, D N Thomas, T Whiteside

FORUM and the Campaign for COMPREHENSIVE EDUCATION CONFERENCE

**THE 15-19 AGE GROUP :
SCHOOL
AND FURTHER EDUCATION**

**Saturday, 15 June 1974
10.00 am to 5.00 pm**

**FRIENDS' MEETING HOUSE
Euston Road, London NW1**

The annual **Forum/CCE** conference this summer will focus on the interaction between schools and further education colleges in promoting comprehensive education.

The conference will cover such questions as concentration of all students in F.E. Colleges, linked courses, joint teaching, sixth form colleges and further education colleges contrasted, and so on. Basically the conference will deal with the different solutions to this problem now emerging.

The May **Forum** will carry full details. *In view of possible shortage of space, you are advised to register now.*

Conference fee: £1.00.

Send cheque or postal order to: **Organiser, Conference, 52 Wood Vale, London N10.**

Editorial Board

Michael Armstrong Countesthorpe Upper School, Leicestershire.

Kenneth Coram Headmaster, Bandle Hill Junior Mixed School, Stevenage.

Annabelle Dixon International School, Geneva, Switzerland.

G C Freeland Ex-Headmaster, Alderman Richard Hallam Junior School, Leicester.

David Grugeon Assistant Director of Studies, Open University.

H Raymond King Ex-Headmaster, Wandsworth School, London.

Eric Linfield Senior Lecturer, Newton Park College of Education, Bath.

Peter Manger Head of Education Department Coventry College of Education.

Roger Seckington Headmaster, Heathfield High School, Earl Shilton, Leicestershire.

Jack Walton Senior Staff Tutor, University of Exeter Institute of Education.

Roy Waters District Inspector ILEA.

Editors Brian Simon Professor of Education, School of Education, University of Leicester.

Nanette Whitbread Principal Lecturer, City of Leicester College of Education.

Editorial Communications. MSS and contributions to discussion (800 words maximum) should be addressed to the Editor, 11 Pendene Road, Leicester, LE2 3DQ
Tel: Leicester 705176.

Business information

Correspondence relating to subscriptions etc, should be addressed to The Manager, 58 Elms Road, Leicester LE2 3JE. Tel: Leicester 708123.

Forum is published three times a year, in September January and May. £1 a year or 35p an issue.

Schools CAN make a difference

After a period of educational expansion—in the late 1950s and 1960s, there is now a turn to ‘consolidation’ and (naturally) to conservatism. Perspectives are limited. The government’s **White Paper Framework for Expansion** is now generally recognised as a framework for restriction. There is a cold, skin-flinting attitude to education characteristic of the general outlook of those who now hold the purse-strings and the power.

In such a period it is not surprising that obsolete and discredited ideas, which have done service in the past in holding back educational advance, should be resurrected—sometimes in a grotesquely caricatured form. So teachers are assailed once again with the fatalistic ideas of psychometry—resurrected by Jensen and popularised by Eysenck—which claim that a man is born all that he may become (or 80 per cent so). More recently roughly the same conclusion has been reached by a different road; the theory of linguistic deprivation has been used to uphold the view that working-class children in general, because of their linguistic environment, do not develop the abilities for conceptual thinking in the same way as middle-class children do (who use the so-called ‘elaborated code’). The limits of their achievement are determined environmentally at an early age. Thus, it is argued, both through heredity and through environment human abilities are fixed and determined. The child is caught both ways. There is little that the school or teachers can do.

Recent studies, especially in the United States, have tended to reinforce this educational fatalism. Mass quantitative surveys have been interpreted as supporting the view that the school is relatively powerless—that the important factors affecting educational achievement are family background and social class. The conclusion is that the teacher—and the school generally—is helpless in the face of deep-seated biological and social (environmental) forces—that there is no escape. Such doctrines, constantly repeated, must affect the self-image of teachers—driving home the lesson that there is little they can do to bring about human change through education. Schools, it is held, do not and cannot make a difference.

This is a very dangerous doctrine. Its objective effect is to disarm education at a time of attack—by

removing the weapons of defence. The theoretical hopelessness which it conveys may lead to a fatalism which could have the effect of ensuring its correctness—that is, by acting as a self-fulfilling prophecy, as such theories did in the 1930s and later. If teachers are constantly assured that they cannot bring about human development through education, then perhaps they will give up the effort.

But in fact this whole thesis is based on a confusion. The argument that schools can’t make a difference derives largely from the United States where some apparently hoped that through educational initiatives (for instance the Headstart programmes) the poorest and most deprived sections of the population might be pushed ahead educationally at such a rate as to catch up and get ahead of the middle-class, advantaged, children. This hasn’t happened in practice. But this is hardly a reason to conclude that schools are powerless.

The school system of any country reflects in some degree the class structure and relations of that society. To expect class relations to be overturned through purely educational measures is clearly ridiculous. This is not to deny that—given effective policies—important social changes can be brought about through education.

In this number, we submit the theory that school cannot make a difference to a systematic critique. Patrick Meredith kicks off with an analysis of the Jensen/Eysenck theses, a critique he is well qualified to undertake. Brian Harrison looks at some contemporary linguistic theories—theories often used in an anti-educational sense, and indicates the inadmissibility of such interpretations. Nanette Whitbread, in an important article, surveys the recent literature and controversies on this topic—particularly the conclusions derived from mass quantitative surveys, and brings out some of the weaknesses of this line of argument. Guy Neave reports on a recent international study which indicates that different school systems do seem to have different educational outcomes.

Of special importance is the article by Dr. Thompson, which examines the changing achievement of a single school as it moved over from streaming to non-streaming. The remarkable results

Continued on page 44

A Century of Regression

Patrick Meredith

Professor Meredith has spent a life-time working in the field of educational psychology and related disciplines. Here he focuses on the concept of intelligence.

Sir Francis Galton, in his *Memories*, recalled that, caught in a shower whilst rambling, he 'first clearly grasped the important generalisation that the laws of Heredity were solely concerned with deviations expressed in statistical units . . . the idea flashed across me, and I forgot everything else for a moment in my great delight'.

In an important article in *Isis*, December 1972, by Ruth Schwartz Cowan (of New York State University) on 'Francis Galton's Statistical Ideas: The Influence of Eugenics' the author gives us a *déjà vue* experience of the current controversy over education and heredity, which gives point to the ambiguity of the word 'regression'. We read that in 1873 Galton 'suggested that a national registry should be established for developing and administering tests that would determine the physical and mental abilities of the population'. In 1972, Arthur R Jensen, in *Genetics and Education* (Methuen, London), states that 'the rate of occurrence of mental retardation, with IQs below 70 plus all the social, educational, and occupational handicap that this implies, is six to eight times higher in our Negro population than in the rest of the population . . . yet the Government *has* not supported, *does* not, and *will* not, as of this date, support any research proposals that could determine whether or not any genetic factors are involved in this differential rate of mental handicap'.

It is the scientific and educational implications of Jensen's clamour for Government support on which, in what has to be a relatively short article, I propose to concentrate. For whether he and Shockley and Eysenck like it or not, they have embroiled themselves in the most explosive issue today, viz, the interaction between science, education and politics. They explicitly don't like the consequences for *themselves*, but it is the consequences for our children which concern the rest of us. Personally, I believe them all three to be honest and well-meaning, but so naïve as to become an international danger when let loose with a correlation coefficient.

Incidentally, I am so sceptical of governments and politicians that I have no party-political axe to grind. Being partly Irish, partly Scottish, a Cockney by birth and a Yorkshireman by adoption, and observing very religious-minded and politically articulate Irishmen (many, presumably, with high IQs, and all ethnically 'white') slaughtering one another, I see no evidence of a definable relation between conventional 'intelligence', race and biological survival. Europeans have slaughtered one another in millions for centuries. More recently, Nigerians have followed suit, likewise Indians and Pakistanis, and the highly intelligent Semitic races are not notable for their pacific inclinations. A revealing clue to the psychological aspect of this combination of capability with combat is given by Jensen himself in a quotation from Thorndike (p 98 *op cit*): "In the actual race of life, which is not to get ahead, but to get ahead of somebody, the chief determining factor is heredity." So said Edward L Thorndike in 1905. Since then the preponderance of evidence has proved him right, certainly as concerns those aspects of life in which intelligence plays an important part,' says Jensen.

Both Jensen and Eysenck repeatedly attack the scientific credentials of their opponents, but anything less scientific than this crude assertion that 'The preponderance of evidence has proved him right' would be hard to find in a book with such a sustained 'more scientific than thou' attitude. And this mishandling of 'evidence' brands Jensen as insensitive to the historical facts which contradict Thorndike even within his own dubious ethical frame of reference. It was a group of highly intelligent whites, determined 'to get ahead of somebody' who bungled the Watergate burglary.

Since Jensen, Eysenck and Shockley have all publicly frothed with righteous indignation against all criticism of their curious and unoriginal doctrines it is not for them to object if we ask whether 'intelligence' and 'righteousness' are correlated?

Since 1984 is only ten years ahead it is interesting to see that even Galton had certain reservations in 1884.

'Our present ignorance of the conditions by which the level of humanity may be raised is so gross, that I believe if we had some dictator of the Spartan type, who exercised absolute power over marriages, assigning A to be the wife of B and C to be the wife of D, and who acted with the best intentions, he might possibly do even more harm than good to the race.' But it is quite clear from his espousal of the Eugenics programme that his reservations were not concerned with the ethics of applying stock-breeding techniques to human beings but with the (then) lack of sufficient data to implement the programme. As Dr Cowan points out (*op cit* p 527), 'Galton created biostatistics while he was in pursuit of a solution to the problem of heredity. He dreamed of a truly eugenic society, a society based on the laws of heredity: the laws of heredity would guide the breeding habits of men, and the evolutionary welfare of the race would become a moral criterion.'

Without going into the mathematics of Galton's work on regression and correlation, on which Dr Cowan's article throws valuable light, I want to commend this article to educationists for a more general reason, viz, the relevance of the history and philosophy of science to education. As a student of education I had the good fortune to be trained as a teacher in the early twenties by a generation of educators for whom 'educational psychology' was a body of concepts (admittedly of a somewhat dated Herbartian flavour) whose function was actually to help teachers to teach. We also learned about the IQ, of course, and of the 'G and S' theory of Spearman (under whom I started some research a few years later) as interesting current developments. I certainly never anticipated that the IQ would become a systematic administrative tool for *excluding* children from the (supposedly) better teaching of the more highly paid teachers. During my career I have witnessed, with growing dismay, an inexorable *inversion* of the role of Educational Psychology.

Hell-bent on conforming to the ethics of an educational system geared at all levels to Thorndike's concept of 'getting ahead of somebody', generations of educational psychologists have been reared on a diet of psychometrics whose function is to demonstrate degrees of *ineducability*, to assign educational failure unequivocally to defects in the child, in his home, in his parents and in his heredity, and *never* to failures of teaching, failures in school organisation, failures in urban conditions, failures in commercial ethics, or failures in educational legislation.

Here Jensen tries to have it both ways, and it is this recurring characteristic which undermines his scientific credibility. He seems totally incapable of examining the internal consistency of his own most fundamental concepts. (It is partly for this reason that I am urging educationists to take a serious interest in the history and philosophy of science, and the philosophers and historians to contribute more of their insight to the problems of education.)

On the one hand, Jensen says, 'But there is that stubborn IQ. William Stern's concept of the "mental quotient", what Terman renamed the intelligence quotient, is the ratio of mental age to chronological age. That concept of the IQ has, I believe, proved itself the most important quantitative concept contributed thus far by psychology. As with many prime concepts in science, the importance stems directly from invariance.' Here I find myself at a loss to find words to comment on Jensen's pathetic faith in this hoary fallacy of the 'constancy of the IQ', especially as he contradicts himself (p 88) thus: 'Although the IQ is certainly not "constant", it seems safe to say that under normal environmental conditions it is at least as stable as developmental characteristics of a strictly physical nature.' Here Jensen succeeds not only in refuting the whole basis of his argument but implicitly concedes the case for his 'environmental' opponents on whom he lavishes such abundant scorn. For how would he define 'normal environmental conditions'? But the most revealing give-away is in his admission that 'Psychologists know full well that what they mean by intelligence is only part of the whole spectrum of human abilities . . . the particular constellation of abilities we now call "intelligence", and which we can measure by means of "intelligence" tests, has been singled out from the total galaxy of mental abilities as being especially important in our society mainly because of the nature of our traditional system of formal education, and the occupational structure with which it is co-ordinated (my emphasis). Thus, the predominant importance of intelligence is derived, not from any absolute criteria or God-given desiderata, but from societal demands.'

I have quoted Jensen at perhaps excessive length because it is hard to find a better statement of the case *against* the doctrine of genetic determination. How could the genes ever conspire to sort themselves out, ignoring all their own mutations and toxic assaults from an often sickly uterine environment, so as to pro-

duce an invariant degree of responsiveness to a system of educational and societal demands which varies from nation to nation, from one act of parliament to another, from one industrial crisis to another, from one epidemic of cholera to another? It is a fantastic card-game enacted only in the bewildering labyrinth of Jensen's febrile imagination.

So we must say a little about Genetics itself, on which Jensen himself, to judge from the long list of his publications, has surprisingly little to say. They are all about *inferences of genetic determination*, which is by no means the same as scientific genetics. Jensen seems to have swallowed Galton's 'moment of delight' in inventing the curious idea that 'the laws of Heredity were solely concerned with deviations expressed in statistical units'.

