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Title:

The Effects of the California High School Exit Exam Requirement on Student Achievement, Persistence, and Graduation

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Abstract Body

Background/context:

The increasing use of state-mandated public high school exit exams—tests each student must pass before he or she is awarded a high school diploma—is one manifestation of the current movement in U.S. public schooling toward more explicit standards of instruction and accountability. Unlike some aspects of accountability systems, the accountability consequences of failing an exit exam fall partly (or even primarily) on students, as opposed to the schools or districts. The number of states requiring students to pass an exam to graduate has increased from 18 in 2002 to 22 in 2007, with an additional four states intending to implement exit exams by 2015. Soon, over 70 percent of U.S. students will soon be subject to such exam requirements (see, e.g., Center on Education Policy, 2004, 2005; Dee & Jacob, 2006; Warren, Jenkins, & Kulick, 2006). The effects of exit exam policies, however, remain somewhat unclear, despite a number of recent studies. Competing notions of how such exams might influence student and school behaviors lead to divergent predictions of how students will be affected. Some argue, for example, that a high school exit exam requirement will create incentives both for schools to provide better instruction to struggling students and for these students to work harder to learn more before graduation. On the other hand, others have argued that creating additional barriers to graduation discourages students—particularly academically and socially disadvantaged students—from persisting in school and hence leads to increased dropout rates and greater inequality (for discussion, see Dee & Jacob, 2006; Reardon & Galindo, 2002; Warren et al., 2006).

Several recent papers have estimated the effect of *failing* an exit exam, given that an exit exam requirement is in place (Martorell, 2005; Papay, Murnane, & WIllet, 2008; Reardon et al., 2008). Each of these papers uses a regression discontinuity design to estimate the effect of failing an exit exam, which yield valid causal estimates of the effect of failing for students near the margin of passing. Generally, each of the papers finds some evidence that failing an exit exam in 10^{th} grade increases the probability that a student will not graduate from high school, but because these papers rely on regression discontinuity, their estimates are informative only for students who are near the margin of passing. They do not tell us what the effect of failing the exam is for students with skill levels far below the passing score.

Research that estimates the effect of exit exam policies (rather than the effect of failing an exam) has typically focused on estimating the average effect of the policy on all students, regardless of skill level, and has generally estimated the effect of a high school exit exam requirement on high school dropout or completion rates. The best of these studies find that high school dropout rates tend to increase by roughly 1 to 2 percentage points, on average, when states implement rigorous exit exams (Dee & Jacob, 2006; Warren et al., 2006). Dee and Jacob (2006) find that these effects are concentrated among black students and students in high-poverty schools. Nonetheless, none of the existing studies are able to provide estimates of the effects of high school exit exam policies on the students for whom they are likely to have the largest effects—students who enter high school with achievement levels in the bottom quartile of the income distribution

Purpose/objective/research question/focus of study:

In this paper, we estimate the effect of a high school exit exam requirement (relative to no requirement) on students' academic achievement, persistence in high school, and graduation rates. We are particularly interested in the effects of the policy on the students who have low initial skill levels in high school.

Setting:

The study is based on data from four large California districts—Fresno, Long Beach, San Diego, and San Francisco Unified School Districts—to investigate the effects of failing the CAHSEE. These are four of the eight largest school districts in California, collectively enrolling over 110,000 new high school students (about 5.5 percent of high school students in the state) annually. We use three years of longitudinal data from students who were in 10th grade in the Spring of 2003, 2004, 2005, 2006 (i.e., we use data from 2003-2008).

Population/Participants/Subjects:

The study draws on data from roughly 100,000 students from the four school districts. The students are roughly 25% White, 20% Asian, 40% Hispanic, and 15% Black.

Intervention/Program/Practice:

The California State Legislature passed Senate Bill SB2X in March 1999, requiring California local school districts to administer a high school exit exam (the California High School Exit Exam [CAHSEE]) and provide supplemental instruction to those students who do not demonstrate sufficient progress toward passing the exam. As implemented, the CAHSEE is a two-part exam of mathematics and English language arts (ELA) skills. The math section assesses students' mastery of the California math content standards for sixth and seventh grade and their Algebra I skills using a multiple-choice format. The ELA section is aligned with state content standards through grade ten and utilizes a multiple-choice format along with one essay. Both tests are administered in English, regardless of a student's primary language.

The test is first administered to students in the Spring of 10th grade, and students have at least five subsequent opportunities to retake the sections they have not yet passed (twice in 11th grade and 12th grade, and at least once following the end of the 12th grade school year). Testing dates are centrally scheduled by individual districts and the exam is administered over the course of two days (one day for each portion). The test is untimed, though students typically complete each section in three to four hours. Districts notify students and their parents of their CAHSEE performance about seven weeks after the exam is administered. Because students are told their exact score, not simply whether they passed or failed, students who fail have some sense of how close they came to scoring the requisite 350 they need to meet the CAHSEE requirement.

Research Design:

We exploit a change in the implementation of the policy to estimate the effect of the exit exam requirement on student outcomes. In July of 2003, after the completion of the Spring 2002–03 administrations of the CAHSEE (taken by 10th graders in the high school class of 2005), the State Board of Education voted to defer the CAHSEE requirement for two years. As a result, students in the Class of 2005 took the CAHSEE exam in 10th grade under the belief that passing would be required to graduate, but then were told several months later that they would not be subject to the policy. For those students who were in 10th grade in Spring 2004 or later, however, the CAHSEE requirement has been in place since the beginning of their 10th grade year. As a result, students in the class of 2005 and in later cohorts thought that they were subject to the exam through their 10th grade years; the policy differed for them only after 10th grade.

