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ABSTRACT

The 1960's saw a great deal of talk about changing the pattern or structure of graduate education, but very little if any action. The 1970's will be radically different, not only because of budgetary constraints, but also because of the oversupply of PhDs and excess capacity. There are three basic factors that contribute to the demand for new faculty: replacement, expansion of higher education, and improvement of the quality of faculty. Only the second factor is crucial to the demand for PhDs, since the other two factors remain relatively constant. The expansion factor depends on the size of the college age group, and this group is growing at a smaller rate, and will shrink by more than 2.75 million in the 1980 to 1988 period. Another factor affecting the expansion of enrollment is the college enrollment and retention rate. Though this has been steadily increasing, this increase will also slow down as it reaches its potential maximum of about 70 percent of the college age population. All this will mean that the demand for college teachers will steadily decline. Graduate schools will have to cope with this situation by cutting back on graduate programs, and exercising stricter controls over graduate enrollments. In addition, it might be advisable to limit federal support for graduate education to 75 selected universities. (AF)

In avoiding an overreaction to surpluses on the one hand, we must keep in mind that some of the current voices advising us that "all is well for the decade if we just leave things alone," are also the same voices which during the 1960s misled us into thinking we would continue to have serious shortages of doctorates in the 1970s.

On the other hand, it would be foolhardy to take the position that drastic cutbacks should be made in doctoral production across the land. Rather, the need is for a careful assessment of basic needs and a careful allocation of resources to meet them. Modest adjustments of the kind recommended here are in order in many states. Institutional governing boards, statewide coordinating boards, as well as governors, legislators, and regional accrediting long-range view—at minimum but 10 years of massive effort to ols to meet 1969 needs. Now it e such dramatic reductions in to place ourselves in the 1980s e found ourselves in the 1960s.



# GRADUATE EDUCATION IN A DECADE OF RADICAL CHANGE

ALLAN CARTTER

For the last ten to fifteen years there has been a great deal of talk about changing the pattern or structure of graduate education—but little action. Meetings of graduate deans and other educational administrators have debated—ad indigestum if not ad nauseum—the revival of the master's degree, the need for a teaching doctorate, a track system for those intending teaching or research careers, over-specialization, imbalance between the sciences, the arts, and humanities, etc. In the world of the 1960s it is not too surprising that these debates achieved little consensus and less implementation, for we were all living in a prosperous world of seemingly constant development and expansion.

The 1970s are going to be dramatically different. For the next few years the budgetary constraints upon most universities are going to be painfully burdensome. The availability of monies from external sources to support new programs will be minimal and the sharp decline in fellowship support for graduate students from federal sources will tend to place additional burdens on the university just when its traditional forms of support—from tuition, private gifts, and state legislatures—are likely to be shrinking in real terms.

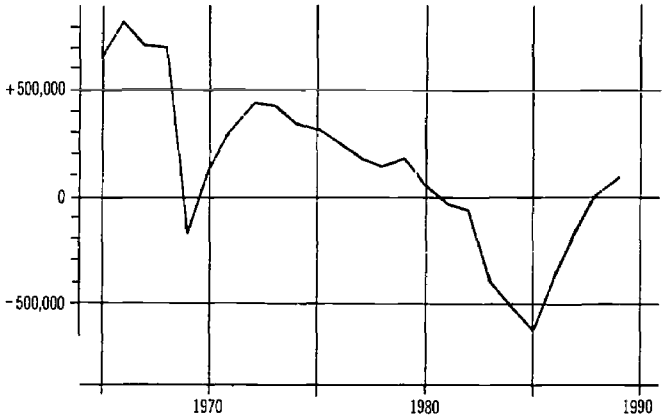
Perhaps even more dramatically different will be conditions in the academic labor market. We have lived for thirty years in a period where highly trained talents were in critically short supply; we have now entered a period where our attention will be forcibly shifted to the problems of oversupply of PhDs and excess capacity.

One can draw an analogy between graduate education in the arts and sciences and an investment goods sector in industry. A certain amount of output is always required merely to compensate for obsolescence and capital consumption in industry. In like manner trained teachers and researchers are required each year to compensate for deaths and retirements in the total stock of PhDs. In addition, when the total national output is expanding, investment must be made in new facilities to produce that output; the amount of that investment depends upon the rate of expansion expected for total output. Similarly, the demand for new PhDs is to a considerable extent a function of the rate of expansion of higher education. Thus, when the rate of growth in total enrollments begins to drop—as it is now doing for the first time in a decade—the absolute level of demand for new teachers to meet the expansion drops. Graduate education suffers from a kind of whipsaw effect; shortages are particularly marked during periods when enrollment is expanding at an increasing rate, and surpluses are likely to mount rapidly when the rate of expansion declines. A third source of investment demand is the upgrading of the quality of fixed capital. The educational counterpart is the improvement of the quality of faculty, ordinarily reflected in college teaching by a rising percentage of teachers with the doctorate.

