

Disability, Special Education Setting, and Students' Outcome

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What We Studied

Texas has the second-largest number of students with disabilities among all the US states, which makes special education one of the central issues of discussion in the state's education debates. Even though the size of special education is a small proportion (approx. 8%) of the overall student body, it captures a substantial amount of the net spending. Moreover, the number of disability students in Texas almost doubled from 1980 to 2014 due to factors such as broadening in the definition of what constitutes a disability, increased recognition of non-physical disability, increased take-up rate because of reduced stigma; as well as worsening of the socio-economic factors that determine the at-risk population (Cullen, 2003). Hence, the integration of students with disabilities has become one of the main objectives of the current education system.

With the goal of integration in mind, schools in Texas have adopted different need-based facilities and services, including the provision of separate instructional services for students under special education. Texas Education Agency provides over 40 different types of instructional setting services to accommodate the differential need of various types of disability.

The Inclusion of Children with Disabilities Act (IDEA) act requires that to the maximum extent possible, children with disabilities should be taught alongside the regular students. In line with the IDEA, advocates of inclusion argue that disabled students incorporated in a normal academic environment display improved academic achievement among the disability students (Cole, Waldron, & Majd, 2004; Cole & Meyer, 1991; Fisher & Meyer, 2002). Inclusion of students with disabilities into regular classrooms can also help in changing the attitudes of the regular students towards disabled children (Siperstein, Norins, & Mohler, 2007). This can be a crucial factor in the performance of disabled students as there is a significant role of social acceptance and participation in their development, aspirations as well as confidence (Ouellette-Kuntz, Burge, Brown, & Arsenault, 2010; Scior, 2011).

However, proponents of the separate instructional setting for special education students believe that students with disabilities are more successful if taught in separate, individualized settings with requirement-based instructions at a conducive pace. In addition, decision-makers are often worried about the possibility of negative spillover effects from the inclusion of students with disabilities on the performance of regular students (Brackenreed, 2008; Peck, Carlson, & Helmstetter, 1992). Hence, it is important to understand the importance of separate special education settings. Most of the studies on the impact of inclusion versus provision of separation instructional setting for special education are mainly suggestive or correlational (Platt et al, 2003; Powell 2009). Other studies on special education services focus on the costs related to special education or teacher's attitude towards disabled students in regular classrooms. As a result, there is very little understanding of the actual direction and magnitude of the impact of special education settings.

One of the main reasons for the lack of good causal evidence on this topic is that the movement of students into or out of a special education setting is not random. Students who are eligible for special education are in many unobserved ways inherently different from the students who are not. Hence, one cannot directly compare students in special education to students who are not in special education. It will be equally misleading to compare the students before and after they move into/out of special education as changes in their status is endogenous to changes in the ability/need of the individual.

This project overcomes these challenges and estimates the role of special education in affecting a student's outcomes. To establish causality and eliminate the stated endogeneity issue, the analysis uses a plausibly exogenous policy change that induced variation across the school districts in Texas in their incentives to categorize or enroll a marginal student (those with less severe disability conditions) under special education.

How We Analyzed the Data

The study uses Texas state administrative data of all students in the Texas public system from 2001-2012. This data provides longitudinal student-level data for the entire population of students in the Texas public education system. Texas Education Agency (TEA) data provides detailed records for K-12 students - including information on student's demographic characteristics and academic characteristics. In addition, this data provides detailed yearly information on a student's disability status, as well as the type of classroom instructional setting provided to the students.

The empirical design of the paper relies on utilizing incentive variation across school districts in Texas to assign or enroll a student under special education. Non-physical disabilities that are less severe (such as learning disabilities), are not very straightforward to categorize. Hence, they leave room for discretionary decisions on the categorization of students as being eligible for special education. In light of this, if districts differ in their incentives to enroll students under special education versus not, this could lead to over or under-enrollment of students with a disability under special education. To proxy this, the project uses a policy change in the District Performance Level Criteria in Texas. In 2004, Texas added a criterion in the district's performance indicator that was based on the percentage of students enrolled under special education. School districts with 8.5% or lower percentage of special education proportion would be in the highest performance category, those between 8.5 – 11 % in the second-highest, 11.1-16 % in the third-highest, and those with above 16 percent in the worst category.

Even though the criterion was a performance indicator for districts, they could be scrutinized more closely if they went over the rate. For example, school districts could face a detailed review and intervention from the state if they were flagged for having a high number of students in special education programs. As a result, for school districts above the cutoff, this policy provided incentives to lower the enrollment of students into special education.

