

More Restructuring Urged for British Universities

Reports on physics and chemistry teaching could result in closure of some departments, merging of others

London

A NATION-WIDE RESTRUCTURING of physics and chemistry departments at British universities has been recommended in two separate reports commissioned by the British government. Both reports conclude that teaching and research can be effectively combined only in departments that have at least 20 full-time academic staff.

This conclusion is widely expected to form the basis of a new policy toward government funding of university activities in these two fields, to be announced early next year by the recently created Universities Funding Council (UFC). So, too, is the idea that the optimal student-staff ratio should be about 10 to 1, implying that viable departments should have at least 200 undergraduate and postgraduate students taking single-honors courses.

The two reports were commissioned by the UFC's predecessor, the University Grants Committee (UGC). Like an earlier report on the earth sciences, the message of both reports is that smaller departments in each subject should either be closed or merged with other departments in related scientific fields.

The physics report, for example, states that "the subject will emerge stronger from concentrating staff and students into fewer universities." It says that it takes "about 20 full-time equivalent staff to provide the variety and attention [required by single-honors students] while maintaining a high level of research."

The report admits that an organized restructuring from the center will result in the loss of free-standing physics departments in 15 to 20 universities out of a total of 53. But it warns against allowing a process of natural selection to take place, suggesting this would only encourage the largest to expand at the expense of the smallest.

"We view this with dismay," says the committee, which was chaired by Sir Sam Edwards, Cavendish professor of physics at Cambridge University. Indeed, the committee recommends that in the restructuring process, there should be no expansion of departments that teach more than 400 students, of which six currently exist in Britain.

The chemistry report, prepared by a committee headed by Gordon Stone, professor of inorganic chemistry at the University of Bristol, makes similar recommendations. In particular, it proposes that adequate funds be provided for "not fewer than 30 chemistry departments" with a cutoff point of a minimum 20 staff. "Self-standing departments of chemistry should not exist if they cannot meet this criterion," the committee says.

At present, 21 out of the 56 chemistry

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departments in British universities fall below this level and 24 have a fewer than 200 students. If, as is widely expected, the UFC accepts the report's conclusion, then most of these would either be merged or closed down.

Both reports suggest that there should be some modification of the course content to make them more acceptable to students, particularly at a time when the number of graduates is decreasing yet demand for trained scientists is growing. The Edwards report on physics, for example, says it is "essential" that curricula are revised and the demands of examinations are eased, suggesting that "more specialized and advanced materials should be reserved for postgraduate education."

Similarly, the Stone committee comments that "remedial actions will be needed to maintain the undergraduate intake", and also suggests there should be a reexamination of all chemistry courses "to ensure that the quantity of material included does not overwhelm the students, and that sufficient time is allowed for significant practical experience in laboratories."

Where the two reports differ—not only from each other, but also from the earlier

earth sciences report—is on how the research activities of departments should be presented in any overall classification.

The earth sciences committee, in a suggestion that provoked violent debate throughout the whole of Britain's university community, suggested a three-tiered structure (eventually accepted with some major modifications by the UGC) under which those departments with a relatively low research profile should be in the future considered primarily as teaching departments (*Science*, 3 June, p. 1270).

The Edwards report is less radical. It says such a solution would not be viable, since "students will not go to such departments, nor will able staff teach there."

In contrast, it proposes what would essentially be a two-tiered research system, with a "cohort of university researchers"—by implication made up primarily of staff from smaller physics departments—concentrating less on attracting major basic research grants than on hiring out their research skills either to industry or to government agencies, or to work at centralized research facilities.

The chemistry committee also rejects the notion of teaching-only departments. But it warns against a tendency to put excessive emphasis on applied (or even strategic) research in universities. The committee expresses particular concern about the Science and Engineering Research Council's (and the British government's) current enthusiasm for university-based Interdisciplinary Research Centers. It says that these have been cutting directly into the budget for fundamental research and that as a result "research in core chemistry is in serious danger since support has been reduced to an unacceptable level by the movement of existing funds into new areas."

Comments on both reports from the university research community have been relatively muted, although the Committee of Vice-Chancellors and Principals has pointed out that some of the leading university research departments in the two fields are currently smaller than the recommended minimum size. The university of Essex, for example, the top recipient of chemistry grants, has only 130 students.

The logic of the committee's recommendations, however, is that, with a slight reorganization of resources, such departments would be able to grow to a size acceptable to the government. In other cases—such as the University of Swansea, which is already discussing a merger of its physics departments with two neighboring Welsh universities—many universities have already seen the writing on the wall, and are beginning to take remedial action themselves before being instructed to do so. ■ DAVID DICKSON