ing them to novel situations. A similar picture emerged among both 13- and 15-year-olds.

"It seems that in all age groups, the ability to apply scientific concepts is lower than the ability to understand scientific data," says Wynne Harlen of the Centre for Science and Mathematics Education at Chelsea College, London. "The teaching of science should be related to needs; but at present the type of science that is done in the classroom does not seem to have a relevance to everyday life."

Similar criticisms are often heard in Britain about examinations in science, namely that they tend to assess the mastery of knowledge that a pupil has obtained but not his or her ability to use it. Employers often compound this problem, suggests Dick West of the Secondary Science Curriculum Review, by using the levels of academic achievement obtained in examinations as a criterion for recruitment, rather than testing broader skills such as the application of concepts to practical problem-solving.

Exploring ways to encourage a change of emphasis within examinations is one of the goals of the DTI's Industry/Educa-

# Congress Sidetracks Science Education

Despite broad public recognition that there is a problem with science and mathematics education in the schools and a fast start by Congress on legislation designed to give a major boost in funding to improve it, federal action on the matter is currently stalled.

House and Senate committees moved promptly early this year to fashion science and math education bills (*Science*, 11 March, p. 1198). The House passed its bill (H.R. 1310) in March; the Senate bill (S. 1285) was reported out of committee in May but still has not been scheduled for floor action. The two bills are similar in funding—$400 million plus—but differ significantly in content.

Even if the Senate bill achieves early passage, therefore, reconciliation of the House and Senate versions of the bill could be difficult. And there are other obstacles. The reception the Administration would give to a science and education measure several times more costly than the one it asked for is uncertain. And there is really still no consensus among the congressional sponsors of the proposals and the education lobby on the specific shape the reforms of science education should take.

At the same time, staff sources on Capitol Hill say that public pressure for passage of legislation to aid science and math education remains high. Helping to maintain the edge of interest has been the appearance of a series of widely publicized reports on the ills of American education, most recently those of the National Science Board Commission on Precollege Education in Mathematics, Science and Technology, and the Carnegie Foundation for the Advancement of Teaching report on secondary education. Longer term prospects for passage of a substantial federal initiative look favorable to Hill observers, although the legislation is currently consigned to the parliamentary slow lane.

Science and math education, however, has not been completely shut out in this session of Congress. The National Science Foundation (NSF) appropriations bill passed in July contained $75 million for science education, an increase of $45 million over the amount allocated in the last fiscal year which ended on 1 October.

Just how these additional funds will be expended is not yet clear. NSF authorization legislation, which customarily specifies program spending, has been held up, mainly by a tussle for jurisdiction over NSF in the Senate between Senator Orrin G. Hatch (R–Utah), chairman of the Labor and Human Resources Committee and Senator Slade Gorton (R–Wash.), who chairs the Commerce committee's subcommittee on science, technology, and space.

The play of personality and congressional politics also contributed to the slowdown on the broader science and math education bills. The House version of the bill reflects an accommodation between the chairmen of the House Education and Labor and Science and Technology committees, Carl D. Perkins (D–Ky.) and Don Fuqua (D–Fla.). The Senate bill represents a balancing of the interests of Senate Labor and Human Resources Committee's chairman Hatch and its education subcommittee chairman and ranking majority member, Senators Robert T. Stafford (R–Vt.) and Claiborne Pell (D–R.I.).

As now constituted, neither bill delights the coalition of mainstream education organizations representing elementary and secondary schools and higher education. A major concern is that the bills' distribution formulas would diffuse funds too widely to achieve significant impact.

Unanimity within the coalition is also under stress since the amount of money designated for higher education strikes some of the elementary and secondary school partisans as disproportionately high. To help the legislation over the final hurdles, it will be important that the education community front remains united.

A principal reason that the science and education bills have been sidetracked is simply the turn of the congressional cycle. By late spring, the legislators' attention was preempted by such as the MX missile and U.S. policy in Central America. Since Congress returned in mid-September from its summer recess, appropriations measures have inevitably occupied center stage.

The Administration attitude toward the proposed science and math education measures has not yet been clearly expressed. Basic policy follows President Reagan's view that domestic spending should be controlled in order to restrain the deficit, and the federal role in education should be limited, leaving the main initiative for reform to state and local authorities and private groups. Education Secretary Terrel Bell, however, has indicated that Reagan might sign additional science education legislation if its funding dimensions are acceptable, a position that is regarded as reflecting the political potential of the issue.

Democrats in the House evidently view education reform as an issue with sufficient popular steam behind it to propel it through next year. The House by voice vote on 3 October passed a bill authorizing $500,000 for a national education summit conference to make specific recommendations to Congress, the federal government, and the states on how to implement the reports of the expert committees. The deadline for the conference report was set at 15 June of next year, just in time for the presidential nominating conventions and the '84 campaign.—JOHN WALSH