
Accurately Assessing High School Graduation Rates

Recent studies have argued that there is a dropout crisis in the U.S. But Mr. Mishel and Mr. Roy find that this contention is based on flawed analyses of inadequate data. Using a much wider range of sources, they conclude that the situation is not nearly so dire as is commonly believed.

BY LAWRENCE MISHEL AND JOYDEEP ROY

CONVENTIONAL wisdom asserts that there is a newly discovered dropout crisis in our high schools. As the National Governors Association states, “We know that about a third of our students are not graduating from high school. . . . About three-fourths of white students graduate from high school, but only half of African American and Hispanic students do.”¹

Jay Greene of the Manhattan Institute and Christopher Swanson, formerly with the Urban Institute, are primarily responsible for this claim. They have published reports showing these extraordinarily high dropout rates nationwide, for the states, and for many specific school districts. They also claim that graduation rates have been flat for several decades.² Greene’s and Swanson’s research methodologies have been widely disseminated by advocacy organizations, such as the Alliance for Excellent Education, the Education Trust, and the Harvard Civil Rights Project.³

We have come to different conclusions. Both Greene and Swanson calculate dropout rates from enrollment and diploma data reported by school districts, collected by the states, and forwarded to the federal government’s Common Core of Data, which is managed by the National Center for

Education Statistics. Using different data sources, including the U.S. Census and several high-quality longitudinal surveys, we have found that graduation rates have improved for decades, particularly for minorities, though less so in recent years. Instead of “half of black students graduating with diplomas,” as Greene and Swanson maintain, we conclude that three-fourths of black students obtain regular diplomas and, of the 25% who do not graduate, fully half go on to obtain a GED that allows them to enroll in college, enlist in the military, or take advantage of other postsecondary training opportunities. It is a similar story for Hispanics.

Rather than indicating stagnant graduation rates, census data show that the high school completion rate for young black adults (aged 25 to 29) was 42% in 1962 and roughly doubled by 2000.⁴ There remains a substantial racial gap in high school completion — about 10 percentage points — but it is a far smaller gap than existed 20, 30, or 40 years ago. Trends in Hispanic graduation rates are more difficult to measure over a long period, but it is clear that graduation rates have been steadily improving over the last 20 years: the percentage of Hispanics (aged 20 to 22) who have a high school diploma (excluding GEDs) increased from 62% in 1984 to 76% in 2002.⁵

In short, Greene’s and Swanson’s estimates are more pessimistic than ours. Ordinarily, only experts would have to make technical judgments about the relative quality of data sources and methods of analysis. But in this case, important

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policy implications flow from whether you believe, for example, that the black dropout rate is 50% and stagnant or 25% and falling. Neither rate is acceptable, but education policy makers would approach the problem very differently depending on which story was true.

REALITY CHECK

When natural or social scientists examine the reliability of data, one of their first challenges is to see whether results are consistent with other facts that they know. If data are implausible, we should be cautious about accepting them until we have carefully checked how they were derived. If, for example, we were suddenly presented with data showing a big drop in manufacturing imports and a jump in exports, we would immediately be skeptical if these data were inconsistent with unemployment figures showing large layoffs of manufacturing workers. Of course, we would still have to investigate why the import/export data were flawed, but until we did so we would be hesitant to accept them.

Likewise with graduation data. The conventional view is inconsistent with other things we know about the young adult labor force. For instance, most people are properly concerned about dropouts because skills and education are becoming more important in the labor market, and workers with more education earn higher wages. It is surprising, therefore, that the wage gap between high school graduates and high school dropouts has not changed appreciably in 30 years, with the graduate-to-dropout premium remaining relatively constant at about 25%, after controlling for race, ethnicity, gender, and experience.⁶ How can this be? The most plausible explanation, accepted by most economists, is that the share of high school graduates in the work force has grown while the share of dropouts has fallen. The graduate-to-dropout wage ratio can remain stagnant, even though the demand for graduates relative to dropouts rises, if the supply of graduates relative to dropouts has also been rising. A falling share of the work force without a high school degree is consistent with these wage trends, but a steady flow of 33% of young adults as dropouts is not.

