

The recommendations of the Moudy group† are rather lengthy, but they touch on most of the issues with which NSF will have to come to grips, and those that deal with general policy on curriculum development rather than with administrative matters relating specifically to MACOS are worth quoting in full:

I. With regard to course development and implementation, the Review Group recommends that the NSF continue pre-college science curriculum activities¹ with the following changes in understandings and procedures:

A. Recognition that the NSF and the Congress cannot avoid responsibility² for both quality and content of curricula that are federally funded through NSF.

B. Creation of an ongoing needs assessment program that will guide future NSF science curriculum activities.

C. Addition of representative parents to curriculum reviewing and evaluating groups during curriculum pilot-testing periods and all subsequent periods of federal funding, especially in the case of social science curricula.

D. Development of and adherence to complete and clearer policies in all NSF curriculum efforts, including but not confined to: (1) closer monitoring by staff; (2) better evaluation by staff and outside groups; (3) time schedules for support and subsequent phase-out of each NSF implementation effort; (4) consistent and no-favoritism policies covering curriculum promotion, marketing, and publication; and (5) avoidance, in implementation activities, of undue influence, direct or indirect, over local decisions on curriculum adoption.

E. Formal adoption by NSF of acknowledgment and disclaimer statements, and enforcement of same.

F. Establishment of a clear Congressional policy on all royalty income and its disposition.

¹The review group was not unanimous on this point. Two members felt that the NSF should confine its curriculum work to the natural sciences and mathematics, leaving the social sciences to others. One member felt the NSF should stay out of curriculum entirely.

²Just how Congress should exercise its responsibility is discussed later. See also Addendum.

A primary thrust of the recommendations of the Moudy group is that NSF should assume greater responsibility for both the quality and content of the courses funded by the government.

For nearly two decades the foundation has followed policies which resolutely skirted this issue. When the first curriculum development projects were launched in the middle 1950's, it was in an atmosphere fraught with fears that the projects would lead to centralized federal control of curricula. To forestall the critics, NSF treated curriculum development projects as much like research grants as possible. That is, NSF sought good proposals from good people and then provided them considerable freedom to develop their ideas. The agency monitored the materials for

scientific accuracy but made it clear that the completed courses were not recommended by NSF and argued that choices of curriculum were entirely the responsibility of local school authorities.

NSF officials did recognize that they were intervening in the marketplace and tried to develop procedures which were fair and satisfactory to commercial publishers. At the same time, pressure was applied by Congress on NSF to make sure that the expensive and innovative programs did not stay on the shelf. As a consequence, NSF has spent considerable amounts of money on "implementation" programs, designed to provide information and teacher training course materials without crossing the line into subsidizing the adoption of federally sponsored courses.

It would be unrealistic to believe that NSF disclaimers were taken at absolute value and federal support did not give the federally sponsored courses some prestige, but NSF managed to walk a rather narrow line fairly successfully. The strategy worked best during the time when NSF was underwriting mathematics and science courses. Although there were skirmishes about sex education and evolution in the life science curriculum, the new courses won wide acceptance.

New stresses might have been anticipated when NSF moved on to support of curriculum projects in the social and behavioral sciences in the middle 1960's, but NSF rather stolidly plodded on, assuming that the same formula of limited responsibility would work. The impact of a course like MACOS, which uses a multimedia mix of ethnographic films, filmstrips, tapes, role-playing "games," and other innovative approaches, could appear to the outsider to be heavy on sex and violence, particularly if the material is presented selectively. Then there were fair questions raised about whether there could be any assurance that the course would always be taught by teachers properly trained and competent to handle it and even whether some of the material was really suitable for all 10-year-olds.

Now there will obviously be pressure on NSF to develop a means for reviewing the content of its courses. The House Appropriations Committee has already demanded that NSF develop a clear statement of national needs in the curriculum field to guide its program, and also make a substantive review of the new courses under development before they are implemented. The foundation is moving to oblige, but there is reluctance to shift from affirming the scientific accuracy of material to certifying the educational value, as GAO suggests, or to applying some general seal of approval.

NSF has up to now shunned giving such approval because it would be surely interpreted as a federal endorsement of a course, something that would horrify the original critics of the NSF who feared federal intervention.

So NSF is faced with a kind of Catch-22 on course content and is likely to be asked to make more than minor administrative and management changes. A lot of time and effort have been spent in telling NSF it is accountable; now Congress and the foundation have to work out how.

—JOHN WALSH

APPOINTMENTS

Alan A. Johnson, chairman, department of materials science and engineering, Washington State University, to dean, Graduate School, University of Louisville. . . . **Nick L. Lund**, acting chairman, psychology department, University of North Florida, to chairman at the university. . . . **Venkat N. Reddy**, assistant director of the Institute for Biological Sciences, Oakland University, to director, at the university. . . . **Lloyd Guth**, National Institutes of Health, neuronal development and regeneration, to chairman, department of anatomy, School of Medicine, University of Maryland. . . . **Robert Dickes**, professor, psychiatry, Downstate Medical Center, State University of New York, to chairman, department of psychiatry, at the center. . . . **Vincent Lanzoni**, associate dean, medical school, Boston University, to dean, College of Medicine and Dentistry of New Jersey, New Jersey Medical School. . . . **Michael Sela**, head, Weizmann Institute's chemical immunology department, to president of the institute. . . . **Ellis B. Page**, University of Connecticut, Storrs, to president-elect, division of educational psychology, American Psychological Association. . . . **William H. J. Douglas**, associate scientist, W. Alton Jones Cell Science Center, to associate director, education, at the center. . . . **Thomas A. Gonda**, medical director, Stanford University Hospital and Clinics, to chairman, psychiatry and behavioral sciences department at the school.

Erratum: In a recent report by M. Locke and P. Huie [*Science* **188**, 1219 (1975)] four words were left out in note 7, line 19. The sentence should read, "Staining on the section rather than in the tissue gave only a generally enhanced contrast without specificity."—Ed.

Erratum: In the article "Scientific Freedom and Responsibility" by J. T. Edsall [*Science* **188**, 687 (1975)], sentence 2, paragraph 4, column 1, page 689, should read: "Its use brought a dramatic halt to a typhus epidemic in Naples in World War II; its initial success in destroying agricultural pests was spectacular."

Erratum: On page 656 of the 22 August issue in a description of the Corning model 175 Blood Gas Analyzer, the fourth sentence from the end should have read, "It conducts a one-point calibration every 30 minutes. . . ."

†Other members of the Moudy group are former Congresswoman Edith Green, Elam K. Hertzler, Rocco A. Petrone, Gerard Piel, Clare W. Schweickart, and James H. Zumberge.