

There is considerable evidence associating amosite and chrysotile asbestos with cancer in occupationally exposed persons (1). The carcinogenic potential of such fibers has been repeatedly demonstrated in animals (2). Recently, it has been suggested that environmental, household, and bystander exposures, which are low-level, may account for the asbestos-related disease mesothelioma (3).

Daily use of gas chromatographs with asbestos-containing insulation may expose personnel to asbestos fibers, and asbestos disease risk may be involved. Either substitute material or asbestos block in which fiber has been sealed into place should be used by the manufacturers. Furthermore, instruments which have exposed asbestos insulation should be so labeled, with appropriate warnings permanently and prominently displayed. Protective respirators should be worn during dust-releasing operations.

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References

1. I. J. Selikoff, J. Churg, E. C. Hammond, *J. Am. Med. Soc.* **188**, 22 (1964); I. J. Selikoff, E. C. Hammond, J. Churg, *Arch. Environ. Health* **25**, 183 (1972).
2. P. Bogovski, V. Timbrell, J. C. Gilson, J. C. Wagner, Eds., *Biological Effects of Asbestos* (International Agency for Research on Cancer-World Health Organization, Lyons, France, 1973).
3. H. A. Anderson, R. Lilis, S. M. Daum, A. S. Fischbein, I. J. Selikoff, *Ann. N.Y. Acad. Sci.*, in press.

Grade Inflation

I completely agree with Amitai Etzioni's editorial (10 Oct. 1975, p. 101) regarding the inflation of college grades. There is no doubt that it is occurring, that it is serious, and that it makes no sense.

In line with Etzioni's suggestion that statistics about grading practices be widely circulated, I propose that these statistics be put exactly where they belong: on students' transcripts. This could be done if, along with a course's title, the transcript included the two grades received by both the 25th and the 75th percentiles of the students in the class. This system would at least give those professors who follow traditional grading patterns the privilege of reporting in some way the meaning of their grades. It might also place some pressure on other professors to keep statistics and to use a broader palette of marks in evaluating their students.

There are, naturally, very good reasons for not tampering with the traditional

format of college transcripts. However, we must recognize that the system is breaking down. The transcript is failing to provide the information it was intended to convey, and a revision is in order.

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Etzioni's editorial, "Grade inflation," does not consider a position toward grades which is becoming increasingly prevalent: namely, that teachers structure their courses so that low grades rarely occur because the vast majority of students learn the specified material. Recent advances in behavioral technology, based on rigorous scientific research (1), have rendered this position a very reasonable alternative to both the "progressive" and the "traditional" positions mentioned by Etzioni. One should not censure any professor for being among those "contributing most to skewing the grading curve upward" without first establishing that his or her pattern of high grades is not due to the use of highly efficient teaching methods.

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References

1. See, for example, J. A. Kulik, C.-L. Kulik, K. Carmichael, *Science* **183**, 379 (1974); J. M. Johnston, Ed., *Behavior Research and Technology in Higher Education* (Thomas, Springfield, Ill., 1975); B. A. Ryan, *PSI: Keller's Personalized System of Instruction: An Appraisal* (American Psychological Association, Washington, D.C., 1974); J. G. Sherman, Ed., *Personalized System of Instruction: 41 Germinal Papers* (Benjamin, Menlo Park, Calif., 1974); B. F. Skinner, *The Technology of Teaching* (Appleton-Century-Crofts, New York, 1968).

In his editorial on grading, Etzioni neglects to mention one serious problem with the current (lack of) system. At many schools students grade the professors, only the reports are called "evaluations." Students tend to reward professors who are generous with A's, and school administrators often consider the students' evaluations before granting tenure or promotion.

While I do not think the student evaluations should be discontinued, I have seen this positive-feedback loop in action and consider it a major contributor to the grade inflation Etzioni discusses. As long as students are under pressure to get good grades and professors are under pressure to get good evaluations, can we really expect the two groups to do other than trade good marks?

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Etzioni's editorial on grade inflation stops short of the basic issues. The controversy over grades is pointless unless the purposes grades are to serve are examined. Presumably, the open discussion Etzioni calls for would start with an examination of purposes, but that seems to be rare among faculty committees on grading.

The two dominant reasons for grading are to inform students about their progress in learning and to certify student accomplishment for the benefit of graduate schools, fellowship award committees, and employers. A faculty committee looking for ways to accomplish these purposes might arrive at the present grading system, but it seems unlikely because the two purposes have different requirements. Information that will help students learn must be specific, timely, and frequent; it should provide a model of the desired learning; and it should reflect the goals of the professor and, if possible, the student. Information valuable to persons making selection decisions about students must usually be comprehensive, reflect general competences, and pertain to the needs of the selection agency. That graduate and professional schools, employers of all kinds, and committees awarding honors or fellowships should all be concerned with the same kinds of accomplishment seems unlikely.

If the energy devoted to arguments over the form or desirability of grading were spent developing ways to accomplish the purposes for which grades are currently used, the controversy over grading might subside to the mutual satisfaction of most of those concerned.

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Ozone Healing

In our report on the possible effects of tropospheric-stratospheric feedback upon the stability of stratospheric ozone (26 Dec. 1975, p. 1294), after we had corrected and submitted galley proofs, a major printing error was generated. The first sentence of the fifth paragraph on page 1295 should state that the CH₄ feedback will result in an approximate 10 (ten) percent recovery in atmospheric O₃. Reference 18 in our report will discuss this healing process in more detail.

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