Another labor market reality suggesting that conventional dropout numbers are implausible concerns immigration. The debate over immigration policy has led to an increased interest in assessing the impact of immigration on the wages and job opportunities of native-born workers. Because most Mexican immigrants have not completed high school, native workers without high school degrees are those most affected by immigrant competition.⁷ Is this a large group? Conventional wisdom suggests that roughly a third of the work force is being put in direct competition with low-wage

immigrants lacking high school degrees. The impact of low-wage immigrant competition on American workers is a serious problem, yet nothing in the debate about immigration suggests that one-third of all Americans are being harmed. If they were, we suspect the country would not be nearly so divided on immigration questions, and politicians would not even dare broach the subject of legalization, much less advocate it. The tone of the debates about immigration is much more consistent with our story — that about one-eighth of Americans are dropouts and in direct competition with Mexican immigrants for jobs like dishwasher and janitor — than with the conventional story that one-third of Americans are so affected.

Finally, the conventional dropout story is implausible be-

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cause it can't be squared with what we know about college completion. Recall that the conventional wisdom says that whites graduate from high school at roughly a 75% rate while minorities do so at roughly a 50% rate: a 25-point gap. However, census data show that, among 25- to 29-year-olds, 17% of blacks are college graduates, compared to 35% of whites, a gap of 18 points. Is it believable that the racial gap in college completion is so much less than that for high school completion? Are blacks who graduate from high school really that much more likely to graduate from college than white high school graduates? We suspect not.

There is, however, one bit of external evidence that, at first glance, makes the conventional view seem plausible. We have spoken to several educators who have worked in inner-city high schools and say that a 50% black male dropout rate is consistent with their experience. We have no doubt that this is true. But the conventional view slides uncritically from this valid observation about inner-city black males to a claim about all black youths — male and female, urban, rural, and suburban. There are certainly problems in suburban high schools serving black students, but the problems are of a very different kind and magnitude from those

in the inner cities. About half of all black Americans now live outside central cities. Assume that the suburban graduation rate is 70%. Then, for a 50% overall black graduation rate to be plausible, inner-city blacks would have to graduate at a 30% rate, with average rates for inner-city black males even lower, an extreme claim that no observers make.

These reality checks don't prove that conventional wisdom is wrong, but they certainly should caution us to approach these data with more care than has been the case.

MORE ACCURATE DROPOUT RATES

As labor economists, we are familiar with Census Bureau surveys that assess the educational attainment of individuals and households. Economists and other social scientists use these data extensively to study wage and job trends, labor supply, skill demands, and so on. The data show that, in the early 1970s, 30% of the work force had not completed high school or gotten GEDs, but in recent years the share had dropped to about 11% — and just 7% for native-born Americans, black and white combined. Proponents of the conventional view that the dropout rate is 33% dismiss this source of data, the Current Population Survey (CPS), rather quickly. They note that the CPS covers the civilian noninstitutional population and does not include people in prison. They also note that the CPS inadequately captures data for low-income minority populations, who are more difficult to contact. Finally, they also assert that people are ashamed of being dropouts, so they lie about their education to the Census Bureau.

Yet nowhere have those who posit crisis-level dropout rates reported any empirical assessment of these biases and how they might have changed over time — information needed to ascertain how the biases affect the level and trend in graduation rates. In fact, these well-known biases in census surveys have little effect on our estimates of more modest dropout rates.

We confirm this by analyzing the decennial census data for 2000, which has some key advantages over the regularly published labor force surveys (in the CPS) that were the object of these critiques. For one, the decennial census data include the entire population, even those in prison. Using data from the American Council on Education, which administers the GED, we were able to subtract GEDs from the census numbers to estimate graduation rates for those with regular diplomas. In addition, the 2000 census paid great attention to getting everyone to fill out a census form because the data were being used for congressional reapportionment. This was the best census ever, with the fewest problems ever in undercounting minority populations,

especially by comparison to the CPS.