The point here is that the units of scientific genetics are *not* statistical. Lancelot Hogben, in his *Introduction to Mathematical Genetics* (New York: W W Norton & Company, Inc, 1946) has this to say: 'The units which define the genetical make-up of a population may be either (a) **individuals**, classified as members of one or other genotype; (b) **genes**, classified by reference to the genotypes they distinguish.' No one venturing into the field of genetic controversy can afford to be ignorant of the history of the subject. In his monastery garden, Mendel did not experiment with statistical units but with considerable numbers of individual plants with sharply definable phenomenal characteristics.

No psychologist can afford to ignore genetics, but he needs to do even more homework on this subject than on statistics. Over the years I have had occasion to give short courses in the elements of the subject. One of these was to a class of police-officers. The police liked my course and obligingly used their printing-press to put my notes into circulation. Unlike Jensen I claim no authority in genetics, but having quoted him at some length I feel entitled to quote an extract from my one and only publication in this field (*The Genetic Background to Human Development—Notes for Students*, G Patrick Meredith, University of Leeds, Department of Psychology, 1950).

'The science which investigates the working of heredity is known as **Genetics**. It is one of the most systematic and highly developed of all the biological sciences and is still advancing very rapidly. It presents many special difficulties to the student. These arise from the following sources:

- (i) Most people approach this subject with many prejudices and popular misconceptions which have to be unlearned.
- (ii) Many of the questions which present themselves have to be completely restated before they can be subjected to scientific investigation.
- (iii) Most of the problems depend upon observations extending over many generations. This forces the geneticist to rely upon evidence from flies, mice and other rapidly breeding creatures. Although much of this evidence is common to all living things, including man, many human problems cannot be studied through animals.
- (iv) There are many entirely different methods involved in the scientific study of heredity, eg, experimental breeding, microscopic study of cells, statistical analysis, and so on. It is not easy to bring together evidence of such different kinds and to follow such varied trains of reasoning as occur in genetics.
- (v) The facts of heredity are inherently complex, and living creatures are inherently variable. So is the environment. Thus we are faced with some of the most involved questions in the whole of science.'

'... genes which carry damaging consequences may continue from generation to generation without killing off the family, if they are recessive. For they are masked whenever they occur in combination with an allele which is dominant. Only when two recessives of the same type meet in the same individual can the damage be done. Hence also the futility of sterilisation as a social policy for removing, eg, inheritable mental defect. For we do not know who else is carrying the recessive genes when these are masked by dominant genes.'

With such a complex and ill-defined set of characteristics as the rag-bag known as 'intelligence', the methods of Jensen, Shockley and Eysenck belong to alchemy or astrology, not to science. Spearman himself declared that 'Intelligence is a word with so many meanings that finally it has none.' And in my *Guardian* article (Sat, May 26, 1973, unfortunately titled—not by me—'Eye Synch') I quoted from Eysenck's popular book *Know your own IQ* (Penguin Books) his own confirmation of this lack of science:

'Intelligence tests are not based on any very sound scientific principles, and there is not a great deal of agreement among experts regarding the nature of intelligence ... The agreement between different well-

established tests is usually reasonably close, but it is nevertheless far from perfect, and differences of 10 points of IQ from one test to another are by no means rare.'

As a (fortunately unrepresentative) sample of my fan-mail received after the *Guardian* article, I commend the following letter to our prophets of genetic destiny as displaying the kind of intelligence which they can count upon in their support. It is from a linguistically-minded lady, whose choice of languages may or may not carry implications. Her name (omitted here) might be Irish or Scottish.

'Re—your article, Guardian, 26th May

Whoops—you sounded like a farm cockerel (wriggling in ecstasy), as you let fly your cock-a-doodle-do canard about Professor Eysenck's research on the ESN negro!

But it was not sufficient to put a half-nelson on our traditional belief that *black Sambo* is only one-jump away from his pink-bottomed cousin, the APE in the evolutionary scale.

Auf wiedersehen and a riverderci.'

Our Colleges of Education have an uphill task not only against ministerial decrees seeking to eliminate them but also against the power of arrogant pseudo-scientists seeking to eliminate the very children most in need of civilised educational thinking. In this struggle the historical voice of genuine science, sensitive to the diversity of the human species, needs advocates willing to stand up and be counted. Civilisation may have been founded on agriculture from which scientific stock-breeding of plants and animals in closely controlled conditions developed. To apply these laws to human stock-breeding is not only to depart from the conditions which validate genetics. It is to confuse origins with ends. It arrogates to the breeders a theocratic status for which their muddled thinking singularly ill-equips them.

Galton was not only a relative of Darwin's but worked closely with him on this issue before Mendel's obscurely published paper was known. We can pay due tribute to Darwin's substantiations of the facts of evolution without accepting his pre-genetic concept of its mechanism, and certainly without prancing over to the 'Social Darwinism' which Jensen's predecessors so ardently espoused. To quote Hogben again (*op cit* p 210): 'No issue emphasises the contrast between a modern view of evolutionary change and that of

Darwin's generation more sharply than the role we ascribe to *mutation pressure* . . . we have no exact figures of the spontaneous occurrence of a new mutation and its reverse mutation.' That was in 1946. A quarter of a century of nuclear pollution is now giving us a measure of the non-spontaneous mutations produced by some of the most highly 'intelligent' scientists in the world. If our genetic prophets were concerned with the quality of living of their descendants (if any) rather than with increasing their power 'to get ahead of somebody', they might turn their attention to the genetics of co-operativeness rather than to the genetics of competitiveness.

Since Socrates we have the assurance that all men are mortal. Thus Jensen is unlikely ever to be able to observe the consequences if any Spartan government were so ill-advised as to put his sterile doctrine into effect.

REDUCED RATES SCHEME

Forum can be obtained cheap by students in Colleges and Universities. The price of each copy to individual students has been reduced to 10p. Bulk orders should be sent to the Business Manager at the address given below. One free copy of *Forum* is made available for every 20 copies ordered. Lecturers in Colleges of Education and in University Education Departments are asked to take advantage of this substantial concession. Please fill in the order form below.

Name

Address

College or University

Please send me.....copies of *Forum*
on the reduced rates scheme, for which I enclose

cheque/postal order for.....

Return this form to the Business Manager,
Forum, 58 Elms Road, Leicester, LE2 3JE.

How Schools make a Difference

Nanette Whitbread

Determinism has bedevilled the schools, preventing them from fulfilling their democratic function of enabling all children to learn. The now discredited doctrine of innate, fixed intelligence justified streaming, bipartism and eleven-plus selection, and led teachers to believe they knew what to expect of a child once they knew his IQ. While the struggle for non-streaming and comprehensive schools is still under way a new social determinism, derived from a mass of quantitative survey evidence, now implies that a child's social class determines his ability to learn in school.

Standardised tests of attainment in reading and arithmetic, as well as intelligence tests which are now admitted to be culturally biased, have been used as the main criteria to assess and compare children's learning. Since literacy and numeracy are basic instrumental skills which schools must try to teach because they are distinctive of civilised humanity and essential for living successfully in modern society, there is reason for using such criteria provided we also recognise that education in school is concerned with much else besides.

The National Survey of over 3,000 children in 171 schools undertaken for the Plowden Committee, the National Children's Bureau longitudinal study of 17,000 children in Britain and the Coleman Report on **Equality of Educational Opportunity** in a massive sample of 900,000 children in American schools found, respectively, that manual working-class British children and most ethnic minorities among American children not only show lower attainment relative to their peers when they start school, but that these disadvantages persist and the difference increases during their school careers. Coleman summed up the implication: 'That schools bring little influence to bear on a child's achievement that is independent of his background and general social context.' Indeed, if the gap widens as these and other studies indicate, schools appear to exacerbate the initial inequality.

The initial educational disadvantage is not surprising for it reflects the kind and extent of informal learning provided in less by contrast with more 'educated' homes. What is cause for concern and demands explanation is that schools as a whole fail to compensate for initial disadvantage and may even increase it.

The Coleman Report, being a massive quantitative survey, made no attempt to discover whether or how particular schools differed from the generalised find-

ings. An American critic of this Report, H S Dyer, re-examined the data and found that, for instance, the assertion that 'tracking' had no effect on achievement was invalid because the question asked was so vague as to hide any relevant information about actual classroom practice or to distinguish between a variety of policies. Three other American studies found evidence of individual school factors—such as 'classroom atmosphere', cost per pupil, curriculum and quality of staffing—which do relate to children's achievement irrespective of their socio-economic backgrounds. Because the Coleman Report relied almost exclusively on 'verbal ability as the measure of pupil achievement' and treated all other attributes such as interest and self-confidence 'as conditions of learning rather than its goals', Dyer argued that it underestimated matters over which schools and teachers have some control and gave *'school systems the false impression that there is not much they can do to improve the achievement of their pupils'*.

Other American critics have also questioned conclusions drawn by the Coleman Report. S Bowles re-analysed the data and found 'that the achievement levels of Negro students are particularly sensitive to the quality of the teaching staffs', and that the significance of individual school characteristics was understated. Project Talent, a study of 6,600 adolescents followed from the middle to the end of high school, drew the clear inference that the curriculum and facilities available, the quality of teaching and the general school atmosphere were more important in their influence on a range of attitudes than was the type of home background. A B Wilson claims that most recent studies, including several of his own, have shown that 'the school environment has an independent effect moulding the educational aspirations and orientations of students'.

The significance of the environment or atmosphere created by particular schools and of teaching styles has been recognised in several English studies too. Dorothy Gardner's extensive researches between 1942 and 1966 on infant and primary schools—and, indeed, the Plowden Report—found both superior achievement and greater confidence among children in 'informal' or 'experimental' by contrast with traditional or 'formal' schools. F W Warburton's study of 48 non-selective schools in Salford found higher attainment in schools

using more 'progressive methods', and Hilde Himmelweit's comparison of four London grammar schools found more working-class boys stayed on where they felt encouragement and the school gave them a sense of success.

These studies, including the Coleman Report itself, have shown that a variety of school factors have more influence on motivation and achievement among children from less educationally favourable home backgrounds. The particular school seems to matter less for middle-class children. Yet both Newsom and Plowden Reports found a cluster of unfavourable school factors operating in many schools attended by already disadvantaged children.

The Coleman Report noted the importance of 'attitudinal variables' for variation in achievement, particularly 'a sense of control of environment' which affects self-concept; but it assumed 'that these attitudes depend more on the home than the school' and did not investigate possible school influences, except their racial composition. Even the latter was analysed only quantitatively, and subsequent research has shown that it is the quality of inter-racial relationships that is important.

Differential treatment

The same schools convey different messages to different children. A horrific example is R C Rist's observational study of young negro children followed through kindergarten and grades 1 and 2 in a ghetto school. A week after first meeting them their teacher streamed them at three tables and thereafter treated the 'fast learners' at Table 1 quite differently from Tables 2 and 3: she praised and spoke more to the former and chose monitors from among them while rejecting, rebuking and even ridiculing the others. Apart from accommodating 'repeaters' and new children, much the same table-streaming continued into grade 1 under another teacher, and when they entered grade 2 most of the kindergarten Table 1 were 'Tigers', the rest of them and the group below 'Cardinals', while repeaters and three other 'real failures' were 'Clowns'. The differential treatment of children by all three teachers was similar in each grade in a school not regarded as untypical.

If English teachers think this sort of thing does not happen here, they should read two independent studies

of boys' grammar schools by R King and C Lacey and two of secondary modern schools by David Hargreaves and John Partridge. All four reveal the sharply differential treatment of boys allocated to upper and lower streams. Hargreaves analysed 'the development of opposing subcultures' among boys by the time they reached the fourth year—the 'academic' A and B and the 'delinquent' C and D streams—although the IQ range in both A and D streams was then over 30 points and considerably wider than it had been in the second year. Lacey's detailed examination of a similar process in a streamed grammar school showed how the rejected formed an anti-school group. As Hilde Himmelweit observed, some schools can enhance the sense of success for some children only at the cost of rejecting and alienating others. And this happens within both selective and non-selective schools. In Britain, working-class children, like negro and other minorities in America, are most vulnerable to this inculcation of a sense of failure.

An investigation by Julianne Ford suggests that the same differential messages are conveyed in a comprehensive school if this is streamed. The streamed comprehensive 'shows a persistence of class bias in educational attainment' and 'the "self-fulfilling prophecy" characteristic of the tripartite system is still very much in evidence' as revealed by motivation to stay on at school or by job aspirations. Moreover, the children chose friends mainly from within their stream which was their 'real' social unit, and minority social class friendship clusters also emerged. This lack of social class mixing may be compared with the absence of integration noted by Irwin Katz in many desegregated schools 'characterised by stress and threat' where negro children do worst: they achieve best in truly integrated schools where there is an atmosphere of friendly interracial acceptance, as Tom Pettigrew discovered in his re-analysis of data from the Coleman Report.

Schools help to create peer group subcultures which exert normative pressures for good or ill. Many produce delinquent, anti-school subcultures and conditions of tension along with that self-fulfilling prophecy which perpetuates and exacerbates the initial disadvantages with which some children start school. All the evidence suggests that streaming contributes to this syndrome. Douglas Pidgeon's research for the NFER found variation in children's performance was greater in streamed than non-streamed schools.

Teachers also contribute to the effect. As the four

studies of boys' schools show, they become caught up in the streaming system. Pidgeon came to the conclusion that streaming and English teachers' belief in it and the assumptions on which it is based leads them to feel they 'know' what to expect from their class. The result is 'the operation of the self-fulfilling prophecy based on teacher expectations'.

Teachers are now so aware of the generalised research findings about the influence of home background and social class on children's attainment and IQ that they are apparently very ready to make assumptions concerning a child's desire and ability to learn. Elizabeth Goodacre noticed that these judgements were least reliable and most stereotyped for children from overtly lower working-class districts, and older or more authoritarian teachers were most likely to classify them as coming from 'good' or 'poor' homes. Rist's kindergarten teacher first allocated her children to tables on this basis. Streaming within classrooms is practised in supposedly non-streamed schools in Britain and America.

