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High School Dropout and Graduation Rates: What Do the Numbers Tell Us?

*A paper produced jointly by
Voices for Virginia's Children
and the JustChildren Program*

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What do the numbers tell us?

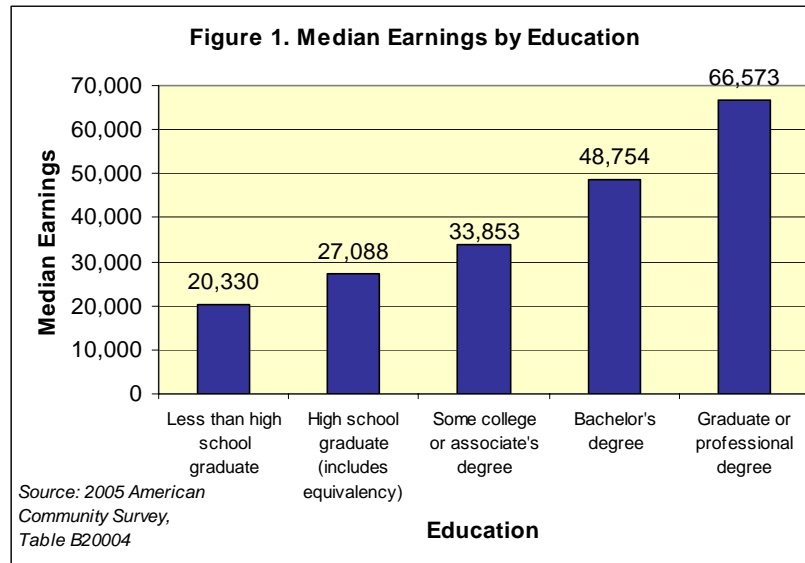
First, the data tell us it's important to graduate from high school. Second, there are a lot of state and division-level data available, but there is no consensus about how to define dropout and graduation rates uniformly so that we can know what is happening in schools. Currently, it is difficult to gauge the scope of the high school dropout problem in Virginia localities because of challenges surrounding the reported rates. Finally, no matter what measure we use, the numbers tell us that too many kids are failing to graduate, and we need to increase the numbers of youths who successfully complete high school.

This paper has two purposes: 1) to identify some of the challenges we face as we use data to try to understand what is happening in Virginia high schools and 2) to propose some solutions to both the data and the dropout problems.

We hope that high quality data collection and accurate, consistent measures of high school graduation and completion rates will help us track progress and identify strategies that work.

What do the numbers tell us? High school graduation is important.

High school graduation is important to *individuals* because they need to obtain a high school diploma in order to find work that pays a self-sufficient wage.



In 1964, a high school dropout earned 64 cents for every dollar earned by a diploma holder. In contrast, a 2004 high school dropout earned 37 cents for every dollar earned by a diploma holder.¹ *Figure 1* shows the median earnings for people in Virginia with varying levels of education. Median earnings means half of people in the category “less than a high school graduate” earned more than \$20,330 and half earned less than \$20,330. Those with a Bachelor’s degree earned more than twice the median income of those who were not high school graduates.

High school graduation is important to *communities* because producing graduates is the best way to remain competitive in a world economy.

It is in the best interest of communities to support programs and policies that will increase the percentage of students who graduate from high school. Educated citizens will be able to support themselves and their families and will be able to contribute to the economy through payroll taxes. Adequate employment opportunities are no longer sufficiently available for people without a high school diploma -- today a high school diploma is essential.

Thomas J. Donahue, President and C.E.O. of the U.S. Chamber of Commerce, recently issued a call to action to improve education so that the United States could remain competitive in a rapidly changing global economy:

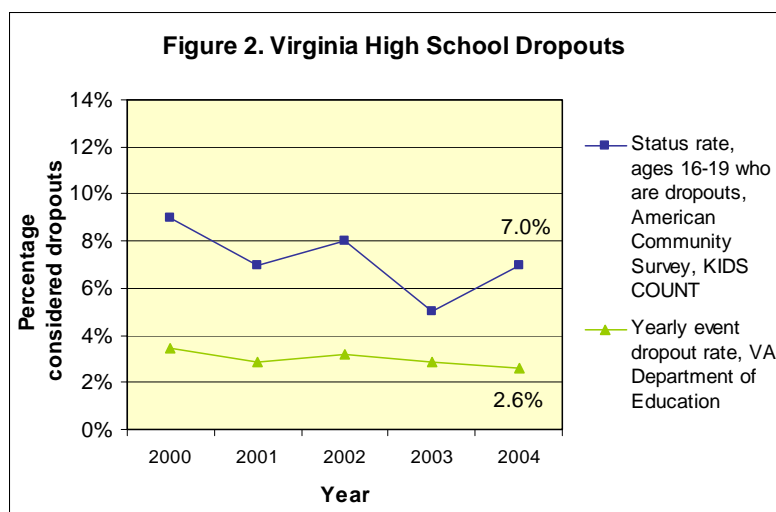
The bottom line is that this nation cannot rightfully expect to lead the 21st century’s information and technology-driven global economy when we have upwards of 30 percent of our young people not even graduating from high school.²

The Chamber has pledged to conduct independent professional research to identify and rank student performance *by state and county* in an effort to successfully attract companies to the geographic locations that can provide them with qualified workers.³ In the coming years, it will be crucial for Virginia to produce the highly skilled work force that will attract businesses and industries in a “flat world”⁴ – a world where investors are no longer limited by state and national boundaries.

