CONFIDENTIAL

PRIME MINISTER

18 February 1988

National Curriculum

Mathematics Curriculum Working Party

Earlier this month Professor Prais resigned from the Maths Working Party. While he is not the easiest of people to deal with, I had three long discussions with him, begging him to fight on and defend his ground. By the end however he felt that the Committee had been so loaded against him, and that following his minority Interim Report, he had been put in an intolerable position.

Following the Report the Committee was divided into three groups A B and C;

A to produce attainment targets;

B to draw up programmes of study;

C the group into which Prais and two primary teachers were put (all of whom had signed the minority report!) - to discuss international comparisons, vocational aspects and gender issues.

Group C was effectively excluded from the crucial debate and assigned marginal issues.

The concerns raised by Prais are being echoed by others whom I meet. The real danger we face is that the national

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curriculum which we will introduce will not raise standards but enshrine the shibboleths of a failed system.

**Recommendation**

At this stage the success or failure of our attempts to introduce a core curriculum in basic subjects will depend more than anything else on the choice of posts of Chairman and Chief Executive of the National Curriculum Council.

These appointments are of fundamental importance.

I have no doubt that Kenneth Baker will be suggested names by the Department which are vetted by HMI and are therefore acceptable to the 'educational establishment'.

Might it be suggested to him that he goes out of his way to produce his own totally independent list?

Brian Griffiths

BRIAN GRIFFITHS

P.S. Since finishing this note I have just received the attached paper from Donald Naismith of Croydon.

The Mail on Sunday, February 7, 1988

# This maths teaching fails our children

By Professor Sigbert Prais

Senior research fellow at the National Institute of Economic and Social Research

I HAVE just made one of the saddest decisions of my career. In a letter to Education Secretary Kenneth Baker I have resigned from his crucial committee examining how schoolchildren should be taught maths.

The committee is not only concerned about the pupils going through our State schools now, but the thousands who will make up future generations of young workers.

In other words, the very people whose success or failure will decide how this country performs in industry and commerce up to the turn of the century and beyond.

I have spent many hours devoting time to the committee since it was set up last summer. But it was only a few weeks ago that I finally realised that Mr Baker's aim of making every child competent in basic maths after 11 years of schooling is now in danger.

## Correct

The reason is simple enough. The establishment of teachers, university lecturers, local authority inspectors and advisers have hijacked this committee and its vital work on new national curriculum.

*Most of the members of Mr Baker's committee have no knowledge of the business world. They are simply concerned with promoting the so-called correct attitude to mathematics instead of raising disgraceful standards. I fear the committee is intent on changing absolutely nothing.*

I support Mr Baker's ideal of laying down benchmarks for what every pupil should know at each stage of his or her schooling. Like him, I know that work carried out by the National Institute of Economic and Social Research has demonstrated time and time again that our schools are failing most pupils.

Teachers are allowing teenagers to leave the classroom lacking the basics of mathematics which would enable them to get jobs like their counterparts in West Germany and Japan.

## Challenge

I believed, perhaps naively that the proposed national curriculum was an opportunity to put this right. Now I fear that the national curriculum will only make things worse.

*If the educational establishment get their way, we will be enshrining the methods of teaching maths which have so patently failed in the past.*

Recently a colleague visited an English technical college where a class of 19-year-olds were training to become mechanics. Asked by their teacher to calculate the adjustment on a motor car's steering mechanism by dividing 600 by 0.2 not one single student there knew how to even start approaching the problem.

In France she put the same question to a class of 19-year-old trainee mechanics and each one gave the right answer in seconds.

A major international study published last year showed that eight percent fewer 14-year-old pupils in England and Wales could answer the same maths questions in 1981 than could supply the right answers in 1964.

Yet the Baker committee does not seem to take this sort of evidence seriously. And it refuses to examine what is happening in the classrooms of other countries.

Instead of meeting the challenge and finally deciding exactly what children need to learn it has come out with broad generalities and jargon. In its interim report it even declared: 'Attainment targets should be recognisable outputs of the educational process.'

I am not saying that we need a curriculum laying down in laborious detail what and how every child should be taught. But we must know at what age they should be capable of calculating the area of a circle, for instance.

It is not sufficient to say that children must have a grasp of decimals. You must say that at age seven a pupil should be able to divide by a single digit number, at age nine by two digits and at 10 by a figure which contains a decimal.

When I visit Germany I see many more young people training to join industry. Yet in the colleges of further education here lecturers tell you they dare not enrol any more students because teenagers coming from schools do not have the basic arithmetic needed to start learning new skills.