The Census Bureau has also begun a new survey, the American Community Survey (ACS), which is less well known but has better coverage than the CPS. The ACS also fails to confirm the conventional crisis view. All of these census survey data show far higher regular diploma graduation rates for blacks — from 69% to 73% — than the alleged 50% graduation rate of conventional wisdom. Whatever coverage problems there may be, it is hard to believe that they bias the decennial census measure of black high school graduates by nearly 20 percentage points.

As noted above, critics of the CPS say that it overstates graduation rates by omitting the prison population, which includes disproportionate numbers of dropouts. But critics neglect to note that the CPS also *understates* graduation rates by omitting the military, which includes disproportionately few dropouts, especially for minorities. We found that using the decennial census (which includes prison and military populations) in our analysis does not appreciably change (less than 0.3%) the overall measured graduation rates reported by the CPS, because the prison and military distortions mostly offset each other. An exception is black males, whose high incarceration rates do result in an overstatement in the CPS graduation rates — but only of about 3 percentage points, not enough to make a significant dent in the difference between the conventional estimate of a 50% regular graduation rate for blacks and the CPS-based estimate of 75%.

Examination of the decennial census reveals another significant understatement of graduation rates in the CPS. This results from the inclusion of immigrants who arrived after their school-age years in counts of high school completion rates for 25- to 29-year-olds. The result is a CPS understatement of graduation rates of 4 percentage points for the total population and 16 points for Hispanics. The critics of the CPS never seemed to notice this rather large bias. In sum, to the extent there is a problem in sample definitions in the CPS, the impact is to understate overall graduation rates.

We looked for information on whether people lied about their education to surveyors. We found that this problem has not been studied, and it should be. But this means that the charge that the CPS overstates graduation rates because of misreporting is pure speculation; there is no evidence that could directly confirm or deny it. We did find one way to assess whether dropouts lie to surveyors. We examined a high-quality survey conducted by the U.S. Department of Education, the National Education Longitudinal Study (NELS). Like the census, NELS develops its graduation rate data by surveying respondents, but then it checks respondents' answers against high school transcripts. It turns out

that the NELS and CPS results are very similar, suggesting that the misreporting bias in the CPS is very small.

To the extent that misreporting is a problem, there is still no reason to suspect that it has grown appreciably over time. This is important because if there is a bias, but one that is relatively constant over time, then the trend data showing an increase in graduation rates are believable. No critics of household survey data have produced any empirical support for the notion that the misreporting bias is not only large but growing.

NATIONAL LONGITUDINAL DATA

In our view, the very best data to use in measuring graduation rates are longitudinal data that follow the same students over time. NELS is the very best of such sources because, as we noted above, it tracks individual students over time and verifies students' graduation status with transcripts independently obtained from schools. Most researchers consider NELS to be the "gold standard" of education survey research. The study began with eighth graders in 1988 and followed them over the next 12 years, with interviews in 1990, 1992, 1994, and 2000. It shows that, by 1994, two years after their on-time graduation date, slightly more than 82% of all students had completed high school with a regular diploma. Regular diploma rates were 85% for whites, 95% for Asians, 74% for blacks, and 74% for Hispanics.

These results are appropriate to compare with the new conventional wisdom, that only two-thirds of all students, and only half of all minorities, graduate from high school with a diploma. The calculations of Jay Greene and Christopher Swanson, although often proclaimed to be measures of "on-time" graduation, also include those who graduate later than their expected date. This is because the diploma data they have collected from the Common Core of Data (CCD) do not distinguish between diplomas awarded to students who took four, five, six, or more years to earn them.

The NELS results are confirmed by two other large-scale longitudinal surveys, the National Longitudinal Surveys of Youth (often referred to as NLSY97 and NLSY79) conducted by the Bureau of Labor Statistics. They show that, for persons aged 20 to 22 in 2002 (including those in prison), the overall graduation rate is the same as in NELS: 82% overall, 75% for blacks, and 76% for Hispanics.⁸ These data also show an improvement in graduation rates for every race and gender group since 1984, except for black men, whose rates have remained steady. The improvements are particularly large and significant for Hispanics, both males and females.

