Congress: The Quest for Order in Education Programs

It is no secret that a lot of federal money appropriated in the name of scientific research is spent in colleges and universities for purposes which are readily recognizable as educational. Congress has generally accepted this practice, but in the last year or two there has been growing restlessness on Capitol Hill because of difficulties in getting complete and detailed information on just how the government is spending money on education, particularly higher education.

To help abate the confusion, Congresswoman Edith Green, who heads the House subcommittee which deals with higher education legislation, last spring recommended that an inventory of federally supported educational programs be made. A congressional staff study is to be published in January. To prepare a report to accompany the study, the Green subcommittee held four days of hearings at the end of November to which were invited officials of the government departments and agencies that administer education programs.

Question of Jurisdiction

Commenting on the dispersion of authority over education, Mrs. Green observed that the Office of Education, which nominally has responsibility to oversee federally supported education programs, administers about half of the total of such programs, while control over most of the rest is distributed in a half dozen other places. Representatives of seven departments and agencies were called in—Department of Agriculture, Atomic Energy Commission, Defense Department, National Aeronautics and Space Administration, National Institutes of Health, National Science Foundation, Office of Education, and Office of Vocational Rehabilitation. Spokesmen for the State Department and the Agency for International Development also came to the hearings to talk about programs in international education.

If federal support for education presents a crazy-quilt pattern, this in part is due to the rules of Congress which govern the assignment of bills to committees. Each committee has its own legislative domain and a special relationship with the agency which administers programs in the committee's exclusive field.

Education legislation, in practice, is assigned to committee on the basis of the kind of education it provides. If, for example, a bill provides special support for scientific education it may go to any one of a number of committees rather than the two committees which handle general education legislation.

With responsibility for education spread through nearly a dozen House and Senate committees—including always the powerful appropriations committees—and with major educational programs administered by seven or eight departments and agencies, there is no single center of control or coordination in either Congress or in the agencies which administer educational programs.

Under these circumstances, making even a simple inventory is a formidable task and one that has thwarted earlier surveyors. Nevertheless the survey initiated by Mrs. Green is intended to go beyond mere enumeration and to answer questions such as these: Does overlapping exist? Are federal dollars being spent wisely? Are the programs meeting the educational needs of the nation?

In pursuing these larger questions at the hearings, subcommittee members showed special interest in the activities of the war-baby generation of federal agencies—AEC, NASA, NIH and NSF. These agencies all have had snowballing budgets, big responsibilities, and more than ordinary latitude in disbursing federal funds. And through their research budgets these four agencies, along with the Department of Defense, have had profound influence on American higher education.

Figures introduced by NIH spokesmen at the hearings showed that federal funds for research made available to institutions of higher education rose from a total $151 million in 1955 to $715 million in 1962. In 1955 the Defense Department dominated the field, making available about 70 percent of the total federal research funds for higher education. By 1962 Defense's contribution to the larger total had dropped to 28 percent of the funds. NIH accounted for 40 percent of the federal funds going to higher education for research in 1962 compared with the 9 percent NIH contributed in 1955. NSF's percentage in 1955 was a meager 1 percent, while by 1962 the NSF share had increased to 12 percent. Funds from all other federal agencies totaled 20 percent in both 1955 and 1962. The effect of NASA's growing budget for university-based research was just beginning to be felt in these years, but will be a major factor in the foreseeable future. These figures, incidentally, exclude funds for university managed research centers such as Los Alamos, Argonne, and the Jet Propulsion Laboratory.

A Double Purpose

Much research for the federal government is carried on outside universities, of course, but the federal projects in institutions of higher education serve a double purpose. Subcommittee members at the hearings found that if you scratch a federal research project at a university you almost always find an educational program. The federal agencies which are the major patrons of research are united in following the rationale that research is necessary to national security and graduate education is linked inseparably to research. In short, federal programs create a need for specialized manpower, so federal funds have to be used to assure an adequate supply of that manpower.

At the hearings James A. Shannon, director of the National Institutes of Health, gave this explanation of NIH's presence in graduate education:

"From the beginning it was recognized that effective support of research carries with it the obligation to enlarge the resource base for continued growth in the future. As a consequence, NIH programs have provided fellowships, have strengthened the structure of graduate education in health-related fields, have provided stable support for faculty expansion, and have stimulated the construction of health facilities through a matching grant program."

The AEC, NASA, NIH, and NSF follow generally similar policies and practices in their graduate education programs. All provide funds to assist graduate students, to develop faculty,

and to buy facilities and equipment. None of the agencies give scholarships to undergraduates.