Thus, there are three basic factors that contribute to the demand for new faculty: replacement, expansion, and improvement. The first of these tends to remain relatively constant over time. If there were an even distribution of faculty through the various age levels, the replacement rate would approximate 2.5 percent. In fact, with an expanding, and therefore relatively young, faculty the national rate will remain around 1.75 percent for the coming decade. The third factor, improvement of quality, is largely tied to the other two, for unless one displaces less well prepared current teaching staff, the chief opportunity for improvement is when replacing retiring faculty or when hiring to meet expansion. In fact, in times of a plentiful supply of new PhDs (such as between 1950–54) improvement ordinarily occurs only imperceptibly, absorbing not more than an additional 5 percent of the annual output of doctorates.

The expansion factor is the key to sharp variations in the demand for PhDs, accounting for three-fourths of all teachers hired in the last decade. The year-by-year growth in enrollments depends upon the size of the college age group, and the college attendance pattern. As Figure I clearly shows, the age group is growing at a declining rate, and will shrink by more than 2.75 million in the 1980 to 1988 period. This year's newborn will be the class of '92, and not within that timespan can we expect any relief from rising birthrates. Few people realize that the under

FIGURE I
ANNUAL CHANGE IN SIZE OF 18–21 AGE GROUP




five population in 1969 was 12 percent below its 1965 level; when that age group arrives at college about 1980 it is easily predictable that they will be able to pick and choose among many hundreds of institutions suffering from acute excess capacity.

The other major factors affecting the expansion of enrollment are the rate at which the age-eligible young men and women enter college, and their retention rate after entrance; these combined factors show up in the ratio of college enrollment to the college-age population (Figure II). While this ratio has been steadily rising, I believe it is approaching the point where it, too, must slow down. By 1970 approximately 78 percent of the age group are graduating from high school. This is up 17 percentage points from 1955, and it is apparent that it can no longer rise at the same rate as it approaches the 100 percent maximum. By 1970 approximately 72 percent of high school graduates are entering some kind of formal post-secondary education—63 percent in degree credit curricula. This percentage is also up nearly 17 percentage points since 1955, but this increase, too, must slow down as it approaches 100 percent of high school graduates. It is my optimistic prediction that by the end of the 1970s we will see about 85 percent of the age group graduating from high school, and 80 percent of that number entering college. This would bring the entrance rate in relation to 18 year-olds from its present 56 percent to about 68 percent; close to its potential maximum.

The combination of a slowing down in the growth rate of the age group (in fact, a slight decline in the early 1980s), a slowing down in the rate of increase in college entrance, and an expected, relatively constant retention rate, add up to a flattening out of expected total college enrollment by the end of this decade. Thus, the derived demand for new college teachers should consistently decline over the coming decade.

I see no way of interpreting this as anything but bad news for the universities and their graduate schools for the foreseeable future. The Office of Education projections now anticipate 60,000 by 1980, and Lewis Mayhew's canvass of institutional expectations on the part of deans and presidents suggests a figure closer to 70,000. Thus, if my projections seem too pessimistic it is because the conclusions are based on a conservative projection of PhD degrees that anticipated only 50,000 such degrees annually by 1980.

Clearly the higher educational system needs some signals, and some means must be found to restrain many of the newly developing institutions from engulfing the doctoral market. Voluntary cutbacks, such as a few distinguished private universities have made this year, are one avenue. Stricter controls over graduate enrollments by state coordinating boards are another. It has been suggested in some quarters that the federal government, rather than reducing its support of graduate education across the board and exacerbating the financial crisis of many of the large universities, should instead indicate that federal policy for the next decade will be to select perhaps 75 universities that will be eligible for federal funds. These designated "national universities" would be sheltered by federal support programs, presumably with more or less frozen enrollments, and those developing, or lesser quality, graduate schools would have to phase down their graduate commitment or find external sources of support. I believe such a move would be in the national interest in preserving the strength of the major graduate centers, but it is not likely to be greeted with joy by the new and aspiring institutions. However, the alternative of gradual financial starvation, even if shared equitably, is even less attractive.

In the long life of business corporations or industries, occasional recessions are painful but socially beneficial correctives. This could be the case with graduate education. We have been perhaps too comfortable and complacent for fifteen years or more, and it may take enforced reassessment of our educational goals and procedures to revitalize higher education. I think it is quite evident that more educational innovations emerged in the 1930s than in the preceding decade. Necessity is often the mother of invention. I suspect we are entering a decade where we shall have to test that old adage.

FIGURE II
RATIO OF ENROLLMENT TO COLLEGE-AGE POPULATION