High School Exit Examinations and State-Level Graduation and GED Rates, 1992-2000

Since the early 1970s states have implemented "high stakes" achievement or proficiency tests to hold students, schools, and school districts accountable for meeting state-mandated educational achievement standards. These programs are generally designed to guarantee that schools effectively equip students with basic skills; they are "high stakes" tests because there are consequences for students, schools, and/or districts that perform poorly on them. In many states, for example, students who fail to pass high stakes graduation tests do not obtain diplomas and do not graduate.

Despite the laudable goal of improving education by motivating teachers and students to achieve higher standards, detractors point out that there are serious potential downsides to high stakes achievement testing, especially if poorly implemented. In the proposed research I focus on the consequences of requiring passage of high stakes tests for high school graduation.

A History of High Stakes Graduation Testing

High stakes graduation tests were first integrated into the student accountability educational reform movement in the 1970s, and became relatively common in the mid to late 1980s after the publication of *A Nation at Risk* (National Commission on Excellence in Education 1983) and after unfavorable international comparisons of mathematics and science achievement among U.S. students to the achievement of students in other industrialized nations. Many states responded quickly to *A Nation at Risk's* recommendation that "standardized tests of achievement … should be administered at major transition points from one level of schooling to another and particularly from high school to college or work." These reforms were generated by the sense that low standards, watered down curriculum, and "social promotion" are responsible for a lack of job skills and college preparedness among high school graduates (Bond and King 1995; Gordon 2000; Heubert 2000; Jaegar 1982; Reardon 1996).

Whereas only a handful of states implemented high stakes graduation tests before 1983, the graduating class of 1992 faced high stakes testing requirements in 15 states (Jacob 2001) and the class of 2000 faced such tests in 18 states (National Governors Association Center For Best Practices 1998; Warren and Edwards 2001). In general, in any given year since the mid 1980s between 15 and 20 states have made passage of a high stakes achievement test a prerequisite for high school graduation (Bond and King 1995; Catterall 1989; Catterall 1990; Goertz 1989; Winfield 1991). Several additional states have plans for implementing high stakes graduation testing programs in the next few years (American Federation of Teachers 1999; National Research Council 2001).

States that implemented high stakes graduation tests in the 1980s typically relied on multiple-choice measures of minimum competencies in the basic skills of reading, writing, and arithmetic. Although there were calls for tests of higher-order, more complex skills, the basic skills were more clearly defined and relatively easier to test (Bond and King 1995; Linn 1995). However, beginning in the early 1990s – and particularly after a 1991 Department of Labor Report (The Secretary's Commission on Achieving Necessary Skills (SCANS) 1991) – many states moved to more challenging tests that were aligned with higher curriculum standards (American Federation of Teachers 1997; National Research Council 1999).

It is not the case that a random subset of states has elected to enact high stakes graduation testing requirements. The states that mandate high stakes graduation tests are principally located in the southern and southeastern United States, and states in this region were the first to implement high stakes graduation tests. Many of these states have long been among the most economically disadvantaged in the nation, many have traditionally fared poorly on national assessments of achievement, and many contain high proportions of race/ethnic minorities and/or urban residents. Given these factors, it is not surprising that states that require high stakes minimum competency tests have higher dropout rates (U.S. Bureau of the Census 1995). Consequently, it is incumbent upon researchers to take into account the geographic, demographic, socioeconomic, and academic characteristics of students *and*

their states in order to understand the *independent* impact of high stakes graduation tests on high school completion or dropout (or any other outcome).

The Present State of Knowledge in the Field

There is a scarcity of good empirical evidence about the impact of high stakes graduation tests on high school dropout or about the extent to which high stakes graduation tests disproportionately affect particular groups of students. *All of the research that does exist focuses on the types of tests administered before the mid-1990s when states moved toward assessing more rigorous standards in their high stakes graduation tests*. Consequently, the little evidence that we do have pertains exclusively to the types of high stakes graduation tests that have been replaced by more challenging tests in many states.

Catterall (1989), Coates and Wilson-Sadberry (1994), Reardon (1996), and Muller (1998) each provide early evidence about the impact of high stakes graduation test requirements on high school dropout. Each of their analyses is limited in important ways (Warren and Edwards 2001). More recently, Warren and Edwards (2001) and Jacob (2001) used NELS-88 data to assess the impact of high stakes graduation test requirements on high school dropout *and* to ask whether that impact varies by school- or student-level characteristics. Despite some minor differences in modeling strategy, sample selection criteria, and variable definitions, Warren and Edwards (2001) and Jacob (2001) each concluded that high stakes graduation tests have no impact on high school dropout. Whereas Jacob (2001) finds that students in the bottom quintile of prior achievement are especially affected by high stakes graduation test requirements, Warren and Edwards (2001) found no such evidence. The most recent, most persuasive, and most empirically sound research on the effects of high stakes graduation tests on high school dropout all use data from NELS-88 (Jacob 2001; Muller 1998; Muller and Schiller 2000; Warren and Edwards 2001). This is problematic, since NELS-88 data can tell us nothing about the impact of high stakes graduation tests after the early 1990s.