By contrast, Silberman singled out three Harlem elementary schools whose principals hold their teachers accountable and expect the children to succeed. These schools refute the Coleman syndrome—and were characterised by their warm and happy atmosphere. Chicago's CAM Academy, Harlem Prep and the 'Upward Bound' programme have been remarkably successful in convincing poor but bright high school students that they were capable of going to college—all used informal approaches and rejected the traditional school ethos. We know schools in England where children succeed against all the odds.

In a dramatic experiment at a downtown San Francisco school, Rosenthal and Jacobson first tricked teachers into believing that certain children would make academic 'spurts' and then showed how their expectations promoted these pupils' success in learning. Greatest gains were made by attractive-looking children whose parents were known to take an active interest in their school progress.

Teachers' personalities, attitudes and styles of working are significant. This is evident in Barker Lunn's study for the NFER on **Streaming in the Primary School**. She identified two major types of teacher of whom Type 1 was more 'permissive' and informal, more favourable to children who learn slowly, more tolerant of noise and talking in class, less approving of physical punishment, and believed in non-streaming. Only 17% of teachers in streamed schools were of this

type, but nearly half those in non-streamed schools were not of this type. At the time of the survey, 65% of junior schools still streamed and only 6% were wholly non-streamed through all year groups, so it is not surprising that the study produced no evidence either way about the effect of non-streaming on attainment. But it is worth quoting what was noticed about children's motivation and attitudes:

'Children of average ability . . . developed a better teacher-pupil relationship and academic self-image in non-streamed schools with a Type 1 teacher.'

'Pupils taught by Type 1 teachers in non-streamed schools generally seemed to become more motivated to do well, particularly boys of average and below average ability.'

'The data on attitude change revealed that the only children to make a significant overall shift in attitude were those in non-streamed schools taught by Type 1 teachers, and they increased their motivation to do well in school' over a three-year follow-up.

Here, then, is clear evidence of the kind of school and teachers which *together* can make a difference. But only a quarter of the children in non-streamed junior schools were taught exclusively by Type 1 teachers through their second to fourth year. The future is more encouraging as non-streaming is on the increase in both primary and secondary schools and more young teachers are Type 1.

Further encouragement comes from successful American attempts, described by Silberman in **Crisis in the Classroom**, to change teachers' attitudes in conventional elementary schools in central Harlem and in some of Philadelphia's negro slum schools. The method in both districts was for an outsider protagonist to introduce an experiment in informal yet well structured learning activity for an hour a day with special materials set up in a certain place. As the ordinary class teachers saw how children responded, they were gradually drawn in and began to modify their own approaches in the normal classroom. It may be that on the job retraining like this is more effective than conventional in-service courses.

An important feature that distinguishes today's progressive primary schools in Britain and America from those of the 1920s and 1930s is that teachers can now structure the classroom environment and the children's learning on the basis of greater knowledge about how children learn. They are also more aware of the value of good home-school relations and the effect of paren-

tal encouragement, and hence the need to inform and influence parents. Action research in EPAs, reported by Halsey, has provided some pointers for effective intervention. It is clear that schools must take initiatives in developing strategies to inform and involve parents, particularly the working class, throughout the child's school career. This was one conclusion of Wiseman's Manchester Survey of ten-year-olds in 44 schools, which included intensive study of 186 children and their parents.

International comparisons

Selection at eleven and streaming thereafter are two impediments whose abolition opens the way for developing teaching styles and curricula at secondary level whereby adolescents can be motivated to learn, as many *Forum* articles about experience in individual schools have shown. Swedish studies proved that more secondary students aspired higher, as demonstrated by their choice of courses and their tendency to stay on, in comprehensive compared with bipartite schools, and that the contrast was most significant among those from working-class or rural homes. These studies led to the reform of the Swedish school system into the universal nine-year comprehensive. This had to be followed by extensive remodelling of curricula and teaching methods, involving much individualised learning, so that Sweden could effect her commitment to non-streaming too.

The International Study of Achievement in Mathematics revealed more achieving higher scores at thirteen, more staying to the final upper secondary year and higher scores by lower social class pupils in comprehensive systems, while the top 5% of ablest mathematicians scored about the same whatever the school system. Selective systems apparently depressed attainment among lower social class pupils without raising either numbers or scores at the top. Studies in a variety of European countries have shown not only a sizeable 'wastage' or rejection of able working-class children in all selective systems, but also that opening up opportunity at one level increases demand at the next. As recently as 1971 Coleman advised OECD that abolishing streaming and selection improves equality. English experience indicates that teachers' attitudes and expectations must match the philosophy of such reforms; and French experience of introducing comprehensive

lower secondary schools is that 'opposition forces within the school system' can undermine the innovation so that the education is 'unchanged behind a "new show-window"'.

Peers, particularly the immediate peer group of the school class, become important during the secondary years. Streaming or non-streaming is consequently significant in either reinforcing or modifying expectations and normative behaviour derived from home and social class. Classroom peer group attitudes seem to coalesce as powerful forces from around the age of thirteen, so that school policy and the resultant 'school atmosphere' is critical at this stage—a point noted by Himmelweit. Positive attitudes can be cultivated where schools resist pressures to act as juvenile agents for social and occupational selection and insist that doors remain open throughout adolescence. Some of the ways this 'open access' can continue beyond sixteen were described in *Forum* vol 15 no 2, and are at the nub of current discussions about reforming our examination system.

Quantitative evidence has been the basis of the argument that 'differences in achievements have to be accounted for by factors that are endemic in the overall socio-economic structure of society', as Torsten Húsen summed it up for OECD with a European echo of the Coleman Report. But quantitative evidence reveals *correlates*: it does not thereby prove *causes* nor explain interaction. Quantitative evidence obscures human factors and variations in the *quality* of education in individual schools, and ignores the distinct experiences of individual children and classrooms within a school. Far more research is needed into these, but even now there are pointers to discriminate favourable from unfavourable features of school life.

Already it is clear that certain factors have significance for children of average and below average attainment from working-class, ethnic minority and other disadvantaged backgrounds. These factors include teachers' expectations and attitudes, school and classroom atmosphere, streaming between and within classes, curriculum structure, staff turnover and teaching styles. NFER studies have shown that at least some of these factors interact, so their effects may be cumulative or may negate one another. These factors are not evaluated in the big quantitative surveys which deduce that schools are impotent.

The case for seeking ways to improve schools has been confused by claims from an American team under Christopher Jencks 'that variations in family back-

ground, IQ genotype, exposure to schooling, and quality of schooling cannot account for most of the variation in individual or family incomes'. Publicity has been given to their finding no evidence that school reform can reduce disparity in attainment—particularly that expenditure and desegregation are ineffective. Critics say it is about numbers not children, and the calculations are unsound.

Jencks himself has not argued that there is no need to improve schools—quite the reverse. Mainly concerned about inequality in American society, he is also concerned that schools which reinforce these inequalities are unhappy places for children to be in. He has attacked the crude 'factory model' by which schools' success is measured in terms of 'input' of resources and 'output' of able students. Standardised attainment tests measure only some of the goals with which schools are concerned. So far, research indicates no conflict between these and other goals, but rather some significant coincidences.

Many schools fail to mitigate initial disadvantages, especially in verbal skills, and some even increase early differences. But some schools show they **can** make a difference—these must be the models for the rest. Their characteristics include non-streaming, teachers who expect children to succeed, a humane school and classroom atmosphere and initiatives to involve parents. In such circumstances the self-fulfilling prophecy begins to be transformed. Knowing more than we did about inadequacies of many schools and how to identify children 'at risk' highlights the need to generalise experience of successful schools.

Sources

- Barker Lunn, J C: **Streaming in the Primary School** (NFER, 1970).
- Benn, C & Simon, B: **Half Way There** (1972).
- Bowles, S in **Harvard Educational Review**, 38. 1. (1968).
- Coleman, J S: **Equality of Educational Opportunity** (1966).
- Dyer, H S in **Harvard Educational Review**, 38. 1. (1968).
- Ford, J: **Social Class and the Comprehensive School** (1969).
- Gardner, D E M: **Experiment and Tradition in Primary Schools** (1966).
- Goodacre, E J: **Teachers and their Pupils' Home Backgrounds** (NFER, 1968).
- Halsey, A H: **Educational Priority, vol 1: EPA Problems and Policies** (1972).
- Hargreaves, D H: **Social Relations in a Secondary School** (1967).
- Himmelfeit, H T in **Genetic and Environmental Factors in Human Ability** (1966).
- Husen, T: **Social Background and Educational Career** (OECD, 1972).
- Jencks, C in **Harvard Educational Review**, 43. 1. (1973).
- Katz, I in **International Journal of Psychology**, 2 (1967).
- King, R: **Values and Involvement in a Grammar School** (1969).
- Lacey, C: **Hightown Grammar** (1970).
- Partridge, J: **Life in a Secondary Modern School** (1966).
- Pettigrew, T in **Racial Isolation in the Public Schools** (1967).
- Pidgeon, D.: **Expectation and Pupil Performance** (NFER, 1970).
- Silberman, C E: **Crisis in the Classroom** (1970).
- Rist, R C in **Harvard Educational Review**, 40. 3. (1970).
- Rosenthal, R & Jacobson, L: **Pygmalion in the Classroom** (1968).
- Taylor, L C: **Resources for Learning** (1971).
- Warburton, F W in **Education and Environment** (1964) ed S Wiseman.
- Wilson, A B in **Harvard Educational Review**, 38. 1. (1968).
- First (1966) and Second (1972) Reports of the National Child Development Study and progress report in **Statistical News**, No 22 (August, 1973).
- Plowden Report: **Children and Their Primary Schools**, vols 1 & 2 (1967).
- OECD: **Educational Policy and Planning: France** (1972).
- Articles on International Study of Achievement in Mathematics reprinted in **Scientific Investigations in Comparative Education** (1969) ed M A Eckstein & H J Noah.

Schools CAN make a difference

Continued from page 35

achieved seem to make a nonsense of the very idea that schools can't make a difference.

But if they are to, then much needs changing both as regards the content and methods of education, school organisation and so on. This is the lesson of Glenys Lobban's fascinating—and horrifying—study of children's readers. The world there depicted is even more backward than real life itself. The conclusion must be that schools *can* make a difference, but only if they set out specifically and consciously to do so. Whether they succeed or not depends on the actions of every one of us.

Non-Streaming Did Make a Difference

D Thompson

Dr Thompson, who reports here on the effect of the move to non-streaming on pupils' achievement, has contributed earlier papers on this question to **Forum**. He is headmaster of The Woodlands School, Coventry.

Until recently it was generally accepted as a self-evident proposition that the school which a pupil attended played a considerable part in assisting his emotional and intellectual development, in influencing more or less strongly the development of his character and in determining his personal standards and social attitudes. Few would have doubted that the school played an important role in deciding the kind of person the child would become in adult life. More recently, however, voices have been raised in support of the assertion that the influence which schools exert on the development of children is minimal and that the experiences to which a child is subjected prior to starting school and the influences to which it is exposed between the ages of five and sixteen years, during the time it is not actually in school, play decisive roles which, by comparison, render the influence of the school of little consequence.

It is, of course, rarely possible when dealing with personality development to determine which factors are responsible for which results. The link between cause and effect becomes almost impossible to determine and it may be that the claim that schools influence the personal development of children to a marked degree may, ultimately, have to rest on a strongly held subjective feeling by parents and educationists that this is so.

There are, however, criteria by which schools are judged, which do not fall into this category and concerning which there need not be the same element of doubt, since the criteria are measurable and comparable. One of these indicators is examination results. If it could be shown, for instance, that a particular school, known to admit a sample of pupils which did not differ significantly from that admitted by other schools, produced consistently, over a period of years, examination results that were significantly better than those of other schools, then that would form a basis for stating that in respect of providing opportunities for its pupils to do well in examinations, it was obvious that the school which a pupil attended was a matter of some importance.

There are, of course, other quantifiable educational indicators of this kind which would also enable one to

form conclusions as to whether schools can make a difference. Usually, however, the data is not available and, even if it were, it would hardly be considered a legitimate procedure to effect comparisons between different schools. A more acceptable approach would be to compare the results, over a period of years, from the same school, operating under two different sets of conditions, to see if any significant differences could be found in the educational opportunities the school offered to its pupils under the two systems. This is what this article is about. It is about a school that pursued with determination a policy which did make a difference in all kinds of ways, not least of which was in the sphere of academic performance.

Between 1954 and 1961, The Woodlands School, Coventry, a ten-form entry boys comprehensive, adopted a form of organisation in which pupils, on entering the school, were allocated to work groups that were rigidly streamed on the basis of the eleven-plus results.¹

From 1962, a relaxation of streaming commenced which eventually culminated in all school subjects being taught to all pupils, in the first three years, in unstreamed forms without recourse to setting and with no attempt to separate pupils into such categories as GCE or CSE candidates or non-examinees.

Between 1968 and 1972, an investigation designed to examine the effects on certain measurable educational results of the transition from the streamed to the unstreamed form of organisation was carried out.²

Up to the mid-60s the bulk of the evidence relating to streaming and non-streaming had come from junior schools,³ largely because so few secondary schools had

¹ For more details see **Forum** Vol 7, No 3 and Vol 11, No 2.

² See PhD thesis entitled **Organisation in the Comprehensive School** by D Thompson (Leicester University, 1973).

³ See the results of the NFER's long-term investigation into the effects of streaming and non-streaming entitled **Streaming in the Primary School** by J C Barker Lunn (1970).

engaged in non-streaming experiments. There had been some experiments with classes of mixed ability in comprehensive schools but they had not gone very far and it would have been extremely difficult to find a comprehensive school in the mid-60s that had embraced non-streaming to a sufficient extent to enable a worthwhile project to be carried out into the effects of streaming and non-streaming on academic achievement.