Are there serious critiques of the NELS or NLSY data? Yes, as with any survey, there are legitimate concerns about coverage and sample attrition. However, substantial resources have been invested in conducting these surveys in a way that overcomes these problems. There is no research that suggests that there is any substantial sampling problem with these data and certainly no alleged bias that could reduce the NELS estimate of a 74% black graduation rate with a regular diploma to the much-hyped 50% rate.

A serious problem with these national longitudinal data is that they cannot provide local district or state estimates,

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and they are not done regularly enough to capture annual trends. One of the attractions of the research by Jay Greene and Christopher Swanson is that it provides graduation data for districts and states and can be updated regularly. But if, as we have shown, the researchers' claims are flawed, having local versions of these exaggerations is no benefit.

SCHOOL ENROLLMENT AND DIPLOMA DATA

As it turns out, the gap between Greene's and Swanson's estimates of graduation rates and those we find in household surveys and in national longitudinal data are primarily due not to flaws in the CCD but to flawed decisions the researchers made about how to use the data.

We have already noted that CCD data do not permit calculations of "on-time" graduation, because diploma reports from the CCD do not necessarily apply to the same individuals as those counted in ninth-grade enrollment data three years earlier. In this respect, the CCD can tell us no more than the survey data about on-time rates.

The most serious problem with estimating graduation rates from the CCD is that it does not report data for *entering ninth-graders*; rather, it reports data for *ninth-grade enrollment*, including students who are repeating ninth grade or who have remained in ninth grade for more than a year

because they have not accumulated enough credits to be counted as 10th-graders. This is an important distinction because there is substantial retention of students, particularly minorities, in ninth grade — and sometimes in 10th grade as well. For the nation as a whole, there are about 13% more students in ninth grade in public schools than in the eighth grade in the previous year; for blacks and Hispanics the rate is more like 25%. Thus, if you divide the number of diplomas awarded (the numerator) by the number of ninth-graders three years earlier (the denominator), you will get an artificially low graduation rate because the denominator has been exaggerated. Retention is larger for some demographic groups and in some states, so the method for accounting for retention — or not doing so — can also greatly affect racial and state comparisons.

Greene's recent estimates attempt to correct for this retention bias by using as a base the average of eighth-, ninth-, and 10th-grade enrollment. This is better than just using ninth grade, but Greene's "smoothed" ninth grade is still significantly larger than eighth-grade enrollment, especially for minorities. The extra retention bulge in Greene's data incorrectly lowers the black graduation rate by 5 percentage points and the Hispanic rate by 7 percentage points.

Swanson's estimates are also flawed because he starts with an artificially high estimate of the beginning cohort. He computes diplomas relative to ninth-graders, including those retained in ninth grade as well as those entering ninth grade (actually, he looks at the erosion of enrollment between grades for every grade after ninth). If he had extended his analysis back to eighth grade, his measured overall graduation rate would have been 8 percentage points higher (to about 79 percent), and his rates for whites, blacks, and Hispanics would have been 4, 11, and 13 points higher, respectively. So Swanson's failure to adjust for the ninth-grade bulge also leads him to substantially understate graduation rates and to exaggerate racial and ethnic graduation gaps.

Trying to estimate graduation rates by comparing CCD counts of total diplomas with the size of the entering high school class is also challenged by accounting for immigration. If a 16-year-old immigrates from Mexico, enrolls in high school, and graduates, this would make the graduation rate seem artificially high because that immigrant youth was not included in the earlier ninth-grade enrollment data.

