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Teaching "Science Learnings"

A chapter on elementary-school "science learnings," as the author likes to call it, in a recent volume of essays by professors of education contains much with which we agree. The volume is *Modern Methods in Elementary Education* (Henry Holt and Company), edited by Merle M. Ohlsen of the University of Illinois, and the chapter is by J. Myron Atkin, of the same university. It is entirely sensible, as the chapter suggests, to teach the simpler aspects of a subject before broaching the more complex aspects. And we concur that a good science program must have materials for experimentation. But we cannot give the chapter our full endorsement. Atkin, in his enthusiasm to establish that pupils should be taught things that have meaning for them, uses a few expressions whose connotation may lead beginning teachers into unrecommended patterns of pedagogy.

One place where the reader may be led astray is in the discussion of breadth versus depth in "science experiences." The need is cited for youngsters to "have experiences with electricity in the first grade, again in [the] second, more in [the] third." The notion of a continuing program of study is good, but we must caution the reader that by "experiences with electricity" Atkin means only what in more prosaic language we would call "studying electricity"—using well-insulated magnets, buzzers, and the like. He is not suggesting that teachers should administer shocks to their pupils. Admittedly, however, such procedure would make sense in a historical approach to teaching science, for it was just by giving himself shocks and comparing their strength that Cavendish in the 18th century was able to anticipate some of the discoveries of Ohm and Faraday.

The account offered of a hypothetical classroom also requires interpretation. An enlightened teacher is described as listening to his pupils' reports on their recent efforts at testing hypotheses. The children "told of hypotheses they had formulated and tested. Some hypotheses they had tested by simple experimentation. Some they had tested by going to books or adults." Here the beginning teacher should not be awed by the achievements of his pupils as they "test hypotheses." Simple experimentation is simple experimentation, and in going to books and adults the children most likely are doing what we more ordinarily would call "looking things up" and "asking questions." We do grant, however, that by these activities the boys and girls really *could* be testing hypotheses: the hypotheses, for example, that they can read and that grown-ups do not know everything.

A final word of caution concerns the general argument of the chapter; this, as stated by the editor in an introductory note, is that even young children should be taught "to apply the scientific method in solving their everyday academic and personal problems." A timely example of scientific method applied to personal problems, although on a national level, is a theory recently worked out by Senator Muskie of Maine. According to the theory, in the coming presidential election, either Humphrey or Kennedy could beat Nixon, but Rockefeller could beat both Humphrey and Kennedy. The Senator notes that the candidate with the longest name has the best chance of winning: Hoover beat Smith; Roosevelt beat Hoover, Landon, Willkie, and Dewey; Truman beat Dewey; and Eisenhower beat Stevenson. Our final word to beginning teachers, and to the youngsters too, is, do not bet on the election.—J.T.