Research Design

My larger, long-term research project will proceed in four parts. *First*, I will compile historical information on the presence and characteristics of high stakes graduation testing policies in all 50 states and the District of Columbia between 1979 and 2002. In the research reviewed above, analysts typically estimated only the consequences for high school dropout of whether or not a state required passage of *any* high stakes test for graduation. Given substantial state-to-state variability in the way in high stakes graduation tests are designed, implemented, administered, scored, and supported by curricular preparation and remediation, it is worth wondering whether the *attributes* of particular high stakes graduation testing policies – beyond just their *existence* – have any bearing on dropout.

Second, I will use discrete-time logistic event history analyses to understand the political, economic, technological, geographic, and institutional factors that lead states to adopt or amend high stakes graduation testing policies at particular points in time. These analyses will provide useful information about the contexts that give rise to high stakes graduation tests, and will serve as important background information for the other parts of the research design. *Third*, I will use state-level fixed effects models to estimate the impact of high stakes graduation tests (and various characteristics of those tests) on state-level high school graduation rates (derived from 1988-2001 data from the Common Core of Data) and GED completion rates (derived from data from the GED testing service). *Fourth*, I will estimate hierarchical logistic regression models to estimate the impact of high stakes graduation tests on individual students' dropout behaviors and on race/ethnic and socioeconomic inequalities in those behaviors; to do so, I will use data from the 1979-2001 October Current Population Surveys.

For the 2004 PAA meetings I will present the *third* piece of this longer-term project. In separate analyses, I will use state-level fixed effects models to estimate the impact of high stakes graduation testing policies on ① annual state-level graduation rates derived from the Common Core of Data (CCD) and ②

annual state-level measures of the proportion of all 16-19 year olds who earned a GED credential in that year. Although previous researchers have used state-level graduation rates derived from the CCD to examine the impact of high stakes graduation tests on high school completion (Greene 2001; Haney 2000; Haney 2001; Swanson and Chaplin 2003), their state-level graduation rate measures have not adequately adjusted for inter-state migration, growth over time in the population of incoming student cohorts, or age-grade delay. Each of these factors affect the validity of CCD-derived state-level high school graduation measures, and so I have developed revised CCD-based state-level graduation rates that account for these factors for the graduating classes of 1992-2000.

For either of these outcomes (high school graduation rates or GED completion rates), the state-level fixed effects model can be written as

$$Y_{it} = \alpha_{it} + \sum_{1}^{m} \beta_m Testing\ Variable_{mit} + State_i + Year_t + \varepsilon_{it} \quad (1)$$

where Y_{it} represents the outcome variable in state i in year t, α_{it} is a constant that varies over time and across states, m indexes the several variables describing characteristics of states' high stakes graduation testing policies in each year since 1979, $State_i$ and $Year_t$ are state and year fixed effects, respectively, and ε_{it} is a disturbance term. The fixed effects in Equation 1 are designed to account for omitted variables that are specific to particular states and years. This technique is built on the recognition that it is virtually impossible to account for all aspects of particular states or of particular years that might bias our estimate of the independent effects of high stakes graduation testing policies on high school completion rates. To estimate the model in Equation 1, I will use the least-squares dummy-variable approach, in which dummy variables are introduced for each of the states and for each of the years.

The model described in Equation 1 will estimate the total impact of various aspects of states' high stakes graduation tests. If there are significant effects of high stakes graduation testing policy variables on state-level graduation or GED completion rates, then it will be interesting to consider the extent to which these apparent effects are due to time-varying characteristics of states. In this model

$$Y_{it} = \alpha_{it} + \sum_{1}^{m} \beta_m Testing\ Variable_{mit} + \sum_{1}^{n} \lambda_n X_{nit} + State_i + Year_t + \varepsilon_{it} \quad (2)$$

n indexes time-varying, state-level variables that might impact these outcomes and that might be associated with states' implementation of high stakes graduation testing programs. As argued in the previous section, the context in which particular states adopt or reform high stakes graduation tests will likely shape the consequences of those tests for high school dropout and completion. For example, a state that implements a high stakes graduation test and also increases per pupil educational expenditures may not see the same change in dropout and completion rates as a state that implements a high stakes graduation test but does not increase per pupil educational expenditures. To capture this in the model in Equation 2, I would add a time varying measures of states' per pupil educational expenditures and then observe the remaining independent impact of high stakes graduation testing policies.

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