Teachers do not seem to know what they should be teaching. The huge variations between what is taught in different primary schools means that the transfer to comprehensive at 11 is a confusing time. Often a year is wasted while gaps in the education of some children are filled. That problem doesn't exist in Germany, France and Japan where there is an effective national curriculum with more rigorous testing.

When the committee published its interim report last December I refused to sign it. It barely mentioned arithmetic, skirted around the whole issue of testing and stressed the importance of mathematics being a fun subject.

The report said that children should be given calculators at the age of eight, when the rest of the world — on the basis of experience — has decided they should not be introduced until much later. Before being handed machines it is essential pupils have mastered enough arithmetic to check a grocery bill or a bank statement.

Changes have been made to the committee since that report came out, but it is still overwhelmingly run by educationalists and civil servants.

## Tough

I would have liked to see personnel officers from large firms who recruit school-leavers and then putting them on courses to bring them up to the standards needed. They, along with industrialists and parents, know what a child needs to cope in the tough, outside world.

When, on July 10, I received the letter of invitation to join the National Curriculum Mathematics Working Group I wrote my acceptance and sent it to Mr Baker immediately.

Reluctantly, I have now come to the conclusion that all that lies ahead is a time-consuming battle I cannot win.

It will be a tragic waste of an opportunity if we fail to get the maths teaching in our schools right, if we fail to give our children a chance to succeed.

*Unless the Government acts quickly our national curriculum will merely repeat old mistakes. For the people who are drawing it up are the very same ones who have controlled education in this country for the last 20 or even 30 years.*

FINANCIAL TIMES

Politics Today: The Baker education reforms

# Another Great British Muddle

By Joe Rogaly

BRITAIN'S education system is likely to stay in a mess until the end of this century. The Government's attempt to build some rigour into it will certainly not work quickly, and it may never work at all.

The reason is that while almost any minister can get his officials to draft a Great Education Reform Bill ("Gerbil"), it is the devil's own job to have them carry it out. In parliament just about all that the present Secretary of State for Education, Mr Kenneth Baker, has to do is sit there smiling while his party's huge majority does the rest. His Gerbil will scamper through. The task is rather more difficult in the real world outside the House of Commons. There Mr Baker has to persuade the teachers to change their ways of teaching. His staff – the departmental officials – have to do most of the persuading. They are having a hard time doing it.

The alarm bell rang last weekend. It was set off by a resignation from an inoffensive little committee whose job is to outline a set of mathematical skills that children of various ages should possess. The man who resigned, Professor Sigbert Prais of the National Institute of Economic and Social Research, came out fighting in a two-fisted article in a Sunday newspaper. "I fear," he wrote, "that the committee is intent on changing absolutely nothing."

Pull at that unassuming-looking thread, and you will find that it is attached to a whole row of cans of worms.

For a start the committee – more properly, the National Curriculum Mathematics Working Group – has so far made a bosh of its job. Mr Baker indicated as much in a letter to the then chairman when it published a woolly and disappointing interim report just before Christmas. But it was the Education Secretary himself who set up the working group last July. Why did he get it so badly wrong? He depended on the advice given by the relevant official at the Department of Education. It is supposed to be unfair to name civil servants below the rank of permanent secretary, so, just for fun, let's call this gentleman Humphrey. Ask around, and you will discover that the names were produced by Humphrey from lists of teachers (provided by Her Majesty's Inspectors of Education, all ex-teachers), education officers and their advisers, eminent mathematicians, and the like.

The result of this "trawl" was a committee on which sat 11 members aligned with a more or less soft approach to the mathematical curriculum, plus Prof Prais. So much for can of worms number one. Now look at number two: the difference between a hard and a soft approach to maths.

The blackboard in my illustration, compiled from a paper by Prof Prais, gives some idea of a hard approach. Questions 1 and 2 can be answered successfully by about two thirds of the least able 40 per cent of West German schoolchildren aged 15. Question 3 is easy as pie for continental apprentices but not Britain's, according to the professor. He has argued for a precise mathematics curriculum that says that such and such a problem, with examples as above, should be solvable by this or that proportion of children at various ages, and that these target attainments should be tested by the old-fashioned method of sitting the pupils down for an hour or so and letting them get to it. Calculators should not be provided to young children. Our continental and Japanese competitors provide "hard" curricula, but we persist in shrinking from any such thing. Above all, mathematics is a serious business.

The soft approach is quite different. Is it necessary for children to know how to do, say, long division? Calculators may stimulate the imaginations of even eight-year-olds. Children have different levels of ability at different ages. It is better that their work is "assessed" by their teachers than that it be tested by external authorities. As to the Japanese, they do everything so differently that comparisons are invalid. Above all, mathematics must be fun.