It was against this background that the experiment which subsequently involved the teaching of all school subjects to unstreamed forms and which led to such a remarkable improvement, amongst other things, in academic results, commenced at The Woodlands School in 1962. Previous experiments, set up to evaluate the effects of streaming and non-streaming, had compared either the results from streamed schools with those from similar non-streamed schools or results from streamed classes with those from unstreamed classes within the same school. The Woodlands project differed from earlier ones in so far as it related to a school that was originally streamed and which changed gradually over a period of several years, to one that was unstreamed. It also differed from most other attempts to move from a streamed to an unstreamed form of organisation in so far as no *a priori* decisions were made concerning the adoption of new teaching methods or the large-scale modification of syllabuses. The results, therefore, enable a comparison to be made between pupils who were taught under similar systems of class teaching in streamed and unstreamed groups.

Although not all staff were originally in favour of unstreaming, the beneficial social effects soon became so apparent that the staff were unanimous in their view that it was desirable to continue. It is important to bear this in mind in view of the observations contained within the NFER's **Streaming in the Primary School** to the effect that 'the missing factor in most previous studies was the attitude of the teacher' and that this could make all the difference between success and failure in the unstreamed situation.

Although the investigation already referred to was concerned with several educational indicators, the two chosen for review in the present article are

- (1) the voluntary completion of the five-year course of studies;
- (2) examination results at 'O' level.

The results relating to examination performance are particularly important in that they provide an answer

to those who, for a number of years, have questioned the wisdom of unstreaming policies on the grounds that academic standards, in general, and those of the more able pupils, in particular, might suffer.

In considering the following results, it should be borne in mind that

- (a) the intakes of 1955-61 were rigidly streamed on entry into, at least, ten forms, the top form comprising the most able pupils and the bottom, the least able, as indicated by the eleven-plus examination results;
- (b) the intakes of 1962-64 represented a transition from streaming to non-streaming in so far as a system of 'banding' or blocks of parallel forms was utilised as follows:
 - 1962 a top block of four and a second block of three parallel forms together with three streamed bottom forms;
 - 1963 a top form, a block of five and another block of two parallel forms, together with one bottom form;
 - 1964 a block of eight parallel forms and two streamed bottom forms;
- (c) the intake of 1965 was unstreamed for the first two years;
- (d) the intakes of 1966 onwards were unstreamed for the first three years.

We may start with an analysis of pupils voluntarily completing a full five-year course of studies.

Table 1 shows that, during the seven-year period when the school was streamed (1955-1961), the proportion of each annual intake completing the full five-year course remained virtually constant—at an average of just over 37%. On the other hand the ending of rigid streaming (from the 1962 intake) was accompanied by a definite increase in the proportion staying on for the full five years: whereas in 1961 (the last intake submitted to rigid streaming) the proportion was 37.5%, from then onwards there is a consistent rise up to 64.4% in the case of the 1965 entry. Later information shows that in the case of the 1966 and 1967 entries, fully unstreamed for three years, the proportion staying on rose to 70% and 75% respectively. In other words, the transition from rigid streaming to complete non-streaming was accompanied by a doubling of the

TABLE 1
COMPLETION OF THE FIVE YEAR COURSE OF STUDIES
Percentage of each annual intake remaining at school for five years

Year	1955	56	57	58	59	60	61	62	63	64	65	Average 1955-65
%	36.7	38.0	36.8	36.5	39.8	37.8	37.5	46.4	47.8	58.7	64.4	43.2

proportion staying on within a period of only six years (1961 to 1967).

Other points relating to the staying on figures are of interest. For instance, the greatest increase in the staying on rate occurred in the case of pupils of below average VRQ (in the range 85 to 99); between 1961 and 1965 this proportion rose from 12.3% to 43.8%. However, the proportion with above average VRQs who stayed on also rose significantly; those in the range 100 to 115 from 46.1% in 1961 to 76.6% in 1965—that is, from under a half to over three-quarters of the intake. Again, with non-streaming, pupils with very low VRQs (below 85) now began to stay the full five years at school for the first time: no such pupils completed five years from the 1961 intake, but, from the unstreamed 1965 intake, 28.1% did so.¹ While, therefore, from a strictly objective—or scientific—point of view, we cannot claim that this significant increase in the proportion of pupils staying the full five years (far higher than the increase in the national average) was *due* to unstreaming—only that this phenomenon accompanied unstreaming—on a purely common sense basis it does seem probable that there was a causal connection between the two.

Further analysis can be made of the data relating to the staying-on rate of 'selective' and 'non-selective' pupils, the 'selective' being those who, under a tripartite system, would most probably have gone to the grammar school.² When the school was streamed, far more of the former stayed five years than the latter, as might be expected; in the case of the 1961 intake, for instance (the last submitted to rigid streaming),

67.4% 'selective' pupils stayed five years compared with only 22.4% 'non-selective'. In the case of the non-streamed 1965 intake, however, while the proportion of 'selective' pupils staying five years had increased to 89.3%, that of the 'non-selective' pupils had increased by two and a half times—to 54.7%. Indeed, the fifth form resulting from the last streamed intake of 1961 consisted of 60% 'selective' and 40% 'non-selective' pupils, whereas the fifth form resulting from the 1965 unstreamed intake consisted of only 39% 'selective' and as many as 61% of pupils originally classed (by the selection examination) as 'non-selective'. This seems a very striking shift.

A further set of important results can also be reported. Table 2 gives the proportion of each class staying on for five years both under the early rigid streaming system, and in the later non-streamed situation.

TABLE 2
Percentage of first year forms completing the five-year course

1961	1A	1B	1C	1D	1E	1F	1G	1H	1S	1T	Average
%	86	60	55	57	30	21	19	11	0	0	38%
1965	1T	1H	1E	1W	1O	1D	1L	1A	1N	1S	Average
%	71	65	70	72	56	57	64	71	48	70	64%

The 1961 figures show a consistent stepping down of this proportion from as many as 86% in the A stream to no children at all in the two lowest streams. In the 1965 intake non-streamed situation, however, the proportion staying on from each of the classes in which pupils were originally placed (each of them equal in terms of VRQ) is roughly constant, the average working out at 64%, though there is some variation between classes. In the early years, of course, the top streams

¹ There were 21 such pupils in the 1961 intake and 32 in the 1965 intake.

² The school admitted three forms of selective pupils and seven forms of non-selective pupils annually over the period in question. There was, however, a 'creaming off' of high ability pupils to the extent of 10% to the local direct grant schools.

contained only 'selective' pupils, and these comprised the majority of those who stayed on. With non-streaming, this possibility was opened up for all children, since doors were not closed early on, with the result that all non-streamed classes showed a high proportion completing five years.

We may now turn to examination results as a second indicator. Table 3 gives the percentage of each annual intake gaining one or more passes at 'O' level from 1955 to 1965.

figure was 52.4%.

Also the number of passes gained per pupil entered rose by the time the 1967 intake sat to 3.26 passes per pupil, compared with 2.6 passes per pupil when the school was streamed and with 3.1 passes per pupil from the 1965 intake. Again, from the 1967 intake, more pupils gained passes in four or more subjects, admitting them to the sixth form, than had done so in any previous year.

The evidence suggests, therefore, that there is an

TABLE 3
EXAMINATION RESULTS AT 'O' LEVEL¹
Percentage of each annual intake gaining one pass or more at 'O' level

Year	1955	56	57	58	59	60	61	62	63	64	65	Average 1955-65
%	26.1	31.0	22.7	19.9	22.5	23.1	23.4	31.2	34.0	43.7	47.2	28.9

From this we see that the transition to non-streaming was accompanied by a considerable increase in the proportion of pupils being successful at 'O' level—almost 50% of the 1965 intake were successful compared with under 25% from the streamed, 1961 intake. This result implies that, with the ending of streaming, a pupil's chances, on entry to the school, of gaining some success at 'O' level five years later had more than doubled, compared with those who, in the earlier period, had been placed in streamed forms.

Later information indicates that, whilst in the case of the 1966 and 1967 entries, the proportion of the original intake successful in passing one or more 'O' level subjects did not rise significantly above the 47.2% achieved by the 1965 intake, the quality of the results continued to improve. This was evidenced particularly in the number of passes expressed as a percentage of entries which, from the 1965 entry, was 63.2%, and which rose through 70% for the 1966 entry to 77.3% for the 1967 entry—figures which were well above the national average. When the school was streamed the

upper limit of around 50% of any single intake that is capable of passing one or more 'O' level subjects, irrespective of the number of pupils completing the fifth year, once this has reached a certain level.

Although it is impossible to set out the data here, it can also be reported that the improvement in performance, after streaming ended, was an all-round one—that is, it was not confined to relatively small numbers of passes being achieved by non-selective pupils who, as we have seen, did not previously enter the fifth form. The percentages of the original intakes gaining passes at all levels from one to nine subjects all increased after streaming was abandoned. Further, the quality of the passes gained improved after streaming ended, the average grade per pupil entered being almost one grade higher than in the period 1955-61. In fact, during each of the four years after streaming ended (1962-65) the average grade per pupil entered was higher than the average grade achieved in any one of the seven years when the school was streamed. This achievement is all the more remarkable as it occurred at a time when the number of pupils being entered for 'O' levels was increasing rapidly, the great majority being non-selective pupils of slightly above average VRQ on entry to the school.

There is some objective evidence indicating that the transition to non-streaming had a beneficial effect on the performance of the more able pupils. This lies in the fact that, after streaming ended, there was a con-

¹ In considering these results, it should be borne in mind that from the 1958 entry onwards all pupils entering the fifth form were entered for eight or nine examination subjects in either the GCE or CSE. For example, three CSE subjects and five or six GCE subjects, there being no restrictions on the possible variations. There were no non-examinees.

siderable increase in the probability that pupils would pass in all subjects for which they had been entered. Also in the fact that this improvement in performance was most noticeable in pupils entering for seven, eight and nine subjects. Further evidence tending to a similar conclusion—that the more able pupils, whether originally designated 'selective' or not, benefited at least as much, if not more so, than those of modest ability after streaming ended—is seen in the fact that in the period 1962-65, the percentage of the total intake passing in five or more subjects rose more than fourfold.

Many other conclusions can be adduced from the data available. Some of these may be briefly mentioned. For instance, unstreaming was accompanied by a greatly increased expectation that pupils entering the fifth form would gain some success at 'O' level. During the period 1955-61, 58.2% of fifth form pupils gained one or more passes at 'O' level; in the period 1962-65 this rose to 71.8%. One consequence of this was the doubling of the sixth form as the unstreamed intake moved up to this point, and as more pupils gained four or more passes of a quality that fitted them to tackle sixth form work. In fact, nearly 25% of the fifth form from the 1965 intake gained five or more passes compared with only 10% from the 1961 intake.

While there is a good deal of evidence to show that 'non-selective' pupils gained considerably from the policy of non-streaming, examination of the total picture indicates quite clearly that those who received most benefit were the pupils originally classed as 'selective'. This is in spite of the fact that 'non-selective' pupils from the 1961 intake obtained between them only 20.7% of all passes gained in that year, whereas four years later the 'non-selective' pupils from the unstreamed 1965 intake gained 38.5% of all subject passes. The improvement recorded by selective pupils was even greater than this since the average number of passes these pupils gained rose from 2.5 to 4.2 per pupil, compared with an increase from 1.8 to 2.2 per pupil in the case of 'non-selective' pupils. Thus it was the 'selective' pupils who most improved their pass rate after streaming was abandoned. Also the 'selective' pupils were more successful, after streaming ended, than were the 'non-selective' in passing all the subjects for which they were entered, in improving the quality of their passes as indicated by the grades achieved and in gaining larger numbers of passes at the same sitting.

Looking at the evidence as a whole, it seems clear that, generally speaking, where an improvement in examination performance is observed that is associated

with the abandonment of streaming, it is the selective pupils of higher intellectual ability who benefit more than the non-selective pupils, even when the performance of the latter group is appreciable.

Table 4 indicates the GCE success rate of each original first year form in 1961 (streamed) and 1965 (unstreamed).

TABLE 4

Percentage of first year forms eventually gaining one or more passes

1961 entry	1A	1B	1C	1D	1E	1F	1G	1H	1S	1T	Average
%	71	50	41	32	7	3	0	4	0	0	23.4
1965 entry	1T	1H	1E	1W	1O	1D	1L	1A	1N	1S	Average
%	57	50	52	48	33	43	56	55	33	44	47.2

This table exhibits a similar pattern to Table 2, concerned with staying on rates. It indicates dramatically both the effect of rigid streaming and of non-streaming on pupils' opportunities. The 1961 entry figures indicate clearly that those eventually gaining success at 'O' level five years later came from a sharply restricted group of forms, whereas, in the case of the 1965 entry, these were fairly evenly spread across each of the original unstreamed forms. One further striking fact may be mentioned. In four of the ten unstreamed forms of the 1965 intake, better average results were achieved in GCE five years later than were obtained by any of the top ('A') streams, containing selective pupils, in any of the years when the school was streamed.

The evidence from The Woodlands experiment is concerned entirely with the effects on certain educational indicators of a transition from a streamed to an unstreamed form of organisation and seems quite conclusive. The evidence indicates clearly that a non-streamed form of organisation, operated by a staff that believes in and is dedicated to the idea of non-streaming, who do not see the pupils' worth primarily in terms of academic achievement in school subjects in the early years and yet who retain the basic techniques of class teaching as their principal method of instruction, represents a more favourable structure for the vast majority of pupils, including the so-called able ones, than does a system based on streaming or even on banding.

Schools which offer opportunities for success can make a difference.

