Graduate Education--Responses to Criticisms

Graduate programs in the United States are respected and emulated worldwide, and are an international magnet for talented students. At a time when American leadership and prosperity depend increasingly on the creation and use of knowledge, graduate education provides our country with an important competitive advantage. Our unique system of combining graduate education with cutting-edge research strengthens American research, while also producing highly educated individuals who will become the next generation's scientists, teachers, and leaders in government and industry.

Despite these evident strengths, American graduate education is receiving careful scrutiny both within universities and among those responsible for national policy. Policy makers have raised questions about the place of foreign students in U.S. graduate programs, a possible oversupply of Ph.D.s, and the nature of Ph.D. education at a time of great change in American society.

What Is the U.S. System of Graduate Education?

Following World War II, the United States made the decision to support a large portion of its fundamental research through universities. That decision invigorated research with the energies, abilities, and fresh perspectives of bright young students, while also creating a fertile training ground for future researchers. Graduate education in the U.S.-particularly doctoral education-became a combination of study and apprenticeship. Along with taking courses and seminars, graduate students work with faculty mentors in teaching and research. This is a dynamic partnership that matches the skills of experienced faculty members with the excitement and creativity of young colleagues.

Why Is Federal Support Important?

There is a strong federal interest in assuring that a sufficient portion of the most talented of today's college graduates become the Ph.D.s-and therefore, the researchers, faculty members, and leaders in other fields-of tomorrow. These students are young adults with many competing opportunities before them, from immediate employment to professional school programs that may lead to lucrative professional or business careers. In general, graduate students are beyond the age when their families can be expected to support them, and many of them have borrowed heavily to finance their undergraduate educations. Without financial assistance, they generally would be unable to undertake or complete the rigorous work needed to attain a Ph.D. Financial support is particularly important for individuals from groups that remain underrepresented in graduate education.
Just as federal investment in basic research serves the nation by filling a crucial gap that neither states nor industry will fill, federal investment in graduate education serves the same essential role. Talented students who receive graduate degrees are a highly mobile national resource. States, therefore, often are reluctant to invest in graduate education fellowships. Similarly, industry investment in graduate fellowships is difficult to justify since a company cannot be sure that it, rather than a competitor, will receive the dividends from the investment. When the federal government makes the investment, the nation reaps the dividends regardless of where the recipient of the fellowship ends up working.

**Why Are There Concerns about Federal Support of Graduate Education?**

Understandably, federal agencies try to stretch their dollars as far as they can. Sometimes the agencies that sponsor research try to separate research and educational costs and support only the costs of "research." But research and training of graduate students in universities are inextricably part of the same enterprise. When a student is conducting closely supervised research, he or she is learning how to conduct research and producing research results. Graduate teaching and research assistants are fundamentally students, learning by doing in the apprenticeship relationship. The agency benefits not only from the additional energy and creativity that is brought to the research, but from the training of a new generation of researchers. One of the great strengths of the American system is that graduate education and research are not separate activities—each enhances the other—and to try to separate them could weaken each of them. Occasionally, federal agencies try to reduce their contribution to the costs of graduate education in the hope that either students themselves or the universities will make up the difference. But graduate students already have foregone other forms of employment and may be burdened with substantial debt. Universities are hard pressed to make the contributions beyond the considerable investments they already make to graduate education.

**Are We Graduating Too Many Ph.D.s?**

U.S. graduate programs awarded more than 42,700 doctoral degrees in 1997. The number of new doctorates has grown steadily since the mid-1980's, after declining slowly in the previous decade. Despite this growth and a decline in tenure-track faculty positions in recent years, the overall unemployment rate for Ph.D. recipients remains low. The unemployment rate for Ph.D.s in the humanities was 3.3 percent in 1995, the most recent year for which data is available. The unemployment rate for Ph.D.s in the physical sciences, engineering and social sciences in 1997 was just 1.2 percent, a drop from 2 percent in 1995. In part, this reflects the growth in demand for individuals trained beyond the bachelor's degree in a number of information-dependent or research-dependent industries in which the U.S. is determined to be a world leader.
Even so, there are Ph.D. recipients who are underemployed, disappointed at not finding an academic tenure-track position, or employed in areas that do not match their expectations. To address these concerns, universities have been expanding their career guidance and placement programs to help students qualify for and explore a wider array of career options. Universities are also examining ways of making the Ph.D. degree more flexible, while still ensuring rigor and appropriate experience in research and teaching. In some cases, graduate schools have made conscious decisions to reduce the size of their Ph.D. programs so they will not graduate more students than the market can absorb and so they can increase financial support for the somewhat smaller number of students they do enroll.

Students clearly are responding to the perceived market. A recent survey by the Council of Graduate Schools and the Graduate Record Examinations Board found that overall graduate enrollments in 1997 dropped for a second year and preliminary indications show another drop for 1998, although with considerable variability among disciplines. In addition to decisions by some universities to scale back their programs, this decline is attributed to a strong labor market for new bachelor's degree recipients, increased opportunities for foreign students in their home countries, and student concerns about the reported excess of Ph.D. s.

Are Foreign Graduate Students Displacing U.S. Students in Graduate Programs?

Foreign graduate students are a valuable asset to the United States. Because of the caliber of graduate programs in the U.S., we are able to draw the most exceptional students from all over the world to study in our institutions. Those who remain in the U.S. increase our intellectual resources and enrich our culture; those who return home frequently have developed an appreciation for U.S. culture and institutions that serves us well when they become leaders in their own countries or in international arenas.

What is important is to maintain an appropriate balance of U.S. and foreign students in our graduate programs. While concerns have been expressed about foreign nationals displacing Americans from graduate programs or from subsequent jobs, there is no evidence of this happening to any significant extent. In fact, enrollments of international graduate students in the U.S. have been declining as they find new opportunities for education and employment in their home countries and in other industrialized nations. Where the U.S. once had a near-monopoly on the very best foreign graduate students, these students are now being courted aggressively by other nations. We may be moving from concern about too many foreign students in American graduate programs to concern about enrolling too few.

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