The explanation by one official at the hearings that "undergraduate assistance is not justified in terms of research objectives" is reasonable enough, but another witness suggested a more subtle criterion when he observed that "there is no consensus on what the role of the federal government should be" on scholarships. In the last session of Congress scholarships were ensnarled in the controversy over the college aid bill, and the science agencies' record for smooth sailing is in part due to their having steered clear of such controversy.

Seeking details on federal assistance to graduate students, the subcommittee members found that the rapid growth in fellowship and training programs in the sciences, lags in reporting, and differences in definitions make up-to-date totals hard to come by. Mrs. Green at one session cited an estimate that there are some 23,000 grants under the federal fellowship program and 19,350 research assistantships. But conflicts in data presented at the hearings indicate that, at least until the staff report is published in January, only the roundest numbers should be relied upon.

NASA Bonus Program

NASA is just getting under way with its program of support for graduate education and this year is operating a comparatively modest program by sponsoring 100 predoctoral fellows—10 in each of 10 universities—in "space oriented" programs. The number of fellows is scheduled to be increased to 600 to 750 in the next academic year, and the NASA goal is 1000 new Ph.D.'s a year from the program.

NASA's forced-draft fellowship program can be regarded as one result of the decision to put an American on the Moon in the 1960's. Surveys showed that under present manpower conditions there would not be enough scientists and engineers to carry out the mission. The NASA training grants program is designed to stimulate the training of increased numbers of research scientists and engineers.

In an exchange on the effect of the NASA program on specialized manpower, Congressman Charles Goodell, who regularly joins the overwhelming majority of his colleagues in voting aye on science agency appropriations, observed, "We have a limited reseource here. We do not want to starve some of the extremely vital areas to feed a glamour program."

At the hearings, moreover, it was evident that subcommittee members suffered misgivings not only about the prospects of intragovernmental competition for talent, but were also concerned that heavy federal investment in certain parts of graduate education may be upsetting the natural balance in American education.

Is university teaching suffering because federal research funds draw top faculty away from teaching and good graduate students away from teaching fellowships? Are the humanities and social sciences hurt by federal subsidies to the sciences? What is the effect of the concentration of more than 90 percent of federal research and fellowship funds in 100 universities? Questions like these were raised repeatedly during the hearings.

Officials of the science-based agencies expressed concern at the hearings, but their own responsibilities make it difficult for them to work out solutions for such problems. AEC, NASA, NIH, and, to a somewhat lesser extent, NSF are "mission oriented." They have a job to do and must depend on the universities for research services and manpower. By law they must place research projects and award fellowships according to merit and if they concentrate grants and fellowships in particular universities it is because they decide that these institutions have the best facilities, the best faculties, and the best graduate students.

Attention from Congress

As the federal investment in science and in science education increases, attention from Congress is sure to increase and criticism is likely to follow two lines. The management of federal funds is sure to be the subject of greater Congressional scrutiny. Another set of questions will be asked about the effects of federal expenditures and federal manpower policies on the whole education system and on society.

The question of whether the rapidly increasing federal funds for research are being spent prudently has already been raised, for example, in connection with NIH by a subcommittee of the watchdog Government Operations Committee (*Science*, 13 and 29 July). Though there is no sign that Congress will change its liberal ways with the agencies which spend money on science and defense, there is likely to be steady pressure on these agencies for better management and stricter accounting.

Congress is likely to find it hard to come to grips with the broader effects of federal science on education and society. The lack of central control or coordination of federal education and science programs and the rapid increase of these programs has made the idea of centralization of authority appealing to some legislators. Mrs. Green several times during the hearings raised the question of whether it would be wise to ask the Office of Education to administer more education programs.

The answer from the science agency officials was that graduate education is inseparable from research and that whatever might be gained administratively in centralizing authority over graduate education would be lost qualitatively because of the close and unique working relationship the agencies have built up with the scientific community.

At the hearings, however, science agency officials conceded a need for greater coordination of federal programs, though all seem to want someone else to do the coordinating.

The Bureau of the Budget a few years ago requested that NSF serve as a focal point for administering all federal programs involving science fellowship awards. Two or three meetings a year are held, but the arrangement is not viewed as fully satisfactory.

Recommended at the hearings for the job of federal science coordinator was the new Office of Science and Technology established last spring and headed by Jerome Wiesner, who also serves as science adviser to the President. The OST, incidentally, was not represented at the hearings.

The structure of Wiesner's office includes the Federal Council for Science and Technology, which is made up of top representatives of government agencies involved in science programs, and the President's Science Advisory Committee, which is recruited from among distinguished scientists outside government to give advice on science to the President. These groups were described by science agency officials at the hearings as the only existing groups capable of overseeing federal science policy.

For the bigger job of supercoordinator to adjust the demands of federal science with the other needs of the nation there were really *no nominations*.

—JOHN R. WALSH