Language, Schools and the Working Class

Brian Harrison

Brian Harrison is a lecturer in education at the University of Leicester. Earlier he taught English in Morocco and India, latterly as a British Council English Language Officer. His concern with linguistics dates from this period. He has contributed a volume to the new 'Explorations in Language' series, published by Edward Arnold.

The notion of working-class 'deprivation' is now an educational commonplace. The child-rearing habits of the working class are held to be defective in the light of future educational demands, preventing the development of cognitive skills and capacity for generalisation, providing an insufficient springboard for dealing profitably with the so-called high culture of the traditional secondary school. The villain held up for censure is the working-class mother: as well as feeding her children unrelievedly on fish and chips and candy floss, and practising immediate rather than deferred gratification, she is held also to give them an insufficient linguistic diet, not to talk to them sufficiently or in the right way.

If one accepts this at face value, and I do not for one moment suggest that one should, then one can have two sets of strategies for the education of the working class. Either one regards the deficit as unsurmountable, not subject to treatment, or one goes in for remedial programmes. The first position is right-wing, and one can happily send working-class children to secondary modern schools and make nineteenth century noises about hewers of wood and drawers of water. The second is reformist, and one would want to look at environments for learning. (I should perhaps point out at this stage that my own origins are impeccably proletarian, that I am not linguistically deprived, and that I do not consider myself in statistical terms as a sub-marginal return.)

A third possibility, of course, is to look at the evidence for deprivation, and examine the theory; in regard to language acquisition this is what I propose to do in the rest of this article. Let me first, however, make a point about the development of language skills in the schools. In the normal teacher-dominated formal lesson, space is filled up by two-thirds of language and one-third of silence. Of the language, two-thirds is teacher language and one-third pupil language. The average pupil in a class of thirty in our notional lesson gets very little chance to develop his powers of language: the setting could not have been better designed to prevent their flowering. Language development programmes *pre-suppose* non-didactic teaching styles.

In considering the question of language and conceptualisation it is important to say initially that the notion that there is such a thing as a defective language or dialect strikes linguists as so ludicrous that they have generally not made their condemnation of the idea explicit. All languages and dialects possess the same meaning potential; one can do anything with any language given enough time. In the context of education, however, the important thing is not perhaps what linguists hold to be true, but what teachers believe. In his book, *The Long Revolution*, Raymond Williams speaks of the vulgar insolence of those who have informed working-class children that they do not speak their own language properly, whatever that means, and the harm this does to the children's self-image. Disparaging working-class language has long been a favourite middle-class sport, and we are in the presence, as so often, of a stereotype of working-class behaviour.

In talking about language use, those linguists who subscribe to the currently dominant viewpoint, that associated with Chomsky, make a distinction between *competence* and *performance*. Competence refers to the ability to produce language, performance to the bits of language actually produced. The first underlies the second. It is assumed that children internalise the rules of their language whilst learning it, and that what is internalised forms the basis for an understanding of grammatical and semantic relationships. Any performance may or may not be a deviation from competence, deviations to be accounted for by such factors as fatigue, memory lapse, unfamiliar role, threatening social setting and so on. It is the researcher's task to determine which performances are deviant and which truly represent an individual's linguistic skill.

It should be pointed out that the competence/performance distinction is not universally accepted; for one thing, the neurological evidence for competence is rather hard to come by. Whether or not one accepts, however, the notion of competence as an idealisation away from or beneath the 'real' world of performance, but which nonetheless accounts for it, we are all concerned as teachers with the nature and scope of this 'real', particularly if assessments of potential, linguistic

or intellectual or both, are going to be made from it. Whilst waiting for the dust raised by what is in part a demarcation dispute between psychologists and linguists to settle, can one at least hope that generalisations are not based on **one** conversation gathered in **one** set of atypical circumstances at **one** point in time, let us say working- and middle-class children brought into a laboratory, shown a series of pictures about balls and broken windows, and asked to say what they mean. Intellectual humility would demand a little more than this.

As an archetype for this sort of essentially banal activity let me offer the following, recorded by one of my students in a school for the allegedly educationally sub-normal:

TEACHER And what is the Easter Bunny going to bring for people who are good, Tom?

TOM (Silence).

TEACHER What have you made a little paper basket for today?

TOM (Silence).

TEACHER (with a bit more insistence) What have we been drawing pictures of all week?

TOM (Silence).

TEACHER (to student) Well, would you believe it? (to Tom) Come on Tom, what are you going to put in your basket?

TOM (Silence).
(By now the answer Tom required was being given him in all four corners of the room.)

It would have been easy to conclude from this not only that Tom's vocabulary did not contain the word 'egg', but also that he was suffering from a massive verbal deficit. Neither in fact was the case: it became obvious to my student from other contexts, once she had established a relationship with him, that although Tom had problems, his speech skills at least were about normal for a boy of his age. What I am suggesting is that some sociolinguistic studies rest on bases almost as fragile is this conversation.

In his work on language and social class, Basil Bernstein rejects the Chomskyan competence/performance distinction not because of its inadequacy *per se*, but because of its unsuitability for his kind of work. He tells us (*Class, Codes and Control*, Vol 1, postscript

to the Paladin edition, 1973) that he wished to concentrate on the different *functions* of language and the social settings in which language acts take place. The model of linguistic analysis associated with Chomsky, commonly called generative-transformational grammar, is nonetheless criticised for its semantic inadequacies.

The first point is legitimate but convenient; legitimate in that Chomskyan theory does not have a social dimension, convenient in that it allows sociologists to make hypotheses about linguistic potential on the basis of interviews or the answers to questionnaires. The second point is true but not the whole truth; *all* semantic theories that I know of deal inadequately with the interchange of meaning in the hurly-burly of the real language world. Semanticists tend to deal with manageable linguistic sub-systems-kinship terms, greetings and farewells, prohibitions and so on, where words and meanings are in easily identifiable relationships. The model which Bernstein uses, Halliday's semantic network analysis, is criticised by its own author on these same grounds. (A semantic network is supposed to specify a set of semantic options, to relate at one level to behaviour and at another to linguistic categories).

'We would not be able to construct a socio-semantic network for highly intellectual abstract discourse . . . Of the total amount of speech by educated adults in a complex society, only a small proportion would be accessible to this approach' (M A K Halliday, *Towards a Sociological Semantics*).

I would myself add 'not only educated adults'. Semantics is a study at the pre-Copernican stage.

Halliday goes on to argue, however, that the language of young children, at a stage when they are learning to organise themselves and their feelings in relation to the external world, is susceptible to this approach. Children's language is relatable to a fairly simple set of functions (getting things done, reacting with other people and so on).

Social class and educability

In order to establish links between social class origins and educability therefore, one has to prove that deficiencies in this early kind of language experience are firstly linked to social class and secondly lead inevitably to lack of skill in language of a more symbolic or

generalised kind. I have already indicated that because of the scantiness of the available data, research design and problems of analysis, no answer to the first question can yet be regarded as proven, but let us further consider the central problem itself.

The name associated with this kind of enquiry is, of course, that of Bernstein, who tries to link in a chain of causality, social class, family type and upbringing, and access to the language of education and the abstract orders on which it is held to rest. Bernstein is much quoted and much misinterpreted, in part because his prose style is not a model of transparency and in part because many educationalists seem unable to distinguish between an idealisation and what they see as happening on their own particular patch of territory. One ought at least to pay tribute to Bernstein for having initiated and formulated the debate. In England at least most of those who write about language and social class are parasites on Bernstein's body, if the expression is not considered indecent by all concerned.

The outline of the theory, or dilute versions of it, is well-known. Those who wish to read a critique might do worse than read Bernstein's own (Bernstein, *op cit*). This is a remarkably honest document. At this point in time in the development of the theory much seems to hang on the interpretation of the word 'code'. Working-class speakers are supposed to be more likely to have access only to a 'restricted' code, middle-class speakers to an elaborated code as well. Possession of the latter is held to be an important factor in educational success. Codes are products of the social strata in which they operate; middle-class families are said to be more analytic, working-class families more empathic. Leaving aside the question of the crudeness of these bipolar divisions, we now know, from Bernstein's own writings, what the term code does not mean:

'I have never asserted that differences between codes have any basis in a speaker's tacit understanding of the linguistic rule system, that non-standard forms of speech have, in themselves, any necessary conceptual consequences, or that reasoning is only possible in an elaborated code' (1973).

Code now seems to relate to semantic organising principles underlying language behaviour, the question of access to a particular code deriving from early experience and socialisation. In an article in *Educational Review* in 1969, Coulthard had already noted the gradual abandoning of strict linguistic criteria. He went on to say:

'The theory now appears to have moved into a position where it is unprovable . . . The sociological and psychological statements are highly speculative. The theory now has three binary divisions, producing eight codes, but there is no reason why it should stop here. The reader could soon be struggling to separate an Elaborated Code object (means) non-striving managerial, from a Restricted Code subject (ends) upward-striving clerical.'

Evidence from the deaf

As far as language and early cognitive development are concerned we have, fortunately for us, but perhaps unfortunately for the children concerned, an invaluable control group, the deaf. Deaf children are submitted to no early language experience, or very little. Their condition tends to be diagnosed at a time when other children have already had access to and have built on primary linguistic data, whether gathered at their mothers' knee or elsewhere. If hypotheses about the critical importance of the early linguistic environment for subsequent cognitive development are true, then wholly or even partially deaf children ought to be severely cognitively impaired, whatever their social class. This does not, however, appear to be so: deaf children are not very different in this respect from those who hear normally. This is not to argue that (natural) language is not a conceptual aid, merely that it can be done without. In the *Psychological Bulletin* for 1964, Hans Furth argued as follows:

'By generalising the studies summarised above (on deaf children) and applying them to a theoretical position on the influence of language on intellectual development, the following is suggested: (a) Language does not influence intellectual development in any direct, general, or decisive way. (b) The influence of language may be indirect or specific and may accelerate intellectual development, by providing the opportunity for additional experience . . .

From this position it should follow that persons deficient in linguistic experience or skill (a) are not permanently or generally retarded in intellectual ability, but (b) may be temporarily retarded during their developmental phase because of lack of sufficient general experience.'

But perhaps some would want to argue that as an intellectual formant, working-class language is worse than no language at all?

Schools and Science Achievement

Guy Neave

Guy Neave is a member of the Department of Educational Sociology at the University of Edinburgh. He examines here an important international achievement study.

In the middle of summer 1973, the **International Association for the Evaluation of Educational Achievement** announced the results of its science achievement survey. Much of its impact was blunted, however, by administrative ineptitude and bitter recriminations from the press for not releasing the details when promised. Such shortcomings did not, for all that, disguise the sheer ambition—not to mention the expense—of the undertaking. It stands as one of the most massive exercises in the field of educational research yet launched. In all, the survey covered nineteen countries, 258,000 students, 50,000 teachers and 9,700 schools, and took six years to complete. Yet, it is only one in a series which, eventually, will deal with all the principal subject areas in secondary education, with the exception of classical languages.

The purpose of the survey was, firstly, to devise instruments for measuring science achievement upon the basis of a systematic study of the curricula for the countries taking part. Secondly, to use these instruments to draw up a set of achievement profiles for each country. Thirdly, to relate the profile to specified factors at work inside the school and in the home that influence science performance, as well as taking into account the national setting in which science education took place for each nation.

The countries taking part in the enquiry ranged from Sweden, the United States, England and Scotland to semi-developed areas like India, Iran, Thailand and Chile. Following the pattern laid down in the International Survey of Mathematics Achievement, the student population was divided into three groups. The first was composed of 10-year-olds, the second of 14-year-olds with a third consisting of students at the terminal stage of their secondary education aged between 17 and 19. Thus, it was possible to see to what extent science teaching was effective over a period of time, as well as examining some of the differences in achievement and factors influencing it at various stages of a pupil's career.

Specialisation differences

On the face of things, a simple task. But countries vary considerably in their patterns of science education. Some begin specialisation early, others later. Some, as in the case of the United States, Hungary and Japan, introduce science as part of formal education at the age of six. Others, for example, England, Sweden and Western Germany, only begin teaching science at the age of 9, 10 and 12 years respectively. In addition, there is a distinction between countries that regard science as a study for specialists, hiving off the 'scientist' from the future 'humanities' student around the age of 16, whilst others regard science as part of a general education to be taken by all students, irrespective of future career. One of the consequences of specialisation is, of course, to reduce the proportion of 18-year-olds on science courses. The greater the degree of specialisation, the lower the proportion of 18-year-olds following science. England has the lowest proportion of science students at this stage—41%, compared with 91% for the French-speaking parts of Belgium and 82% in New Zealand.

Clearly, there is great variety in the ways which different countries cope with the problem of specialisation as against education on a broad general basis. Nevertheless, it is probably correct to speak of a convergence in science teaching methods, as also in the attempt to update the science curriculum. Much of this has been influenced by developments that took place in the United States following upon the Sputnik scare of 1958. But it appears that developments have taken two different courses. Innovation in the science curriculum has, the survey suggests, been a matter of particular concern to English-speaking countries; but less so for Continental countries. Certainly, a common language helps the quick dissemination of reform and experiment, but the different paths pursued by the English-speaking on the one hand and Continental countries on the other are not just a matter of shared

language. The difference lies also in the question of priorities. One of the reasons put forward by the survey to explain these differences is that European countries are concerned more with the problems associated with the reform of secondary education in general and with those created by the move towards a comprehensive pattern in particular, than with science education on its own. Since existing science programmes are thought to be both soundly based as well as academically oriented, the main concern is less with developing new science curricula than seeking to develop existing curricula in response to the increasing numbers remaining in school after the leaving age. In other words, whilst the English-speaking countries, for one reason or another, are engaged in the problem of curriculum innovation, the Continental areas are engaged in curriculum adaptation.