In this paper, we compare the outcomes of students in the 2005 cohort with those from later cohorts, conditional on their standardized test scores in Spring of 10th grade. The initial failure rate of the CAHSEE in 10th grade in 2004 was roughly 25%. By comparing the results of students in the bottom quartile in 10th grade in cohorts who were and were not subject to the CAHSEE requirement, we can estimate the effect of the requirement on their subsequent outcomes. Because this difference may be biased by other policy changes that affect the bottom quartile of students, we also estimate the between-cohort difference in outcomes for students in higher quartiles of the 10th grade distribution. A pattern of between-cohort differences for bottom quartile students but not for higher quartile students would suggest

Data Collection and Analysis:

We use longitudinal student-level data from four large California districts—Fresno, Long Beach, San Diego, and San Francisco Unified School Districts—to investigate the effects of failing the CAHSEE. These are four of the eight largest school districts in California, collectively enrolling over 110,000 high school students (about 5.5 percent of high school students in the state) annually. For our primary analyses, we use data from four cohorts of students—defined as the cohorts scheduled to graduate in 2005, 2006, 2007, and 2008. For the first of these cohorts, the CAHSEE was not binding after 10th grade; for the latter three cohorts, the CAHSEE was binding.

We estimate the effect of the CAHSEE policy on three outcomes—academic achievement, persistence to 12th grade, and graduation. We measure academic achievement using the Spring 11th grade English Language Arts (ELA) California Standards Test (CST) score. We use the ELA rather than the Math CST score in 11th grade because all students take the same 11th grade ELA CST, but take one of a number of different subject/ content math CST tests (e.g., Geometry, Algebra I), depending on what math course they are enrolled in. Thus, 11th grade math scores are not comparable across students.

Although we cannot directly determine whether students have dropped out of high school—because students who leave a given district prior to graduation may be dropouts or may have left and enrolled elsewhere—we can identify whether students are present in the

district two years after first taking the CAHSEE (in the Spring of 12th grade). We use the indicator of presence in Spring of the scheduled 12th grade year as an indicator of persistence in schooling. Of course, some students may not be present in the district because they have transferred to another district. Nonetheless, if we observe that failing the CAHSEE affects the probability that a student is present in the district in 12th grade, we can assume that this is because failing the CAHSEE affects persistence/dropout rates. It is unlikely that CAHSEE failure affects the probability of transferring to another district within the state, because students will be subject to the CAHSEE requirement in any district within the state.

Finally, we estimate the effect of failing the CAHSEE on the probability of graduating from the district, using a binary indicator of graduation status provided by the districts. For both the persistence and graduation variables, we have data only for the 2005, 2006 and 2007 cohorts, because our most recent data from the districts is from Fall 2007. For the achievement variable (CST scores), we have data for each of the 2005-2008 cohorts, because this variable is collected in 11th grade.

Findings/Results:

Our preliminary results show that, conditional on 10th grade test scores, there are no significant differences in the 11th grade achievement between students in the pre-policy (2005) cohort and students in the policy cohorts (2006-2008). Moreover, there are no differences between cohorts for students in the bottom quartile of 10th grade test scores.

The same is true for persistence—conditional on 10th grade test scores, there are no significant differences in the persistence to Spring of 12th grade between students in the pre-policy (2005) cohort and students in the policy cohorts (2006-2007). This is true for students in the bottom quartile of 10th grade test scores as well as in the upper quartiles.

However, when we examine graduation rates, we find substantial differences in graduation rates, conditional on 10th grade test scores, between students in the pre-policy (2005) cohort and students in the policy cohorts (2006-2007). These differences are concentrated among students in the bottom quartile of the 10th grade test score distribution. For students in the bottom quartile, graduation rates among those in the pre-policy cohorts were 10-12 percentage points higher than those in the policy cohorts; for those in higher quartiles, graduation rates were similar between the cohorts.

These results suggest that the implementation of the policy did not affect students' achievement or persistence to 12th grade, but did substantially reduce graduation rates among low-achieving students.

Conclusions:

Most arguments in favor of high school exit exams imply that the exams will motivate students to work harder to pass the exit exams. If this were the case, we would expect to see higher 11th grade achievement levels, conditional on 10th grade test scores, among those cohorts subject to the exit exam requirement, particularly among those at the low end of the achievement distribution. But we observe no such pattern.

A primary concern of those opposed to high school exit exams is that the exams will discourage students, particularly low-achieving students, who fear they may not pass the exam,

which will lead to higher dropout rates. If this were the case, we would expect to see lower persistence rates among low-achieving students who were subject to the policy than among those who were not. Again, however, we observe no such pattern.

The pattern we observe, however, suggests that the exit exams do not meet up to the expectations of their advocates nor the fears of their opponents. Rather, low-achieving students required to pass exams do not learn any more than they would had they not been subject to the requirement; nor do they persist in school any less than they would have. The sole effect of the policy appears to be deny diplomas to 10% of low-achieving students who persist in school through 12th grade.

Appendixes

Appendix A. References

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