therefore, have been the result of sitting quietly.

Whether or not the subjects were meditating properly is difficult to determine, but all subjects were trained and reported having had a "good" meditation. It follows, say the researchers, "that, while a psychological benefit may be derived by its practitioners from the act of TM, it cannot be expressed in terms of the biochemical parameters measured by this study." They suggest that "meditation does not induce a unique metabolic state but is seen biochemically as a resting state." □

℞ education: Back to basics (sort of)

After six years of conducting surveys that have shown American students and adults sadly deficient in knowledge of the world around them and in the fundamental skills of citizenship and daily life, the Education Commission of the States (ECS) has offered a tentative prescription to remedy the situation: Teach more "basics," but carefully choose which ones.

Indeed, part of the problem appears to be overemphasis on some "basics" at the expense of others. Educators from a National Council of Teachers of Mathematics panel asked to review the ECS results cautioned against "more overemphasis" on simple computation and urged a sharper focus on solving percentage and consumer problems. Similarly, University of Southern California English professor W. Ross Winterowd sees no need to increase work on spelling and punctuation, but he worries about "the strong evidence that coherence and the ability to develop ideas [in composition is perhaps] evaporating."

Such conclusions are fraught with irony, since most of the pedagogical changes of the last decade or so have aimed at increasing "understanding" while sparing the student repetitive exercise. The changes have aimed at lowering cultural barriers, but Winterowd sees instead a "greater polarization of abilities [that is] perpetuating a cultural elite." Finally, in an age of supposed sexual frankness, it is particularly ironic that one of the weakest areas of scientific knowledge among 17-year-olds is human reproduction—only 3 out of 10 students correctly answered a question about the menstrual cycle and only about half knew that an embryo develops in the uterus.

In science, as in the other fields, academic knowledge appears to be strangely disjointed from the rest of life in the student's mind, despite increased talk of "relevance." Two-thirds of 13-year-olds know that seeds come from the flower portion of a plant and even more can identify the function of lungs and nerves, but a majority still believe one should apply cold packs to a person who has fainted, which could actually prove harm-

ful (the person should be kept warm).

The ECS message can be underscored perhaps most poignantly by simply reproducing a brief essay by a 13-year-old (recalling that "literacy" is sometimes defined as a sixth or seventh grade reading and writing level): "A dog is a anemal and does have a bran. Haves big teeth, a nose that he can smell with. A dog, it come in all size, a dog wake on four legs. A dog have two eye, he has ears and has hair. This dog can see good at night."

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In a separate development, the Carnegie Council on Policy Studies in Higher Education has released a study outlining university curriculum changes over roughly the last decade. Its main conclusion: So-called "general education"—courses required of all students to assure a rounded background—has significantly declined, from 43.1 percent of the undergraduate curriculum to 33.5 percent.

Science and mathematics have been particularly hard hit. The proportion of institutions requiring mathematics has dropped from 33 to 20 percent. Students have tended to use their elective options to take social science courses rather than study the natural sciences, apparently because the latter are considered more difficult and because of "the loss of the high status of science during the middle and late 1960s." □

Academic research data confidential

In a unique legal case, a U.S. District Judge in San Francisco has upheld the right of a Harvard professor to maintain the confidentiality of information obtained in the course of his academic research. The data in question were accumulated by Marc J. Roberts, professor of political economy, on the manner in which public utilities make environmental decisions.

The plaintiff, a company which supplies environmental equipment, claimed, among other things, that it had been defamed in the course of interviews conducted by the professor with employees from Pacific Gas and Electric. Prior to the interviews the Harvard scholar had written a pledge of confidentiality to the California utility.

Daniel Steiner, general counsel for Harvard University, believes the court's ruling to protect academic research data is without precedent. In his decision, Judge Charles B. Renfrew said, "Society has a profound interest in the research of its scholars . . ." and "compelled disclosure of confidential information would, without question, severely stifle research into questions of public policy. . . ." It is likely the decision will primarily affect the social scientist, whose type of research is most vulnerable to conflicts of this sort. □

Math 'conflict' long resolved

Contrary to assertions made in several publications recently, there is no dramatic mathematical dilemma in homotopy theory. Recent reports advertised that a theorem in that discipline had been proven by one pair of mathematicians and disproven by another—what a June 2 New York Times editorial chose to call a "crisis in mathematics." The editorial was apparently inspired by an article in the June 4 SCIENCE which claimed that the contention is an outstanding problem in mathematics. Actually the "dispute" was transitory and has been resolved since July 1974.

Homotopy theorists are generally concerned with studying curves and surfaces that are related through a continuous deformation process and their properties which survive the transformation unaltered (so-called "invariant properties"). The surfaces so related, such as all the closed curves that can be drawn on the surface of an ordinary sphere, constitute a "homotopy class." The ensemble of all such classes in a given dimension in turn form a "homotopy group." The theorem in question involves homotopy groups of spheres (relevant to spherical surfaces).

The theorem's proof, which was ultimately vindicated, is due to Emery Thomas of the University of California at Berkeley and Raphael Zahler of Rutgers and was published in the JOURNAL OF PURE AND APPLIED ALGEBRA in early 1974. Meanwhile, Shichirô Oka of Kyoto University and Hirosi Toda (a leading contributor in this field) of Hiroshima University had written but not published a conflicting "disproof." The discrepancy centered around their claim that one of the group elements in the proof was equal to zero. The original proof was later corroborated by J. Frank Adams of the University of Cambridge after which the Japanese mathematicians found an error (July 1974) in their work and published the final results in the HIROSHIMA MATHEMATICAL JOURNAL (5:115) in early 1975. In the article's introduction the authors acknowledge, "the publication (of this paper) has been postponed by a contradiction to the result of E. Thomas and R. Zahler. We have reexamined our original proof, and after crucial investigations we have concluded the opposite result."

The "dispute," what there ever was of one, is not unlike the initially conflicting results often obtained in the midst of scientific research, Zahler says. Recent publicity blamed the "crisis" on exceedingly long and esoteric proofs which it claimed were becoming typical in mathematics; "ours just took 13 pages," Zahler explains. He has sent letters of rebuttal to bot the New York Times and SCIENCE magazine. □