



When Do Students with Disabilities Graduate High School? Using Survival Analysis to Understand Graduation of Students with Disabilities

Date: June 2014
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Key Findings

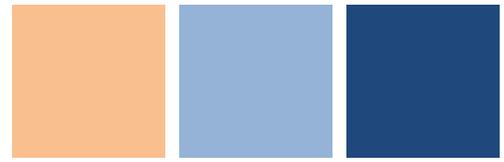
I examined the trajectories of when students with disabilities graduate and how graduation patterns differ for students based on selected student characteristics and educational factors. I found that:

- The majority of students with high incidence disabilities (learning disabilities and speech impairment) graduate within seven years. However, only about a third to a half of students with emotional disturbance, intellectual disabilities, and low incidence disabilities (students with autism, multiple disabilities, or who are deaf-blind) graduate within that window.
- Across disabilities, the most common time students graduate is four years after high school entry. The probability of graduation, conditional that the student has not already graduated or otherwise exited the data, drops considerably for five through seven years after high school entry.
- Low income students with disabilities have a lower conditional probability for on-time graduation than do non-low income students with disabilities, except for students with intellectual disabilities.
- Across all disability categories, students with disabilities who have a full inclusion placement have a higher probability for graduation in any year after high school entry.
- Low income students with disabilities who are educated in substantially separate settings have similar or higher cumulative seven-year graduation rates than non-low income students with disabilities educated in substantially-separate settings.
- Just failing the grade 10 MCAS decreases the conditional probability of on-time graduation for students with disabilities, compared with students who just passed these tests. But it does not decrease the probability of extended-time graduation.

Research Questions

In examining the probability of high-school graduation for students with disabilities as a function of their time in high school, I asked:

- After entry into high school in ninth grade, what is the probability of graduation among students with disabilities, by year and disability category?
- On average, do students with disabilities who are fully included in the general-education setting in ninth grade differ in their probability of graduation from those students educated in substantially separate settings in ninth grade, by disability category?
- All else being equal, is the probability of graduation lower for students with disabilities who just fail the 10th grade MCAS, compared to those who just pass, by disability category?



Data

I used SIMS and MCAS data from 2005 through 2012 on student enrollment, special education status, demographic information, graduation status, educational setting, MCAS testing status, and MCAS scores. In my analyses, I pooled three cohorts of *entering* ninth graders—students who matriculated from eighth grade to enter ninth grade in the fall of 2005, the fall of 2006, and the fall of 2007.

Research Methods

To address my first two descriptive research questions about graduation among students with disabilities, I conducted discrete-time survival analysis. This permitted me to obtain the conditional probability for graduation in a given year after high school entry (i.e., the graduation probability profile) and cumulative graduation rate, by disability category. To address my final causal research question, I embedded the regression discontinuity approach within a discrete-time survival framework.

Detailed Results

- On average, seven in ten students with high incidence disabilities still enrolled four years after high-school entry will graduate that year, but for similar students still enrolled five years after high-school entry, fewer than one in four students will graduate that year.
- For students with intellectual disabilities, 32.3% of low income students graduate on-time compared to 24.8% of non-low income students. But for all other disability categories, non-low income students have a higher probability for on-time graduation than low income students.
- Differences between similar students with a full inclusion placement and a substantially separate placement were least pronounced for students with emotional disturbance, but were still meaningful. On average, 60% of fully included students with emotional disturbance graduate on time, as compared to 35% of segregated students with emotional disturbance.
- Just failing the MCAS for English or mathematics decreases the conditional probability of on-time graduation for students with disabilities by 6.2 and 9.4 percentage points respectively, compared with students who just passed these tests.

Implications for Policy and Practice

A considerable number of students with disabilities in Massachusetts graduate with a regular diploma, especially when compared to national graduation rates. In seeking ways to improve graduation rates, Massachusetts should consider why the conditional probability drops considerably for extended-time graduation. Additionally, these findings raise questions about the special education system in Massachusetts in regards to identification and placement of low income students. Two findings—first, that low income students with intellectual disabilities have higher conditional probability for graduation than non-low income students with intellectual disabilities, and second that low income students in substantially separate placements have similar or higher cumulative graduation rates across all disabilities—run counter to the general narrative that low income students have lower graduation rates than non-low income students. This may be a flag for inequities in the system. Massachusetts should assess how low income students are being identified for special education and in which categories, and after identification, how educational placement decisions are made for low income students.