The difference between the two schools of thought provides a useful perspective to the question of secondary reorganisation in Britain. For it suggests that curriculum innovation here is not primarily connected with the reform of secondary education. Rather the contrary. If one examines most of the proposals for examination reform these are less concerned with keeping students' options open than with ensuring that the 'high fliers' at least do a modicum of science—or, alternatively, of ensuring that the content of courses to be taken by the able student is 'updated'. In short, as many contributors to *Forum* have pointed out over the past ten years or so, the fundamental bi-partite mentality has merely shifted ground from concern with the structure of secondary education to take firmer root in the controlling heights of the education system, namely, the curriculum and the examination structure.

The international backdrop

The value of the IEA's enquiry is not merely that it provides an international backdrop against which to compare developments in England and Scotland with those taking place abroad, but that it does so on a scale that makes its findings all the more reliable. The main findings can be grouped under three heads: firstly, those relating to education systems—for example, selective or non-selective intake at secondary level; secondly, factors operating inside schools that contribute to high science achievement; thirdly, factors related to conditions in the home and to other student-based variables.

Perhaps the most important general finding concerns the effects of holding power upon science performance. It is obvious that where schools select by 'ability' those students who will continue their education to 18—it is these students who will show a higher score in science achievement. This is, after all, the rationale of selection. By the same token, schools that admit all children up to terminal level—that is up to 18 years of age—will show a greater spread of ability than their selective equivalents. This fact has, of course, been regularly exhorted to support selection in the name of 'preserving standards'. What it means, however, is that school systems with a high staying on rate are to some extent penalised in a study of this kind.

In order to examine the effect of high staying on rates upon the performance of able students, an international scale of achievement was drawn up. The standard of achievement was defined as the score obtained in the tests by students from the top 5%, 10%, 15%, 25%, 50% and 75% in each of the participating countries. The scoring system was then calculated by averaging the mean and standard deviations of the scores obtained at each of the percentile points by students in the developed countries only. As can be seen in Table 1, for instance, the international standard score for the top 75% was 13.1. At the other end of the scale, the average score for the top 5% was 43.3. The next stage was to calculate the total percentage of the age group reaching the various levels on the international achievement scale. From the table below it will be seen in the case of England, for example, that of all 18-year-olds still in school, 16% obtained scores equal to the top 75% of students in the investigation.

Table 1

Students reaching given International Standards as percentages of the whole age group (at 18 years)

	top 75%	50%	25%	15%	10%	5%
Australia	25%	19%	11%	7%	5%	2%
England	16%	11%	6%	4%	3%	2%
West Germany	9%	7%	4%	2%	1%	1%
France	21%	12%	4%	1%	1%	0%
Netherlands	10%	7%	4%	3%	2%	1%
Scotland	13%	9%	6%	4%	3%	2%
Sweden	32%	19%	9%	5%	3%	2%
US	36%	18%	6%	3%	2%	1%
New Zealand	12%	10%	7%	5%	4%	3%
International scores	13.1	20.6	29.5	34.8	38.7	43.3

If we examine the proportion of the whole age group gaining a score of 13.1 in the tests, we find the United States and Sweden have 36% and 32% of their 18-year-olds reaching this level. By contrast, West Germany, the Netherlands and New Zealand only 9%, 10% and 12% respectively reach that score. This latter group of countries has a particularly low staying on rate—9% for West Germany, 13% for the Netherlands and New Zealand, whereas 75% and 45% of 18-year-olds remain in schools in the US and Sweden.

The results are significant from several points of view. Firstly, because the highest proportion of the age group to reach the top 75% cut off point is to be found in those countries where comprehensive education has been established the longest in the West: the United States and Sweden. Secondly, the proportion of students in the top 5% and above does not appear to be affected by higher staying on rates. And, thirdly, because those countries with non-selective schools appear to increase the numbers of students receiving science education to an advanced standard. The best students do as well, or nearly as well, in non-selective school systems as in systems that are highly selective—with this additional, but most important advantage, that non-selective systems show far less social class bias in the type of student admitted to the upper levels.

The school factor

If such are the effects of different education systems upon science achievement, what are the factors that affect it at the individual school level? Research both in this country and in the United States, principally the **Plowden Report** and work carried out under the **Project Talent** programme, has suggested that by comparison with the home, the influence of the school is small. Science achievement, however, might reasonably be expected to be more greatly affected by school factors than, for example, reading. Much of the evidence on school influence is what one might safely consign to the realms of the obvious. Science achievement was found to be positively related to the level of the class, to the students having regular science lessons, to the amount of time spent studying science and whether or not the student has studied science before. Frankly, what one would expect. But, nevertheless, in face of the belief, popular in many corners of the education world, that schools make little effective difference to learning, a salutary reminder that they do. Differences

in learning conditions between schools in fact accounted for between 15% and 17% of the variance.

There were other variables, related mainly to the conditions of teaching and the school structure, that produced interesting results. Since these are of considerable practical value, it is worthwhile enlarging on them. The science achievement of 10-year-olds appears to be enhanced when pupils are allowed to take part in observations and experiments. On the other side, however, the use of more informal teaching methods—unstructured learning in which the child designs or creates his own experiments—correlates with a lower performance. For 14-year-olds, higher scores in science tend to correlate with the degree to which students regard their school as flexible. Even with other variables taken into account, flexible schools achieved better results, particularly in the case of England, West Germany, New Zealand and the United States. This should come as a not inconsiderable encouragement to teachers seeking to introduce a 'flexible learning climate' into British secondary education. In addition, at the 18-year-old level, student performance was higher in schools provided with laboratory assistants for science teaching. In some countries, the United States, Chile and New Zealand, size of school appeared to influence student attainment. The larger the school the higher the student score in science tests. Unfortunately, the evidence is not conclusive enough to enable us to come down in favour of the large school. It could well be that, effectively, the question of size hides a far more potent influence—the locality of the school—whether in town or countryside.

Amongst the student based variables the most powerful single factor discriminating between science achievement was the sex of the student. The gap between girls and boys in science performance widened as they moved through the education system. Generally, girls were outshone by the boys. This was particularly noticeable amongst Scottish 18-year-olds. The disparity between boys and girls is, however, less marked in mixed schools. Comparing the achievement of pupils in single sex schools between the ages of 10 and 14, it was found that boys tended to outstrip girls to a far greater degree than students from mixed sex schools. Whilst the phenomenon has received extensive study in this country and found to be related to inadequate science provision in girls' schools, the IEA study extended the problem further. Science achievement, it found, was closely related to 'the male influence'—to

either a preponderance of boys over girls in mixed schools or, perhaps more significant, to a high ratio of male science teachers.

Home background, as expected, was the most important compound variable. At the 14-year-old level it accounted for 37% of the variance. Five variables were found to correlate highly with science attainment: father's occupation, father's education, mother's education, the use of a dictionary and the number of books in the home. Family size did not so correlate—indeed, the larger the family, the lower the student's performance.

The importance of the IEA survey generally speaking is that it reveals how far problems and influences at work in one country are similar to those in another. The real issue, if not the crux point, lies in the solutions adopted by different systems of education. Whether the findings will persuade any of the participating governments to model their systems on those successful in both levels of attainment and in bringing forward large numbers of students to an advanced level, is a different matter.

Selection and manpower planning

Nevertheless, whatever the outcome, if any, in terms of policy recommendations, it is clear that schools have a considerable effect upon science attainment. The main question that confronts us now is 'What type of school?', or even 'What type of education system?' The fact that the achievement in science of able chil-

dren is unaffected by large numbers of children remaining in school up to 18 years of age, would appear to offer a challenge to all school systems which continue to justify selection on the grounds of preserving the standards of the most able. In face of the hearty gut-reaction of men like Admiral Rickover in the United States and Lord James in this country, both of whom called for more selection to meet the needs of national and scientific manpower demands, we have convincing proof to the contrary. High selection, even on the basis of their own criteria, merely restricts the reservoir of potential scientists and technologists. In the long run, more important by far, is the proportion of children who remain in school to reach a higher level of scientific achievement and scientific education.

What one does not know is whether selection on scientific need was an argument put forward in the interests of manpower planning, or whether manpower requirements were simply another facet of the battle to maintain selection—a novel aspect to an old controversy. Either way, we shall soon find out. For if, in truth, scientific needs do figure paramount in the minds of all who claimed selection was a necessary concomitant to meet them, then the evidence of this report would provide justification for changing as rapidly as possible to a school which encourages staying on and which is based as little as possible upon the selective principle. Perhaps we will now see a Science Lobby in action on behalf of comprehensive education. On the other hand, if manpower requirements were merely a cynical means of continuing an ideological principle, the education world, like recruits on the parade ground, will be told 'As you were'.

Presentation of Sex-Roles in British Reading Schemes

Glenys Lobban

Glenys Lobban teaches at an EPA junior school in Islington. This article is based on an extended enquiry undertaken into children's readers.

The major premise underlying the current debate about class and race bias in reading schemes is that the content of the schemes influences children's attitudes to the world and to themselves. Reading schemes are presumed to be particularly influential because they are usually the child's first introduction to the written word and they are presented within a context of authority, the classroom, and most children read them. They are hence presumed to convey official approval of attitudes the child will have already learned in the pre-school years from parents, the media and other persons in the society. Current knowledge suggests that children's and particularly their first readers do influence children's attitudes. They do this by presenting models like themselves for the children to identify with and emulate. In addition they present an official view of the real world and 'proper' attitudes.

It is now generally agreed that reading schemes such as the *Ladybird* scheme, which show a white middle-class world peopled with daddies in suits, and mummies in frilly aprons, who take tea on the lawns in front of their detached houses, are likely to be irrelevant and harmful for urban working-class and black children. They do not provide them with models like themselves, they implicitly, if not explicitly, denigrate these children's culture and imply that what is real and proper is also white and middle class. If this argument is accepted for race and class bias in reading schemes then it must equally apply to another type of inequality within our society, namely sexual inequality.

Ours is a patriarchal society where females are economically and legally discriminated against, where males control all the major social institutions, and where two distinct sex-roles, the 'feminine'-passive and the 'masculine'-active, exist. As nobody has proved any genetic difference between females and males other than those related to reproduction, we must conclude that the sex differences in temperament, interests, abilities and goals, are the results of socialisation. If we assume that despite class and race discrimination in our society, reading schemes should not mirror this and denigrate these groups, then we should also demand

that such schemes do not mirror male-dominated sex-roles and denigrate females.

To my knowledge few people have extended the argument in this way, and indeed no broad-ranging study of the way sex-roles are presented in British reading schemes even exists. This article will describe a preliminary study on sex-role content in readers which I undertook to begin to remedy this lack of information.

The sex-role content of six popular British reading schemes was coded. I chose two schemes published before 1960 ('Janet and John' and 'Happy Venture'), two published in the 60s ('Ready to Read' and 'Ladybird'), and two recent schemes ('Nipper' and 'Break-through to Literacy') which are designed specifically for urban children. I coded the content of 225 stories in all. 179 of these had people as their central characters and I listed the toys and pets, activities and adult roles these showed for each sex and both the sexes. Table I gives a summary of these results. It lists the toys and pets, activities and adult roles for each and both of the sexes that figured in three or more of the six reading schemes. In all cases single sex activities are those which figured as single sex in five of the schemes and in some of the readers in the remaining scheme.

A glance at Table I shows that the schemes rigidly divided the sphere of people's activity into two compartments, 'masculine' and 'feminine' with very few common characteristics. The number of 'masculine' options exceeded the number of 'feminine' ones in every category and they tended to be more active and instrumental and to relate more to the outside world and the outdoors than the 'feminine' options which revolved almost entirely around domestic roles. Only 35 of the 179 stories I coded had heroines, while 71 had heroes. The heroines were seldom being successful in non-'feminine' spheres, while the heroes were frequently brave and adventurous. In the 'Nipper' scheme, for example, a heroine who ran away got lost, caught the wrong tube and found herself back home and gave up, whereas boys who went off on their own frequently

found adventure. In the remaining 73 stories there were female and male central characters but it was almost always a boy who took the lead in all non-domestic activities and let the girl help or watch. In the 'Janet and John' scheme, for example, while both children had dogs, Janet's was a puppy while John had a big dog. Boys were more frequently responsible for the care of the pets, and owned larger versions of a common toy such as a boat, and usually did better at common activities; eg, the boy reached the top of the tree while sister sat on a lower branch. In the classroom situation both sexes were equally good at reading and writing, but they were frequently shown with toys or apparatus conventionally appropriate to their sex. Frequently in situations where the children participated equally, their parents played out conventional roles. When both sexes made or built anything the boy usually did so more or excelled and Dad was the instructor unless they were learning to make cakes. Mum was never shown teaching them to build anything or to play sport.

It is illuminating to contrast the female and male worlds the schemes showed. The female world was almost entirely oriented around domestic activity and childcare. The message that the schemes conveyed was that a woman's place is in the home and that little girls should spend their time learning 'feminine' skills such as cooking and childcare. It is significant that the only new skill learned by girls in three or more of the schemes was taking care of a younger sibling. The adult models available were all situated in the home and shown doing domestic activity. The 'Nipper' scheme was the only one which showed working mothers and this was for a minority of the mothers shown. The fact is that the majority of women in Britain are in paid employment outside the home and many of them are neither shop assistants nor teachers (the only both-sex jobs in the schemes). This makes the schemes' relegation of women to the home even more invidious. The only two girls' activities that allowed physical activity were skipping and hopping. Neither of these develop group co-operation nor the varied motor skills that the range of boys' activities and games offered.

