

Bigger sums for better sums

The Reagan Administration is expressing concern at declining standards of mathematics and science in schools. It needs to put its money where its mouth is.

A HOCKEY team has won 5 out of 20 games it has played: what percentage of games has it won? You have a master's degree in chemistry and head the science department of a Florida secondary school where you have taught for seven years. What is your salary?

The first question could not be answered correctly by 48 per cent of the American 17-year-olds to whom it was recently posed by the National Assessment of Educational Progress. The answer to the second question is \$18,000. Could there be a connection between the answer to question two and the inability of so many young Americans to find the correct answer to question one? On present showing, the Reagan Administration appears not to think so. Forced by public opinion to acknowledge that secondary education is facing a deep crisis, President Reagan has this summer adopted the cause of education as if it were his own. His pre-election pledge to abolish the Department of Education has been tactfully forgotten. In school visits around the country he has been televised reading from Shakespeare and advocating a return to the basics, more homework and merit pay for teachers. What he has refused to do is accept the simple proposition that the best way to improve the quality of the schools is to pay for better teachers.

There is now overwhelming evidence that it is the poor pay and status of teachers that has driven able new entrants from the profession. In science and mathematics the problem is especially acute. New teachers are being drawn from the bottom quarter of high-school graduates. From 1971 to 1980, the number of students training to teach dropped threefold in science and fourfold in mathematics, and only half of this group has actually taken a job in teaching. One in four of those who have say they intend to give up in the near future. The result: a massive shortage that is likely to become worse. In 1981, half the teachers newly employed to teach mathematics and science at secondary level were unqualified to do so. And the shortage will be exacerbated by attempts to raise the standards of teachers or of the children they instruct. Increasing the number of hours devoted to mathematics and science will push up demand while the insistence that new teachers pass minimal competency tests will push down supply.

In responding to the cacophony of recent reports that have made education into the kind of political issue it has not been since Sputnik, President Reagan has done his level best to avoid the obvious conclusion that teachers must be paid more if their calibre is to be improved. Part of his argument is constitutional: it is the states and school districts, not the federal government, that have the prime responsibility for paying teachers. The other part is merely rhetorical: federal spending on education has increased for 20 years without an obvious improvement in educational standards. Why should spending more on teachers be expected to provide a cure now?

The constitutional argument can be easily disposed of. Few states possess a tax base robust enough to pay for the kind of pay increases that would be needed to change the attractiveness of a career in teaching. There are, however, scores of precedents for federal help in the form of matching grants to enable states to achieve goals that serve the national interest and it is hardly possible to deny that the decline of secondary education standards, particularly in science and mathematics, is a national issue of the first order. The scientific ability of 17-year-olds,

measured by major national surveys in 1969, 1973 and 1977, has seriously declined. Scores on the Scholastic Aptitude Test (SAT) fell for 18 years until they levelled out two years ago. Between 1975 and 1980 the amount of remedial mathematics teaching offered by universities had to increase by more than 70 per cent while overall enrolments increased by only 7 per cent.

That pay can play a big part in the improvement of the quality of teachers has been partially acknowledged by the administration in its endorsement of the concept of "master teachers" — an elite cadre of teachers who would be paid above the standard rate and serve as an example and incentive to newcomers to the profession. Several states — notably California and Tennessee — appear to be moving rapidly towards the adoption of such schemes. Under pressure from their members, the teachers' unions have begun to soften their opposition to master-teacher plans, while insisting that the longer-term objective should be to raise the general salaries of all teachers. Here too, however, the administration has refused to put its money behind its professed convictions. If there are to be enough master teachers receiving big enough salaries to change the image of teaching, federal help is essential, particularly in states such as Michigan where local economies are incapable of sustaining increased expenditure.

Paying teachers more is not a guarantee that standards of education will improve. But continuing to pay them too little is a guarantee that standards will continue to decline. Why is it that between the ages of 9 and 17 there is a huge reduction in the interest children take in science at school, while they continue to be fascinated by science in the newspapers, in science parks and on television? One reason is that a proper understanding of science — as opposed to a superficial savouring of its delights — requires some disciplined work. The other is that teachers are paid less than television producers. □

Money for AIDS

British spending too little, US research will need control

THERE is no better measure of the extent of the publicity that has attended the dramatic rise of AIDS than the fact that less than two years after its recognition and with only about 2,000 cases worldwide, the acronym for acquired immune deficiency syndrome is a household term. Calculations that the number of cases of AIDS doubles every month and its alarming mortality rate have led to an understandable degree of apprehension, even panic, in groups at risk. Has the response from the biomedical community and its sponsors been adequate?

Shortly after it first became clear how serious was the AIDS problem, there were cries from the homosexual community, some plaintive, some accusatory, that the problem was being ignored because it affected a minority group. Moreover, there was a feeling that criticism of the promiscuous lifestyle of some networks of homosexuals, a large risk factor in AIDS, was more in evidence than was compassion. These early reactions were misplaced. Compassion is not lacking from the medical or the biomedical professions; money for new lines of research does not grow on