Federal law requires schools to provide everyone who qualifies for special education services with accommodations, without a limit on the percentage or number of students who can receive such support. Even though Texas did not limit the number of disabled students on paper, tying performance indicators of school districts to the percentage of special education can potentially incentivize school districts to restrict or alter the categorization of some of the students, especially those with non-obvious disability conditions. In turn, this can lead to a change in the type of instructional setting assigned to a student.

Based on their initial percentage of special education students before the criteria came into place, school districts vary in their degree of incentive to lower the percentage of disability students. Districts with a higher propensity of special students before the policy are likely to have a larger decline in students under special education, as they now need to reduce the proportion of Special Ed students to meet the criteria. On the other hand, districts that are below the cutoff do not have any incentive to change to meet the criteria and hence, can serve as a good control group. Utilizing this variation in the propensity to lower the percentage of special education enrollment, this study compares students in the 'districts above cutoff' to those in the 'districts below cutoff', before (2001-2004) and after (2005-2012) the change in the criteria. In addition, time fixed effects and district fixed effects are included to eliminate any change in the outcome

that arises due to changes that are common across the districts over time, as well as due to differences in district characteristics that are fixed over time.

What We Discovered

To begin with, it is important to understand whether the policy had any impact on the proportion of students classified as special education. To understand this, schools are grouped into 'districts above cutoff' and 'districts below cutoff' based on the percentage of students enrolled under special education in 2004 i.e. the year before the policy change. Next, using this categorization, the average percentage of special education enrollment is plotted for each year from 2001 to 2012. Figure 1 shows that before the policy change in 2005, 'districts above cutoff' and 'districts below cutoff' did not see any significant changes in their proportion of special education students. However, after the policy (2005 onwards), there was a large steep decline in the percentage of special education students in the treated districts i.e. districts above the cutoff value of 8.5 percent.

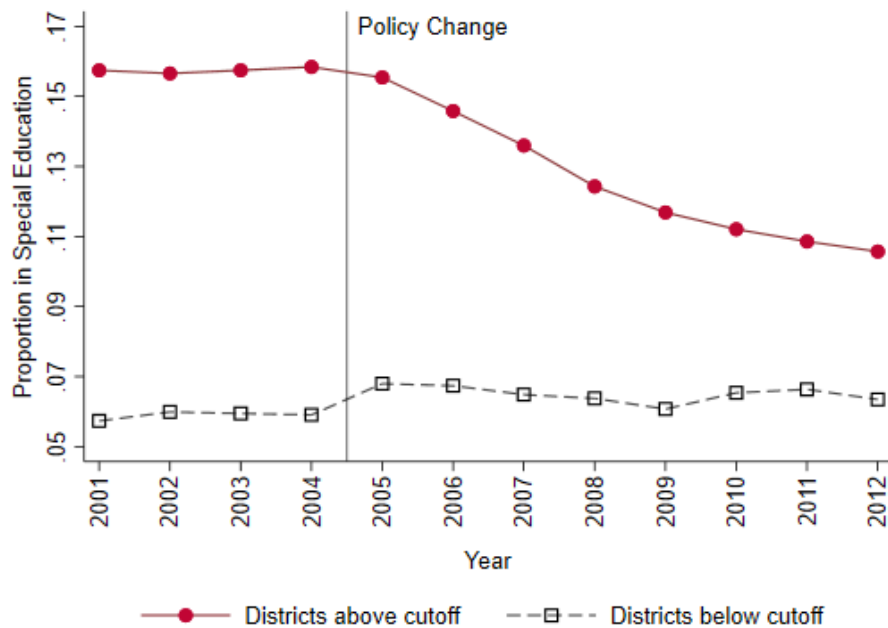


Figure 1. Shows the percentage of students classified under special education for districts above the cutoff and districts above the cutoff, between 2001 and 2012.

In contrast, no similar pattern is observed for districts below the cutoff where the trend is almost flat both before and after the policy change, as expected. This serves as first-stage evidence that the policy change induced an exogenous variation in the proportion of students receiving special education based on a districts' initial level.

Using this as the identifying variation, the project then analyzes the impact of the policy on students' high school graduation. Research shows that high school graduates fare substantially better than their peers do on a variety of economic outcomes. Hence, high school graduation is an important determinant of long-run earning potentials. The mean high school graduation rate in the sample is 76 percent. Results show that students in the above-cutoff districts (treated group) have a lower likelihood to graduate from high school after the policy as compared to students in the below-cutoff districts (control group). Estimates in Table 1 show the estimates corresponding to this result. Results show that on average, the policy led to a 3.17 percent point (4 percent) lower graduation rate in above-cutoff districts.