The male world the schemes described did not include toys or activities that allowed expressive or nurturant behaviour. Boys' toys and activities were such as to allow the learning of independence and a variety of instrumental and motor skills. The boys' world was oriented outside the home and their toys and their adult models suggested a variety of future

occupational goals. Boys, unlike girls, spent time watching adult males, who weren't relatives, performing their occupational roles. The idea that it was the boys who would have jobs was often explicitly stated. While girls were told they'd be like Mum or voiced such ideas, the boys expressed the desire to be train-drivers and the like. In only one of the 'Nipper' readers was a jobless father shown, and this dad was just temporarily out of work, while virtually all mums were jobless permanently. Thus, while the scope of adult male roles was somewhat limited, the schemes clearly conveyed the idea that it was males who had jobs, and who were responsible for the maintenance of all aspects of the 'real' world except for childcare and cooking.

The schemes also showed the interaction within the family in rigidly traditional terms. 'Nipper' was the only scheme which showed female single parent families and none of the schemes showed male single parent units. None of the schemes showed Dad doing housework or cooking anything other than a cup of tea. (The one exception was in 'Ready to Read' when Mum was in hospital having a baby.) Dad was always the one who drove 'his' car (only one reader in one scheme showed a woman driver), his authority was ultimate and he usually initiated and directed all family activities. All the schemes abounded in pictures of Dad reading the paper or watching television, while Mum bustled about preparing and serving food, and washing up, often with the help of daughter. Once again, as in the case of female employment, the schemes' version of the family was even more rigidly traditional than current practice. Many British women drive cars and do handiwork, and in many homes cooking and cleaning are tasks which are shared by the family, but none of this was reflected in the schemes.

In summary the reading schemes showed a 'real' world peopled by women and girls who were almost solely involved with domestic activity and whom the adventurous and innovative males might occasionally allow into their world (the rest of human activity and achievement) in a helpmate capacity. The world they depicted was not only sexist, it was more sexist than present reality, and in many ways totally foreign to the majority of children, who do have working Mums, and at least some experience of cross sex activities.

The question that now arises concerns the impact of these readers on the attitudes of girls and boys to themselves and the world. If, as research suggests, characters like themselves suggest new modes of behaviour for

TABLE I**The sex-roles that occurred in three or more of the six schemes coded**

THE SEX FOR WHICH THE ROLE WAS PRESCRIBED	THE CONTENT OF THE CHILDREN'S ROLES				THE ADULT ROLES PRESENTED
	TOYS AND PETS	ACTIVITIES	TAKING THE LEAD IN BOTH SEX ACTIVITIES	LEARNING A NEW SKILL	
GIRLS ONLY	1. Doll 2. Skipping rope 3. Doll's pram	1. Preparing the tea 2. Playing with dolls 3. Taking care of younger siblings	1. Hopping 2. Shopping with parents 3. Skipping	1. Taking care of younger siblings	1. Mother 2. Aunt 3. Grandmother
BOYS ONLY	1. Car 2. Train 3. Aeroplane 4. Boat 5. Football	1. Playing with cars 2. Playing with trains 3. Playing football 4. Lifting or pulling heavy objects 5. Playing cricket 6. Watching adult males in occupational roles 7. Heavy gardening	1. Going exploring alone 2. Climbing trees 3. Building things 4. Taking care of pets 5. Sailing boats 6. Flying kites 7. Washing and polishing Dad's car	1. Taking care of pets 2. Making/Building 3. Saving/Rescuing people or pets 4. Playing sports	1. Father 2. Uncle 3. Grandfather 4. Postman 5. Farmer 6. Fisherman 7. Shop or business owner 8. Policeman 9. Builder 10. Bus driver 11. Bus conductor 12. Train driver 13. Railway porter
BOTH SEXES	1. Book 2. Ball 3. Paints 4. Bucket and spade 5. Dog 6. Cat 7. Shop	1. Playing with pets 2. Writing 3. Reading 4. Going to the seaside 5. Going on a family outing	—	—	1. Teacher 2. Shop assistant

children and define what they should do and want, then the models of their own sex available to the readers could only serve to reinforce the patriarchal sex-roles the children have already learned. The present policy in primary schools (see the Plowden Report) is for all the pupils to do traditionally one sex activities like cooking and metalwork. The content of the reading schemes is opposite to this policy, and might well neutralise these non-sextyped experiences, or convince the children that experiences in school are unrelated to the 'real' world outside. The schemes, like the rest of children's and adults' literature (see Millett, 1970), concentrate on the exploits of males. The girls who read them have already been schooled to believe, as our society does, that males are superior to females and better at everything other than domestic work, and the stories in the schemes cannot but reinforce the damage that our society does to girls' self-esteem. The total lack of female characters who are successful in non-'feminine' activities and jobs and who are independent, ensures that girls with these aspirations will receive no encouragement. In the same way, boys who feel the need to express gentleness and nurturance will find no male models to emulate. In short, these schemes in no way question the correctness of a society which deprives both sexes of full expression of their capabilities, and, in fact, they endorse a set of sex-roles that are even more rigid than our present role division.

One of the arguments that might be given to justify male bias in reading schemes is that boys have more reading problems. Certainly girls learn to read in spite of the male bias in readers but at what price to their self attitudes? If the primers children were given paid them the compliment of being intelligent beings able to comprehend complexity and depicted a world real

to the majority of children (with girls who were tough, children of varied colour and nationalities, boys who cried, motherless or fatherless families, working parents, family fights, violence, television and other phenomena familiar to them) they would involve all the children. If we as educationalists care about the full development of each individual child it is time we became fully aware of how materials such as reading schemes denigrate females as well as other groups. It is time we acknowledged and attempted to change this sexist aspect of their content, and of our society, along with the class and race inequalities.

References

1. Reading Schemes used

- a. **Breakthrough to Literacy.** D Mackay, B Thompson, and P Schaub. London: Longmans, for the Schools Council, 1970.
- b. **Happy Venture Reader.** F J Schonell and I Sarjeant. London: Oliver & Boyd, 1958.
- c. **Janet and John.** M O'Donnell and R Munro. Herts: James Nisbet & Co, 1950.
- d. **Ladybird Key Words Reading Scheme.** W Murray. Loughborough: Wills & Hepworth Ltd, 1964.
- e. **Nipper.** London: Macmillan Ltd, 1968.
- f. **Ready to Read.** M Simpson. London: Methuen, 1964.

2. References cited in text

- a. Millett, K. **Sexual Politics.** New York: Doubleday & Co Inc, 1970.
- b. Plowden Report. **Children and their Primary Schools.** London: HMSO, 1963.

Prediction, Selection, Description and Choice

J F Eggleston

In this article, Professor Eggleston, of the University of Nottingham School of Education, puts forward some relatively novel ideas about the nature and purpose of tests and examinations.

'As testing and other forms of evaluation are commonly used in schools, they contribute little to the improvement of teaching and learning, and they rarely serve to ensure that all (or almost all) learn what the school system regards as the important tasks and goals of the educational process.' (From Bloom, Hastings, and Madaus, *A Handbook of Formative and Summative Evaluation of Student Learning*. New York 1971.)

We might also add to Bloom's serious indictment of testing and examinations, that they also rarely serve to provide adequate descriptions of attainment which facilitate either selection by agencies of employment or further education, or, more importantly, informed choice by pupils. Despite these widely held reservations the examination system in England continues to be subject to chronic expansion. Although we might be encouraged by the recent evolution of diversified procedures potentially capable of assessing a more comprehensive array of attainments, we must admit that save for ameliorating the backwash effect of conventional examination little has changed. The difficulty seems to be the widely held assumption that measures of attainment can only discriminate between people in a crude, one-dimensional way. Where test technology achieves its most explicit formulation—in the construction and analysis of objective tests—this process of discriminating between pupils on one-dimension reaches peak efficiency.

The test constructor will start with the laudable aims of sampling a wide range of content and a spectrum of intellectual skills. But the analytical procedures by which he selects items for the final version of his test are designed to achieve maximum discrimination between candidates along the single dimension of whatever the test is supposed to measure. Items which most or all candidates answer correctly are removed from the test; items which few or no candidates answer

correctly are similarly excluded. No matter how valuable it might be to know where learning has been a near total success or a near disaster, such test items cannot contribute to the process of discrimination, so they do not make the test. Those items which pass the first sieve are now examined to determine that they discriminate in the right direction. The right direction is decided by assuming that all the items contribute to a measure of attainment which is thought of as though it were a unitary trait, a single homogeneous entity. Then, if any given item is more likely to be answered correctly by those candidates whose scores on all items in the test are below average, the item is eliminated. It is discriminating in the 'wrong' direction; against those whose performance in the whole test is 'good'.

While such procedures are defensible in such polished psychometrics as aptitude tests and intelligence tests, their use at least in its crudest form in attainment testing is dubious. In the case of intelligence testing there is evidence which suggests that assumptions of homogeneity between items and even between tests may be justified. Aptitude tests have to be designed so as to maximise the variation of scores in order that their ability to predict can be measured. Attainment tests are a different 'kettle of fish'. Assumptions that the components of what might constitute attainment in physics or history correlate positively and highly, may not be correct.

In a CSE trial examination in physics it was decided to try to produce four sub-tests, each designed to measure particular attainments. One sub-test was designed to measure the pupils' ability to apply facts and principles to problem solving, another to test their observational skills, a third to find out how well they could organise data (in tabulations, graphs, histograms, etc) and finally a test of inferential skill. We were able to show that items within each sub-test made substantially the same sort of demands on candidates but the between sub-test correlations were low. In one case, *observation* compared with *inference*, the correlation

was only 0.18, which means that some candidates who scored high in one sub-test scored low in the other. It may be estimated that the two sub-tests 'overlap' in their demands by less than 4%. If the four sub-tests had been lumped together and subjected to the usual item analysis and test construction the intention to measure these four attainments would not have been realised. It is predictable, because inference items correlated more highly with the other two sub-tests, that many of the observation items would have been eliminated from the test. The surviving items from the four sub-tests when lumped together would give a single measure of attainment, but it is not at all clear what the overlap between the surviving items is. We would have suffered a loss of information.

Test results are described in terms which have a comfortably familiar ring, such as 65% in physics, or grade 2 in history, or even, more sophisticatedly, 80th percentile in mathematics. Comparisons made between people in terms of these numbers are the basis on which selection is made. Now if we use such results for the purpose of prediction we may justify the use of orthodox psychometric techniques providing evidence is available that the predictions are accurate within tolerable limits. To do this, however, we require measures of later success in all those professional activities to which examination candidates aspire. Generally, such predictive measures are not available. In the few cases where they are they do not provide grounds for confident assertions that attainment of present performance at, say, 'O' level, facilitates accurate prediction of later success.

If, then, we reject the use of examination results as rather rough-hewn aptitude scores, what alternatives are left?

The answer, I suggest, is to try to do a more effective job of describing attainments. At present the alternative examinations and proposals for new examinations offer pupils alternative populations with which they will compete, and thus establish their places in an intellectual pecking order. The pupil's objective is to do 'better' than his competitors. The way examination results are described give him a rough guide to his rank in the examined population. A few candidates will 'do well', a few will 'do badly', most will receive middling grades. This is so because the way the examination is constructed makes it so.

There are alternatives. If we can describe what we

expect our pupils to be able to do, whether it be to recite a set of facts or engage in defined intellectual skills at some prescribed level, then it may not be beyond our wit to devise tests (or their equivalent) to measure performance relative to prescribed standards rather than relative to competing candidates. Under such a regime, goal achievement might replace competition as the spur. Such tests have been investigated. They are called criterion referenced tests, picturesquely described by Popham and Husek as follows: 'Criterion referenced measures are those used to ascertain an individual status with respect to some criterion, ie, performance standard . . . the meaningfulness of an individual score is not dependent on comparison with other testees. We want to know what an individual can do, not how he stands in comparison with others. For example, the dog owner who wants to keep his dog inside the backyard may give his dog a fence jumping test. The owner wants to find out how high the dog can jump so that he can build a fence high enough to keep the dog in the yard. How the dog compares with other dogs is irrelevant.'* The MOT driving test is one such example, the examination of the competencies of airline pilots and to some degree medical students are based on such measures.

If our examination system were to evolve in this direction, the implications are at least worth considering. Teachers would have to be clear about their educational goals and the progress of their pupils towards these goals would need to be worked out and monitored. Pupils would also become acquainted with both the goals and their progress towards them; instead of conniving as we all do now at a loss of information on the altar of normative testing, we would be in a position to supply a descriptive profile of information about students' strengths and weaknesses. The recipients of this information would have to learn how best to use it. Employers and institutions of further and higher education would have to rethink their admission requirements. Selection would no longer be based on the dubious arithmetic of grades. But perhaps the main beneficiaries would be pupils who, now armed with a more comprehensive array of information, would make more informed and presumably therefore better choices.

* Popham, W J and Husek, T R, *Journal of Educational Measures*, Volume 6, No 1, 1969.

Reviews

Same for all?

Towards a Compulsory Curriculum, by J P White. Routledge & Kegan Paul (1973). 112 pp. £2, cloth.

John White's book is an essay in philosophy of the curriculum, but along with the necessary theorising goes a concern to see that this issues in practical recommendation. As regards the theoretical position, White argues that a rational educational system must have the pupil's good in mind. It is not possible, however, to determine in any objective sense what the Good is, and so the least harmful course to follow is to equip pupils so that they can determine *for themselves* what the Good shall be for them. This entails seeing that they know about as many activities and ways of life as possible with a view to their opting for their own preferred way of life. A compulsory curriculum, in other words, is a prerequisite for autonomy. 'We are right to make him [the pupil] unfree now so as to give him as much autonomy as possible later on' (p 22).