There is no way to correct for this problem using CCD data alone. Curiously, Greene makes a population adjustment for immigrants by using the very census data he mistrusts for graduation rates. He does so by adding census numbers for the total number of immigrants during the three years prior to graduation to the CCD ninth-grade enrollment numbers. But this adjustment implicitly assumes that every

immigrant between the ages of 15 and 17 enters high school — and that those who do not graduate should be considered dropouts. Such an assumption is absurd — this group has a graduation probability of less than a third.⁹ American high schools have their problems, but no serious observer would claim that they should be faulted for failing to graduate immigrants who may never have enrolled or who enrolled for only a brief period of time.

There is also a technical problem here of which Greene was apparently unaware. He adjusts the size of his ninth-grade cohort by adding immigrants between 14 and 17 years of age from 1999 to 2002. As we noted above, the 2000 census made extraordinary efforts to ensure full coverage of hard-to-count population groups and discovered a larger population than it had estimated. However, the Census Bureau did not revise its published earlier estimates of population counts for the 1990s, including that for 1999.

Using the published but uncorrected numbers, however, Greene assumes that there were 7% more 17-year-olds in 2002 than there were 14-year-olds in 1999, with the growth being 21% for Hispanics and 25% for Asians. A closer look at the data shows that nearly all of this population growth occurred between 1999 and 2000, and very little between 2000 and 2002 — this is because the population change of 1999 to 2000 reflects all of the population growth underestimated over the entire 1990s, which got corrected in one year. Greene's miscalculation here makes a huge difference; if he had avoided distortions caused by the one-time ballooning of population counts in 2000, his graduation rates for blacks would be 3 percentage points higher; for Hispanics, 7 points higher; and for Asians, 12 points higher.

It is possible to get measures of graduation rates using the CCD that are not so contrary to what we know from survey data. For instance, comparing diplomas to the number of students enrolled in *eighth*, not ninth, grade — five years earlier — yields an overall graduation rate of about 79%, not too distant from the 83% in NELS. Such a calculation has a small flaw, however: the CCD's count of public school eighth-graders understates the size of the entering high school class because the eighth-grade numbers do not include private school students who may have transferred to public high schools at the beginning of the ninth grade. This is a small bias, however. On the other hand, the NELS estimate is a bit too high (about one percentage point) because it includes private school students. All in all, the gap between NELS and other survey data, and such a calculation using the CCD, is not huge.¹⁰

The consequences of Greene's and Swanson's choices in estimating the entering-year cohort by using ninth-grade

enrollment and of Greene's flawed and inappropriate population adjustment are artificially low graduation rates and artificially inflated racial/ethnic gaps.

SO WHAT?

Does it really matter whether the overall graduation rate is 83%, as we estimate, or the now conventional range of 67% to 70%, as Greene and Swanson (and the National Governors Association) claim? After all, estimates of lower dropout rates still represent a larger than desired population of dropouts.

Obviously there are places in which dropping out is far too frequent in some populations, and some dropout problems require comprehensive action if we are to improve students' life chances and address class and racial/ethnic gaps in graduation. But there is also an important value in getting the facts correct and especially in recognizing improvements over time. Referring to a 50% graduation rate for minorities not only is factually incorrect but also can too easily encourage mischaracterizing the black student population as too hard to reach or as being uninterested in education. Pointing out that three of every four black youths get a diploma and another 13% receive a GED is factually correct and appropriately acknowledges the striving and persistence of black students.¹¹

Reports of artificially low graduation rates also help advance a misdirected *across-the-board* indictment of schools. Inaccurate characterization of success in high schools can lead to misguided or wrongfully targeted reform efforts that could be harmful. In contrast, recognition that there has been progress in improving graduation rates might lead to an examination of what some schools must be doing right, practices that might be supported and extended to other schools.

In truth, the dropout problem is concentrated in about 20% of our high schools.¹² If we examine graduation rates by socioeconomic status, we see that there is only a 3% dropout rate for the upper three-fifths of students. (This calculation includes GED recipients as high school completers.) Yet the bottom fifth had 27% who failed to complete high school in any way, and only 62% who obtained a regular diploma. The next higher fifth had 13% who failed to complete high school.¹³ Interestingly, among students in the lowest socioeconomic fifth, black students have the highest probability of completing high school, greater than that of low-income whites and Hispanics.¹⁴ This is another reminder of how puzzling the connections between race and class are in our society.