What Prof Prais calls the "educational establishment" is overwhelmingly on the side of the soft approach – to the extent that it accepts the need for a national curriculum at all. Yet even that is in doubt. In theory, once the Gerbil becomes law a new National Curriculum Council will lay down what is to be taught, just as its counterparts do in most of continental Europe and Japan. It is a popular policy, as measured by the polls. All the opposition parties support the general idea. There are, however, two snags: (i) the teaching profession remains deeply sceptical about it, and, (ii) most of the civil servants in the Department of Education have made their careers in a world in which you leave the curriculum to the teachers.

So it is hardly surprising that Humphrey's chosen dozen, the members of the mathematics working group, spent the second half of 1987 arguing among themselves. What did the department mean by "attainment?" What was an "objective?" An "aim?" After some weeks of that there was a debate about whether to divide into sub-committees according to age (a hard approach), or subject (a soft one). Three representatives of primary schools then said that they wanted to form their own committee. A new member, soft on calculators, was co-opted. Some members declined to sign the interim report. The chairman, Prof Roger Blin-Stoyle, said the whole thing was taking much more time than he had available. He then resigned.

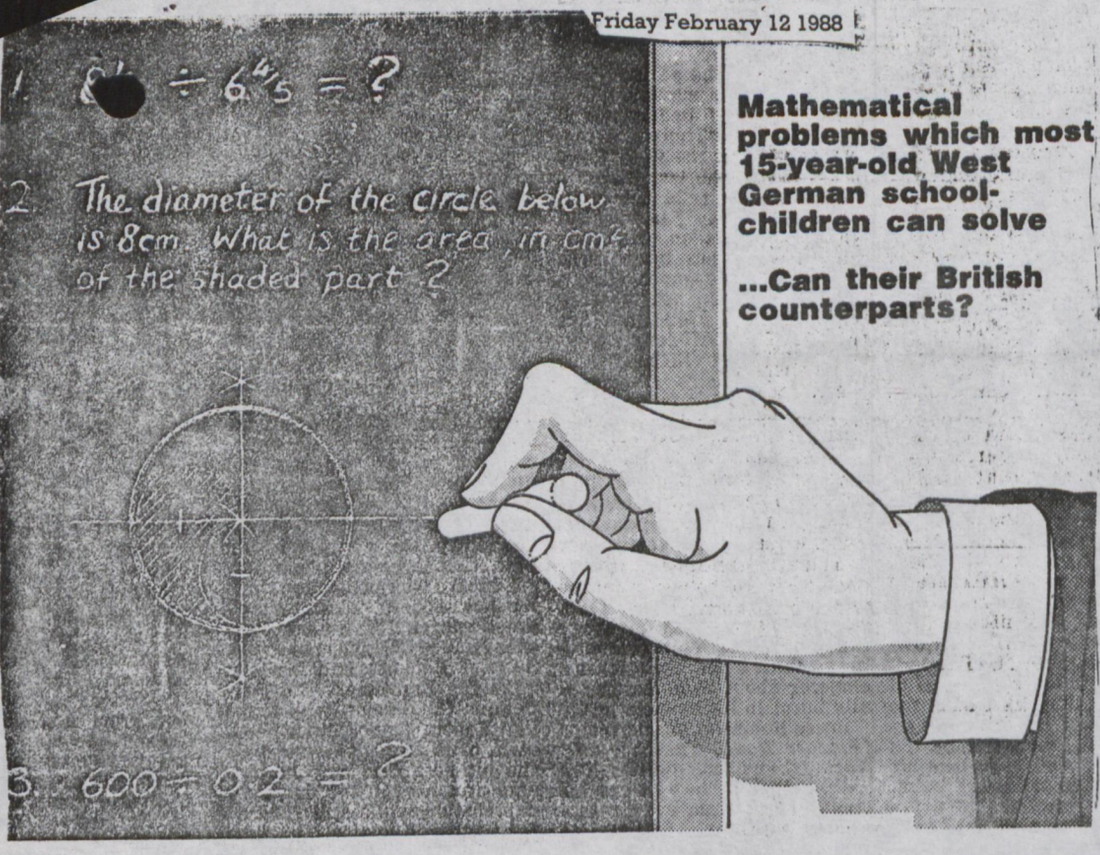
It would be unfair to intimate that all this was a plot by Humphrey. Even if it was, he would of course have a cast-iron alibi. As chairman, Prof Blin-Stoyle was the first member of the mathematics group to be chosen. His name was on a list with several other potential chairmen, and Mr Baker accepted it after Humphrey and a colleague had personally sounded out all the candidates. The choice was endorsed by the Prime Minister, Mrs Margaret Thatcher; she sits as chairman of the Cabinet's permanent committee on education and every decision passes before her eyes. The other members could not be so closely vetted. They were, however, chosen in the usual way.

