



RESEARCH REPORT

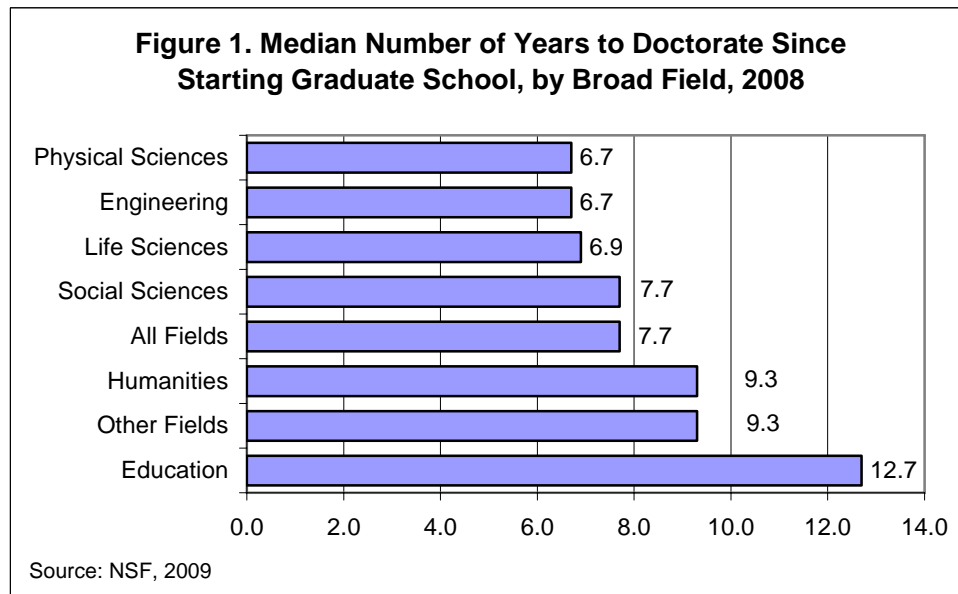
Data Sources: Time-To-Degree for Doctorate Recipients

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The length of time it takes to earn a doctoral degree is a concern to many graduate school administrators, faculty, and students. While the nature of doctoral education in the United States necessitates a multi-year combination of course work, research and dissertation writing, a lengthy time-to-degree results in a high opportunity cost to doctorate recipients who may not enter the workforce until their early thirties. Using data from the annual Survey of Earned Doctorates (SED), this article examines time-to-degree by broad field and demographics, and presents data on the overall improvement in time-to-degree over the past two decades.

Time-to-Degree since Starting Graduate School

The *SED Summary Report* (NSF, 2009) provides two measures of time-to-degree. The first is the number of years between starting graduate school and receiving the doctoral degree. This measure includes time enrolled in a master's program as well as the doctoral program. For doctorate recipients in academic year 2007-08, the median for this measure of time-to-degree was 7.7 years, but there was considerable variation by broad field (see Figure 1). Doctorate recipients in physical sciences and engineering had the shortest median time-to-degree (6.7 years) while the median for students in education was 12.7 years.



The median time-to-degree was higher in 2007-08 for women, U.S. citizens and permanent residents, and U.S. minority students than for men, temporary visa holders, and U.S. majority students, respectively. However, some of these differences may simply be a reflection of differences in time-to-degree by field,

with women, U.S. citizens and permanent residents, and U.S. minority students less likely than their respective counterparts to be in science and engineering fields where times-to-degree are shorter.

Overall, the median number of years to the doctorate in 2007-08 was 7.4 years for men versus 8.0 years for women. For temporary visa holders, the median number of years between starting graduate school and receiving the doctoral degree was 7.5, slightly shorter than the 7.7 years for U.S. citizens and permanent residents. Among U.S. citizen and permanent resident racial/ethnic groups, the median time-to-degree was shortest for multi-race (7.6 years), white (7.7), and Asian (7.7) doctorate recipients, and longest for American Indian (9.6), Black (9.5) and Hispanic (8.0) students.

Time-to-degree has decreased considerably over the past two decades. The median number of years to the doctorate since starting graduate school was 8.7 years in academic year 1987-88, exactly one year longer than the median 7.7 years for doctorate recipients in 2007-08. Even as recently as 2002-03 the median time-to-degree was 8.5 years, indicating that much of the improvement in time-to-degree occurred in the past five years. While time-to-degree improved in most broad fields over the past two decades, in engineering and physical sciences the median number of years to the doctorate was the same in 1987-88 as in 2007-08 – 6.7 years. In contrast, time-to-degree dropped in the humanities from 10.7 years in 1987-88 to 9.3 in 2007-08, and time-to-degree dropped in education from 13.9 years to 12.7 over the same time period.

Time-to-Degree since the Baccalaureate

The second measure of time-to-degree provided by the SED is the number of years between receiving a bachelor's degree and receipt of the doctorate. Since many students take time off between receipt of the baccalaureate and starting graduate studies, this measure understandably increases the time-to-degree. Among doctorate recipients in 2007-08, the median for this measure of time-to-degree was 9.4 years, 1.7 years longer than the median 7.7 years between starting graduate school and earning a doctorate. Once again, there were large variations by field. Students in the sciences and engineering again took the least amount of time to earn a doctorate: 7.7 years in physical sciences, 7.9 years in engineering, 8.6 years in life sciences, and 9.6 years in social sciences, compared with 11.3 years in the humanities, 12.1 in other fields, and 17.0 years in education.

This measure of time-to-degree also decreased over the past two decades in most broad fields, but there were two exceptions. In physical sciences, median time-to-degree since receipt of the baccalaureate increased slightly, from 7.5 years in 1987-88 to 7.7 in 2007-08. And in education, the field with the longest time-to-degree, the median was 17.0 years in both 1987-88 and 2007-08.

Implications

Four important caveats need to be considered in the interpretation of these time-to-degree data. First, the data do not take into account enrollment status, which can partly explain the differences by broad field. In fields like education part-time enrollment is more common than in science and engineering fields, resulting in a longer median time-to-degree in education and shorter times-to-degree in science and engineering.

The second caveat is that the data do not take into account stop-outs. While stop-outs may not affect broad fields differently, stop-outs do contribute to a longer overall time-to-degree. The SED questionnaire does ask respondents to indicate if there was "...any time from the year you entered your doctoral program and the award of your doctorate that you were not working on your degree (that is, not taking courses or working on your dissertation)?" Respondents answering 'yes' to this question were asked to provide the number of years they stopped out. However, while the SED collects these data, to date they

have not been included in the calculation of time-to-degree. And as the question is currently phrased, it asks for stop-out time to be rounded to whole years, which could provide an inaccurate measure to use for calculating actual time-to-degree.

The differences in the nature of research and research funding across broad fields should also be considered when interpreting time-to-degree data. The individual nature of research in the humanities and field research requirements in fields such as archaeology likely contribute to longer time-to-degree than the team-based research typical of the lab sciences and engineering.

Finally, while time-to-degree data provide an important benchmark, the data do not take into account students who fail to complete their doctoral programs. Data from the CGS Ph.D. Completion Project have shown that only 57% of all doctoral students complete their degree within 10 years (CGS, 2008). While time-to-degree is important, it needs to be examined in combination with completion data to ensure that students who enter doctoral programs actually complete those programs and that they do so in a timely manner.

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References:

Council of Graduate Schools (CGS). 2008. *Ph.D. Completion and Attrition: Analysis of Baseline Program Data from the Ph.D. Completion Project*. Washington, DC: Council of Graduate Schools.

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