To the extent that we have a dropout crisis, it is primarily a crisis of youths at the bottom of the socioeconomic

scale, regardless of race (although race, which plays a far too important role in our society, is clearly the strongest factor in relegating students to the bottom fifth). To address these children's problems, we need comprehensive efforts to improve their schools, including offering alternative programs and developing second-chance systems. But we also have to think about the lives of these students outside of school and the disadvantages they face before they ever get to school (there are huge disparities in educational attainment by income and race when students start kindergarten!). This means fighting poverty through better jobs and wages, providing early childhood development programs, creating stable housing, providing health care, and fighting crime. These are, of course, daunting tasks, but their difficulty in no way diminishes their importance.

1. *Graduation Counts: A Report of the National Governors Association Task Force on State High School Graduation Data* (Washington, D.C.: National Governors Association, 2005), p. 9, available at www.nga.org.

2. See, for example, Jay P. Greene and Marcus A. Winters, *Leaving Boys Behind: Public High School Graduation Rates* (New York: Manhattan Institute, Civic Report No. 48, 2006), available at www.manhattan-institute.org; and Christopher Swanson, *Who Graduates? Who Doesn't? A Statistical Portrait of Public High School Graduation, Class of 2001* (Washington, D.C.: Urban Institute, 2004), available at www.urban.org.

3. "Graduation Rates," Fact Sheet, Alliance for Excellent Education, March 2006, available at www.all4ed.org/publications/MeasuringGraduationToMeasureSuccess/GradRatesFactSheet.pdf; "Telling the Whole Truth (Or Not) About High School Graduation," Education Trust, December 2003, available at www2.edtrust.org; and Gary Orfield et al., *Losing Our Future: How Minority Youth Are Being Left Behind by the Graduation Rate Crisis* (Cambridge, Mass.: Civil Rights Project, Harvard University, 25 February 2004), available at www.civilrightsproject.harvard.edu.

4. These census data include all forms of completion, including GEDs. However, the substantial increase in total completion cannot be significantly attributable to the rise in GEDs during this period.

5. Carolyn J. Hill and Harry Holzer, "Labor Market Experiences and Transitions to Adulthood," paper presented at the Conference on the Economics of the Transition to Adulthood, New York, January 2006.

6. Lawrence Mishel, Jared Bernstein, and Sylvia Allegretto, *The State of Working America 2006/2007* (Washington, D.C.: Economic Policy Institute, forthcoming), Table 3.16.

7. George J. Borjas and Lawrence F. Katz, "The Evolution of the Mexican-Born Workforce in the United States," Working Paper No. 11281, National Bureau of Education Research, Cambridge, Mass., April 2005.

8. Hill and Holzer, op cit.

9. Calculated from the 2000 decennial census data as the percentage of those immigrating at ages 15 to 17 who completed high school (including GEDs).

10. Jing Miao and Walt Haney, "High School Graduation Rates: Alternative Methods and Implications," *Education Policy Analysis Archives*, vol. 12, 15 October 2004, available at <http://epaa.asu.edu>.

11. Cheryl Almeida, Cassius Johnson, and Adria Steinberg, *Making Good on a Promise: What Policymakers Can Do to Support the Educational Persistence of Dropouts* (Boston: Jobs for the Future, April 2006), available at www.jff.org/JFF_KC_Page.php.

12. Russell W. Rumberger and Scott L. Thomas, "The Distribution of Dropout and Turnover Rates Among Urban and Suburban High Schools," *Sociology of Education*, vol. 73, 2000, pp. 39-67.

13. Clifford Adelman, *The Toolbox Revisited: Paths to Degree Completion from High School Through College* (Washington, D.C.: U.S. Department of Education, 2006), available at www.ed.gov.

14. Almeida, Johnson, and Steinberg, op cit.



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