There lies the rub. To the Department of Education the "usual way" will naturally produce a membership drawn from the broad stream of educational opinion – the very stream that the Government is trying to divert into a wholly new direction. The people who have presided over the great failures of the past two or three decades are being drafted in to plan what is supposed to be a new era of success. In short, the greatest change in educational practice in British schools this century has to be driven through by a team led by Humphrey – and, however anxious he and his senior colleagues may be to serve a Government in its third term and probably on the way to a fourth, the very nature of their department makes the task almost impossible.

Humphrey must however be given full marks for trying. He has produced a new chairman: a no-nonsense man of the north named Duncan Graham. Mr Graham, who is Chief Executive of Humberside County Council, was until last April the county education officer for Suffolk. When the name was sent in Mr Baker said, in effect: "Humphrey, I trust your judgment totally, but may I have a look at him?" It is thought that they got on like a house on fire. The new chairman left the Secretary beaming in the knowledge that here was a man who understood what had to be done. It seems that while the latter is not a mathematician, what he is undoubtedly good at is getting a committee to produce valid recommendations on time. He is being fully supported by the officials.

The working group has been put under the lash. Its performance is set, time-tabled and monitored. It has been divided into groups A, B, and C – and on to C went the three recalcitrant primary school representatives, plus Prof Prais. He was away on the day that the three were told, in a Kensington hotel, that no meeting-room had been booked for them. (After receiving a

Friday February 12 1988




**Mathematical problems which most 15-year-old West German schoolchildren can solve**

**...Can their British counterparts?**

Daily Telegraph

## Schoolboy, 13, has IQ of 176 2

Edward Jenkins, 13, of Dean Close, Mansfield, Notts, has scored 176 in an IQ test run by Mensa, only two below the highest possible mark.

Edward, who was four years younger than anyone else taking the test at Loughborough University, Leics, said: "Some people call me a swot but I'm not worried."

dressing-down from Humphrey in the corridor they retired to the bar for their first session). But Group C's initial tasks – all on extra-soft topics like "mathematics across the curriculum," the "gender effect," the "multi-ethnic" dimension and "international comparisons"– could have been designed to drive Prof Prais out. He is not of the temperament required to do battle in such circumstances.

It is too soon to say whether the professor is entirely right. My guess is that Mr Graham will produce a report that sets out to please the hard side by specifying what children of various ages should achieve, while aiming to "bring along" the softs, with talk of "flexibility" and "varying ability" and the like. It might work; if it does not, Mrs Thatcher is there, in the language of the Civil Service, to stop the balls that get past Mr Baker.

But all that is only a part of the long and tortuous task of trying to get British education to accept reform. There are many further cans of worms to follow: the working group's report has to go to the new National Curriculum Council. That has to produce its own refined version which, if accepted by the Prime Minister's education committee, will be turned into a statutory instrument by the Education Secretary. A science curriculum working group is set along the same path. It has so far had a happier history than mathematics. Yet another committee, on assessment and testing, has produced a report that Humphrey would no doubt regard as a beautiful construction, since it simultaneously caters for both hards and softs.

It is in the likely outpouring of "beautiful constructions" that the principal danger to real reform is to be found. For you could say that everything I have described is merely part of the political process – the jollying-along of a reluctant producers' interest towards a more consumer-oriented method of working. The working groups cannot be fixed in advance or they will not command the respect of the profession; their reports cannot be at the extreme end of hard or they will be rejected out of hand. The trouble with this Humphreyesque kind of thinking is that, however laden with goodwill and reasonability it may be, the end of the road could be a Great British Muddle

Let us say, however, that there is something like a hardish core curriculum in place by the turn of the decade – if not for all subjects, then at least for English (imagine the committee on grammar, yet to be trawled for!), maths and science. These are regarded in Downing Street as of primary importance and they will of course be pushed through, with Humphrey's help. The next step is to finance it all, with a bribe to gain the education establishment's acquiescence, more training for the new-think maths teachers, capital spending on science laboratories, and so forth. The Education Department sees years of phasing-in that stretch through the 1990s. It has yet to confront itself with the likely cost. In short, at least one more generation of half-educated children will be turned out of our schools before there is any serious improvement.

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