As to the content of the compulsory curriculum, this will include linguistic communication, mathematics, science, art appreciation, and philosophy, on the grounds that these activities can only be understood by engaging in them. Additionally, history and literature will figure prominently as studies offering knowledge and understanding of different ways of life, whilst courses in sociology, economics, and psychology, together with a properly constituted careers information service, will serve as a component designed to ensure that pupils are able to take practical means to obtain their desired ends. White surmises that study of this compulsory curriculum will not occupy all of a student's time, and so voluntary activities are proposed. These are not to be seen as options within a compulsory framework and comprise almost everything under the sun.

The book deserves to be read widely. There are faults in it, no doubt—perhaps the second chapter shows overconcern with the intricacies of philosophical debate about intrinsic values; some will argue that the distinction between Category I and Category II activities (Chapter 3) is too loose and imprecise to serve as a foundation for curricular recommendation; the social determinants of curriculum seem to be underplayed; the treatment of the 'practical' component is somewhat perfunctory. But, given the validity of such criticism (and White would agree with some of it), it remains true that we are here offered a sustained attempt to think through basic ideas pertinent to the notion of a compulsory curriculum, an attempt eminently deserving of the attention of all interested in education.

R G WOODS
University of Leicester

Talking and writing

Understanding Children Writing, by Carol Burgess, Tony Burgess, Liz Cartland, Robin Chambers, et al. Penguin Education (1973), 50p.

The Language of Primary School Children, by Connie and Harold Rosen. Penguin Education (1973), 65p.

Gone are the days when books on children's writing and talking were intended exclusively for the teacher of English. These two latest books from Penguin Education investigate language across the curriculum. They give in a very readable form the gist of modern linguistic thought relating language to learning and apply it to actual school practice. Both rely for much of their impact on their examples of children's work, which are used to illustrate their arguments. There is considerable overlap in the

books, although the Rosen partnership is specifically concerned with the younger child and the Burgess team mainly with secondary school children. The Rosen book is the report of the Schools Council project on Language Development in the Primary School: the Burgess book limits itself to written work (and needs, therefore, to be read in conjunction with a book like **Language, the Learner and the School**).

The Rosen book has the advantage in that primary schools have been in the business of children's language for longer, but the Burgess book is perhaps more valuable just because it is questioning assumptions about writing in the secondary school, where specialist teachers have tended to assume that their pupils can, should and must use adult forms of language.

Tony Burgess himself provides an excellent introduction giving a clear summary of the lines of thinking which guided the group of ten teachers who collected, selected and introduced the writings. The lines are familiar to all admirers of James Britton, Nancy Martin, the work of NATE and the Writing Research Unit of London University; but it is nevertheless good to have the argument stated so fully and yet so concisely.

He points out that writing is an individual search for meaning and therefore difficult. Other problems, like understanding of audience expectation and coping with imposed practical limitations, add to the essential difficulty of the task. In this context, the merely mechanical writing tasks, which so many teachers set, seem monumentally inadequate. They are dealing with the fringe problems and not helping the child with the essential problem of finding meaning in his own terms.

Bernard Newsome (in **Kinds of Writing**) directs our attention to the development of children's ability to use the various levels of formality in different kinds of writing. The assured public statements and poetic constructs of his 17 plus samples make excellent reading; but they are not mere anthology pieces. They illustrate the argument that although many children do master the prescribed formula, it is a long and difficult process.

The main plea of the Burgess book is against rigidity of expectation in the teacher, a plea for a variety of language tasks in every subject. By investigating the sort of writing children do in school, and by looking at the sort of treatment it receives from teachers, we see the process the child undergoes. We see that much of the public writing of the academic disciplines operates at a high level of abstraction, often meaningless to the child.

The section 'Difficulties in Writing' is really a collection of difficulties teachers have made for children—in setting unsuitable writing tasks. Suggestions are made elsewhere as to alternative modes for avoiding the regurgitation of information in a narrowly prescribed way. Examples of these are given in 'Contexts'—but for a clearer statement of the gospel, one turns to the Rosen book.

The deceptively simple approach of Connie Rosen describing the infant school climate leads us painlessly through actual examples of children talking into a consideration of the learning of verbal strategies. As the book progresses one becomes aware of the theoretical knowledge controlling and governing the enquiry into 'good current practice'. Much of what is said about the essential creativeness of all good language use and the role of the teacher in providing new challenges, new possibilities, for the child to struggle to express his meaning is, of course, relevant at all stages of learning.

Students in training would find this book useful for its sensible remarks about reading schemes, books for children, approaches to drama. As with most books about teaching it probably provides most insight 'for those whose thinking is already inclined towards what they are reading', but if any book could convert this might be it.

One quotation could be writ large over every staff room door: 'It is real language being used for real purposes, which can invest school with meaning and enable children to turn the unceasing flow of experience into connected usable sense'.

HEATHER MACDERMID
City of Leicester College of Education

Segregation?

The Disabled Schoolchild, by E M Anderson. Methuen & Co Ltd (1973), 377 pp, £2.40 (paperback).

Elizabeth Anderson will be known for her booklet **Making Ordinary Schools Special** (1971) to those readers concerned with the problems of the handicapped child. In this new book, whilst including a chapter based upon her Scandinavian survey, she extends her research into the integration of physically handicapped children of normal intelligence in 'ordinary' infant and junior schools of this country.

Taking as the starting point the (then) Ministry of Education statement in Circular 276 (1954), 'no handicapped child should be sent to a special school who can be satisfactorily educated in an ordinary school', Miss Anderson's data come from an intensive study of 99 moderately or severely handicapped children who are being educated in ordinary primary schools. Interviews with parents and teachers are annotated and a control group of

'ordinary' classmates of the handicapped children are examined to provide a check on the validity of many of the findings. The study also includes a thoroughly relevant selection of case material.

The first part of the book describes the main procedures followed in the investigation and the extent of the disabilities amongst the children included in the sample. The second, and major section, focuses on the children in school and on their social, emotional and academic needs and progress. The discussion on the social aspects of ordinary school placement is a major contribution to the literature in an area of comparatively little research. The final part of the book deals with the nature and quality of the special provisions made for the children, the position both in this country and in Scandinavia being discussed. The book ends with a chapter summarising the main findings and the recommendations arising therefrom, there is also a most comprehensive collection of appendices.

The result is a disciplined, erudite and very well documented presentation of the survey material with excellent bibliographies. I would agree with Professor Jack Tizard in his 'foreword' comments: 'The pattern of research and evaluation described . . . is one which is relevant to special education as a whole.'

But, why this wretched title?

I am aware of the problem of nomenclature within special education, particularly with regard to the physically handicapped child. The coining of a title for a lecture, article or book is quite often more difficult than the preparation involved. I find myself in agreement with Dr J D Kershaw when he wrote, 'Disabled, as an adjective, still clings tenaciously to its old place, especially where the adult is concerned, its connotation of major, general or total impairment is regrettable and it would be best eliminated or at least restricted to the

limited number of cases in which the victim cannot reasonably expect to lead a substantially normal life.' (*Handicapped Children*, 1966). The inspiration of 'Making Ordinary Schools Special'—as a title, has been lost . . . Part Two?

Make no mistake, this is a most valuable addition to the literature—even if the paperback edition I received fell apart in my hands, section by section.

Miss Anderson is concerned with the complex educational and social problems of young, *physically handicapped* children—she has done them proud! One further, personal accolade, in her concluding comments (p 303): 'It is certainly my own belief that research into the situation of the disabled teenager (sic) in ordinary schools is a matter of the first importance.' Who will pick up that gauntlet?

D N THOMAS

City of Leicester College of Education

Council at the University of Exeter Institute of Education from 1967 to 1970 and based upon a survey of 72 secondary schools in the south-west of England, is therefore a welcome addition to the literature.

The study attempts to answer three main questions about the nature of the educational process in secondary schooling: how do schools organise the behaviour and learning activities of their pupils; to what extent and in what ways are pupils involved in their schools; and, finally, is the pupils' involvement in the schools related to the internal organisation of the school?

In an extensive research report the attempt to measure by attitudinal and behavioural indices the pupils' level of involvement in both the expressive and instrumental orders of the school is the most interesting part. The author concludes from this section of the research that, with the possible exception of streaming, there are no particular forms of organisation that are associated with either high or low pupil involvement and that it is unlikely that a school could be deliberately organised to produce high involvement at the attitudinal level.

In the section on the relationship between ability, specialisation and pupil involvement the value of Mr King's comparative approach as an antidote to overgeneralisation from case studies of boys' schools becomes clear. It shows that in only about half the cases studied were top stream pupils on average more involved than lower stream pupils and on occasion the reverse pattern was found. Among girls in mixed and single sex schools, the study shows even less of a relationship between streaming and involvement; in fact, significant differences in involvement were found to exist between non-streamed groups studied, suggesting that variations in involvement must be related to non-organisational factors, of which pupil-teacher interaction is probably one.

Although the sample is reasonably representative of the national distribution of schools by size, sex composition and status it is regrettable for comparative purposes that no truly unstreamed secondary schools or few comprehensive schools run on other than 'meritocratic' lines, were able to be included in the sample. This book is primarily directed towards the professional sociologist but others who are interested in school organisation will find the book a useful source of information.

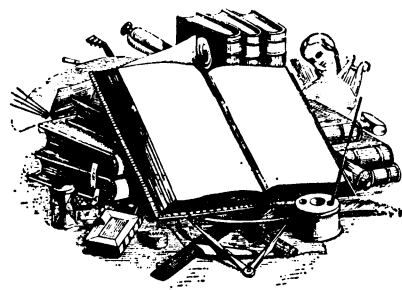
TOM WHITESIDE

University of Leicester

Research report

School Organisation and Pupil Involvement; a study of secondary schools, by Ronald King. Routledge & Kegan Paul (1973), 256 pp, £3.50.

In undertaking research into schools as organisations a major problem facing the researcher is the decision whether to study the institution in depth utilising a case-study approach or to adopt a more comparative approach and study a number of institutions. The work so far available is primarily of the former type (eg, Lacey, Hargreaves) and although there have been comparative studies these are mainly atheoretical surveys of comprehensive schools. The present study, supported by the Schools



chambers
**German
and Social Studies**
Moderner Deutschkurs

E. Ericsson and C. Eisenberg
Edited by D. F. Macgregor and A. Mackenzie

Now complete

A four-year O level course for average classes.

'In all cases the language taught is vital and aimed at preparing the learner for his first contact with the real Germany of today...in short, a very attractive course.'

Modern Languages

Books 1-4, each with Übungsheft

Inspection copies from **Chambers**

People at Work

A series of fully-illustrated books for secondary, middle and upper primary pupils. As well as covering the historical development, they lead pupils to consider and explore the present-day implications of the subjects discussed.

Published titles

**Houses Clothes Entertainment Health
Food Shops Money**

Each 50p

Further titles in preparation

chambers

Computer Studies and Mathematics

The Computer: Yours Obediently

The Scottish Computers in Schools Project

The introductory activity course in computer appreciation
that doesn't have to be taught by mathematicians.

With Pupils' Books, Teachers' Books, Pupils' Workbooks and colour
slides.

**'Every teacher running or contemplating running
courses about computers should see a copy of these
books as soon as possible.'**

Computer Education

Fully descriptive folder and inspection copies from **Chambers**

Modern Mathematics for Schools

The Scottish Mathematics Group

**The fully revised and rewritten Second edition meets all
'modern' GCE and most CSE syllabuses in Britain, as well
as the Scottish Certificate.**

Teachers' books, Pupils' books, Progress Papers with Answer Keys,
Graph Workbooks, Three-figure tables and Sixth Year Books.

Information and inspection copies from
**Blackie Bishopbriggs Glasgow G64 2NZ
or Chambers 11 Thistle Street Edinburgh EH2 1DG**

INDICTMENT OF MARGARET THATCHER

Secretary of State for Education 1970-3

In defence of the
EDUCATION ACT 1944
7 & 8 Geo 6. Ch 31

On behalf of
Local Education Authorities,
Teachers, Parents, Children

'Mrs Thatcher has left us with educational and administrative anarchy. If we were to accept her decision as it stands it would go against every principle we have endeavoured to incorporate in our plan, including those set out in her own Circular.'

Chairman, Harrow Education Committee, April 1973.

'In view of the fact that the Secretary of State has withheld approval from the proposals in Schedule B, she would be glad to learn from the authority how, in the light of the decisions conveyed in this letter, they intend to proceed with the proposals in Schedule A to which she has given her approval.'

DES to Birmingham LEA, June 1973.

'Representatives of the principal objectors will also be informed of the Secretary of State's decisions.'

DES to Birmingham LEA.

'After careful study of the amended plan one is left with a smouldering anger at the inequalities that have been perpetuated and the illogicalities introduced.'

President, Birmingham NUT, 1973.

'It is to me quite incomprehensible and contrary to all natural justice and sound education policy that the protests of some people in relation to one school can so affect the lives of so many parents and children.'

Chairman, Lancashire Education Committee, 1972.

'We have been told frequently by the government that the referendum is unknown to the British constitution. We should be even more suspicious of a referendum which arranges for the casting of one set of votes only. Those of all political shades find Mrs Thatcher's behaviour intolerable, capricious and an affront to the principles of democracy.'

Surrey Stop the Eleven Plus, July 1973.

Some copies of this survey of policy on secondary reorganisation remain: send today.

'A wealth of information on Mrs Thatcher's decisions, on the relevant sections of the Education Act . . . an invaluable reference source for anyone concerned about comprehensive education.' *Education* 2.11.73.

'Establishes a *prima facie* case against the education minister.' Louis Blom-Cooper QC, *Times Educational Supplement* 12.10.73.

Single copies 40p (post free). Reductions—6 copies £2 only, 12 copies £3.80 only (post free) from PSW Publications, 7 Covert Close, Oadby, Leicester LE2 4HB.