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## The Ph.D. "Glut"

There apparently is little we can do directly to affect the demand for students receiving Ph.D. degrees. Some have hoped to increase demand by encouraging early retirement, altering the nature of the tenure contract, encouraging more part-time employment, and the like. Such actions can be expected to have only relatively minor effects on the demand for new academic employees with Ph.D.'s. The general state of the economy undoubtedly plays the major role in encouraging expansion or contraction of the job market, but we certainly can exert little influence on that.

We need to be better informed, however, about the nature of and trends in demand. We have been remiss in not following more closely how our degree students fit into the general employment market. This is the type of information we need to properly advise new applicants for graduate study. The availability of such information will almost certainly affect supply, and it may give us new insights in how we can affect demand in the future.

There are two less direct ways in which we can affect demand for Ph.D.'s. First, we can make more widely understood the utility of doctoral education, thereby creating demand where none now exists. Second, we can hope to make the expectations of students more realistic, thereby broadening the scope of acceptable employment goals. Each of these has promise for narrowing the gap between supply and demand, and each is something we can hope to affect by our own actions.

We provide added value to the individuals who go through our programs. But there is widespread misunderstanding of even what constitutes the value that is added. There is a general misconception that the main value added is knowledge of a highly specialized nature represented by the title of the dissertation. This knowledge base is by no means the major part, or even a major part, of the real value the Ph.D. received from study.

We are engaged, I believe, in ensuring that each individual possesses a background and a set of tools that enable him or her to define, to attack, and to solve new problems. We use the case-study approach in a single, narrow area as the means of teaching problem-solving. Education is a ladder used to gather fruit from the tree of knowledge, not the fruit itself.

That this principle is true is strongly indicated by what happens to individuals who receive a doctorate. Few of them continue to work in the narrow area represented by the dissertation title even for a time as short as several years, although most continue to work in the same general field. The methodology learned in pursuing one case study is usually transferred to other such studies within the basic discipline.

The fact that we educate problem-solvers is not widely appreciated. Society needs problem-solvers more than ever before, but there is often no recognition that our output of Ph.D.'s is a source of prospective candidates for positions that require this attribute. Our product is adaptable to many end uses. We are remiss in not letting others, especially the students themselves, know how adaptable they really are.

It is obviously important for the student to understand the fundamental nature of the education received. Failure to do so contributes to false expectations. The Ph.D. "glut" was a problem in part because many of those who received their degrees in the critical years failed to obtain the kind of employment they felt was befitting for an individual who had worked hard for that degree over many years. Few companies or institutions looking for employees really understood the attractiveness of bright young problem-solvers for use in a wide variety of employment areas. Were students and prospective employers to make a more realistic appraisal of the values added by graduate education, the problem of the Ph.D. "glut" would be substantially diminished.—HARRISON SHULL, *Professor of Chemistry, Indiana University, Bloomington 47401*.

Extracted from an address presented to the Conference of the Association of Graduate Schools, Austin, Texas, 2 October 1978.