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SCIENCE

A Bubble in the Educational Pipeline

Scare stories about unemployed scientists and engineers appear to have created substantial reaction among college-age men and women, as shown in enrollment figures for fall 1971. While graduate school enrollment last fall rose 2 to 5 percent (the latter includes the professional schools), enrollment dropped 2.7 percent in the physical sciences and 7.8 percent in engineering, according to the Carnegie Commission on Higher Education. Total undergraduate enrollment rose 2.4 percent at 4-year colleges and universities, but dropped 1.7 percent in the physical sciences and a whopping 17.1 percent in engineering, following a drop of 1.7 percent a year earlier, and a drop of 2.4 percent in fall 1969.

In the physical sciences, the number of bachelor's degrees in chemistry dropped in 1970 from the previous year and is expected to stay about level through 1972. Unexpectedly large enrollment in first-year and organic chemistry in the fall of 1971 may raise the number of baccalaureate degrees by 1974.

Undergraduate physics enrollment began dropping in the 1969–70 school year, and has continued to drop each year since. Junior-senior enrollment in 1968–69 totaled 14,678. In the fall of 1971, it was 12,755.

Looking ahead a few years, we can expect fewer degrees to be granted, first at the undergraduate and then at the graduate level, in the physical sciences and engineering, although the college-age population will have increased by 3,316,000 between 1971 and 1975. It is not possible to be sure whether this decrease in annual entrants will bring the present surplus of scientists and engineers into balance with the demand or will tip the scale in the other direction. Accurate forecasts are difficult because of the number of variables involved, including particularly changes in the general economy and in the direction of governmental support of scientific efforts. However, the needs for technologically trained experts to meet national and social goals will not have diminished by the time these smaller classes emerge from the educational pipeline. We will still be trying to erase urban blight, produce adequate clean energy, purge the environment, create effective transportation systems, and provide adequate health care, while maintaining our national defense and continuing some level of space exploration. If the state of the economy and a reordering of national priorities has enabled us to convert these needs into demand (meaning jobs), the supply of technologically trained specialists may again be too small in a few years.

Today's students are choosing areas of major study based at least in part on their reaction to today's job market. Their choices will not affect this job market (unless they leave school to seek employment at a lesser skill level), but will affect the supply 4 to 8 years hence.

Without minimizing the seriousness of unemployment among trained specialists, we should be careful not to overemphasize the problem of displaced scientists and engineers lest we diminish our future ability to meet our needs. Unemployment also exists today, and in somewhat greater proportions, among those who majored in the humanities, the social sciences, and education—and the highest unemployment rates of all are found among young men and women with the least education.

—BETTY VETTER, *Executive Director, Scientific Manpower Commission, 2101 Constitution Ave., NW, Washington, D.C. 20418*