	Impact on High School Graduation	
	(1)	(2)
Above Cutoff × Post Period	-0.0317*** (0.004)	-0.0312*** (0.004)
Mean of Dep Var	0.76	0.76
Observations	4,073,707	4,073,707
Treatment and post dummy	Yes	Yes
Demographic controls	Yes	Yes

Table 1: Table shows the impact of the policy on average High School Graduation

Lastly, an event-study analysis is conducted to get a better picture of the magnitude of the impact by the duration of exposure to the policy. In Figure 2, each point shows the impact of the policy on average graduation rates for the labeled year relative to 2004. The X-axis denotes the year in which a student entered high school (grade 9th) and hence represents the duration of exposure to the policy. For example, students who entered grade 9th in 2005 have 4 years of exposure to the policy before graduation, whereas students who entered grade 9th in 2009 have 8 years of exposure to the policy. The figure shows a larger and larger negative impact as we go further along the x-axis. This means that the longer is the duration of exposure to the policy, the worse is the impact on high school graduation (lower graduation rates).

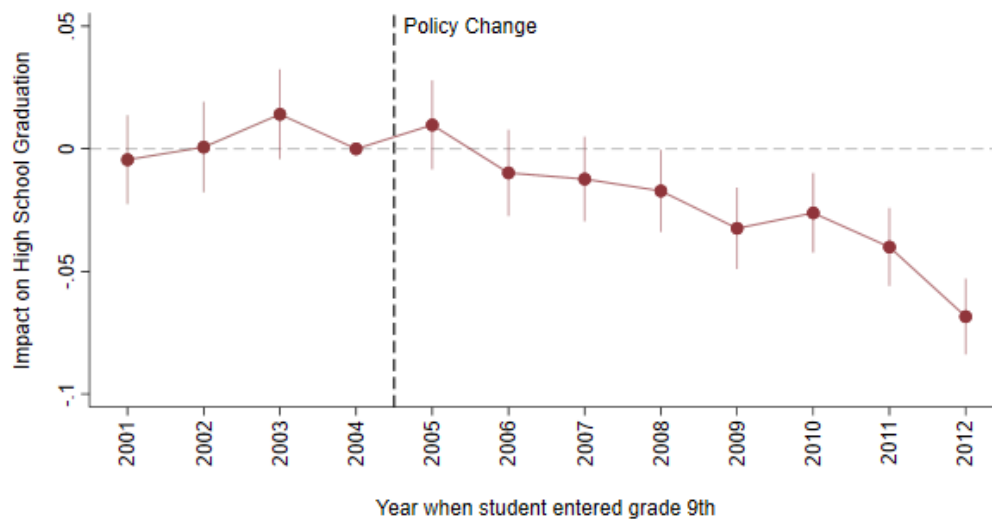


Figure.2: Event study analysis of the impact of the policy on high school graduation rate.

Two potential channels can drive the decline in average high school graduation rates: 1) reduced access to special education services for students with a disability or 2) negative spillover on regular students due to increased proportion of students with disabilities in regular instructional settings. However, students with mild disabilities already spend a majority of their daytime in a regular classroom. Hence, these effects are unlikely to be primarily driven by the negative spillover on regular students. Hence, it is more likely that the reductions are mainly driven by the negative effect on students with mild disabilities who now have lower access to special education.

Discussion/Policy Recommendations

Texas public schools are dedicated to providing quality education for all children, including those with special needs who require specialized services, support, and programs to meet their educational potential. Special education students are among some of the most vulnerable children in public schools. For Texas in particular, where the number of

disability, minority, and at-risk individuals is increasing over the years, understanding optimal instructional settings for students with disabilities can help in providing the right assistance and robust services that can create a conducive environment for them to thrive. Moreover, special education forms a big portion of education spending. Because of both reasons, the issue is regularly a topic of debate by parents, school officials, and policymakers.

This project provides robust evidence that lack of access to special education has a negative effect on student's graduation rates. This is important as research shows there is a positive association between high school graduation and future wages. Thus, this study can help in shaping policies aimed at providing equal opportunities for academic achievement, school engagement as well as social development for students enrolled in special education. Additionally, the project helps in understanding the impact of an educational policy - both direct effect (on Special Ed enrollment) and indirect effect (on high school graduation). Secondly, these results also help in understanding the exposure-response to a policy by showing that students with longer exposure to the policy have worse outcomes.

The growing disability and minority population in Texas require more attention and investment to be diverted towards understanding the needs of these students. Closing the Gaps initiative in Texas aims to eliminate performance gaps among different racial, ethnic as well as disability groups. In Texas, 25% of the population with less than a Diploma degree comprises individuals with a disability, whereas only 9% of the individuals with a Bachelor's degree or above are disabled. The results from this project help in analyzing these costs and the benefits and thus can be useful in working towards the goal of closing the gap.

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