What do the numbers tell us? Virginia needs better data.

Virginia needs better data to determine the degree and scope of the high school dropout problem on state, district, and school levels.

The yearly event dropout rate calculated by the Virginia Department of Education (VDOE) and the dropout rate calculated by the Census’ American Community Survey both show a decline in the percentage of dropouts over time (*Figure 2*).⁵



However, researchers have criticized both measures as underestimates of the dropout crisis. The Census data are self-reported and it is believed that respondents may misunderstand the survey question or may overstate their child’s academic status. Even if these measures indicate a valid, positive trend, we have a serious problem: almost 10,000 students are dropping out each year according to the VDOE dropout rate.

It is vital that we push for more accurate data in Virginia so that we can correctly assess the degree and scope of the dropout problem. With better data we will be able to make better decisions, such as the correct allocation of resources to combat the problem.

How do we use the data?

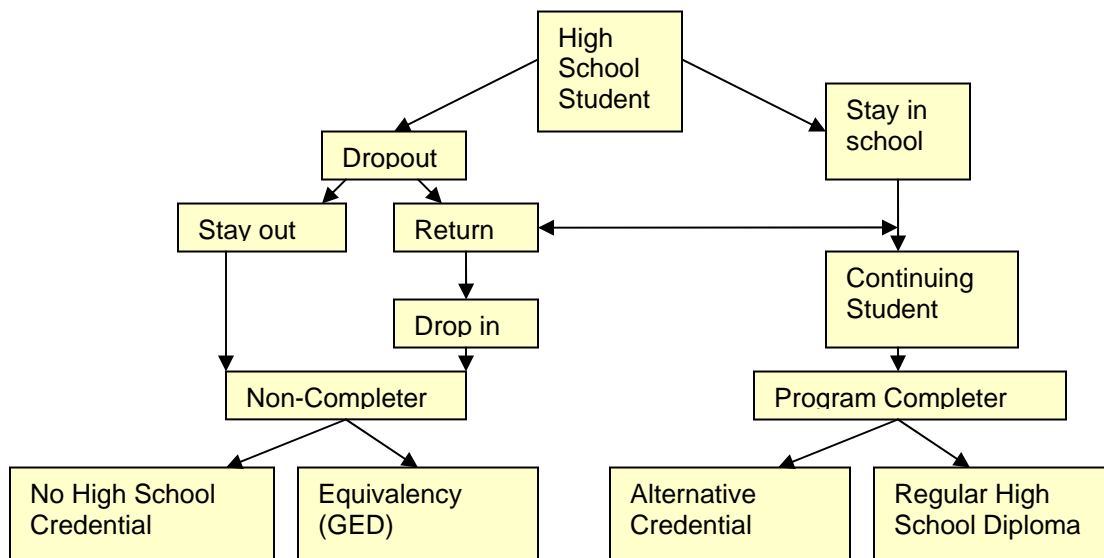
Understanding the data requires identifying all of the ways students can complete or leave high school.

Not every child is either a “dropout” or a “graduate.”

Even taken together, graduation and dropout rates do not account for all high school students. Although graduation rates and dropout rates are related, there are many different paths through or out of high school. *Diagram 1* illustrates the complexity of the possible routes through high school.

Diagram 1: Paths through High School

Adapted from Urban Institute, Education Policy Center, Christopher B. Swanson



Some students fail a grade and take longer than four years to graduate, some students drop out and eventually return, and other students receive alternative credentials and are not necessarily included in a count of graduates. Thus, the number of dropouts added to the number of graduates will be less than the total number of students in any given class. The various paths and categories for high school completion make the calculation of graduation and dropout rates complex. Even national experts disagree on the best ways to categorize students and to calculate graduation and dropout rates.

Virginia is working on an Education Information Management System that will be able to track students from school to school using a unique student identifier. By 2008, the EIMS will have collected 4 years worth of data, and we will be able to calculate graduation rates that take into account transfers in and out and students who are still in school, but who are taking more than four years to graduate.

We also need to understand all of the various graduation and dropout rate formulas available for computing rates at the division-level.

Dropout Rates:

1. Virginia Department of Education Dropout Rate

Virginia Department of Education (VDOE) releases a dropout rate based on the National Center for Education Statistics' definition of a dropout (*see Appendix*). The dropout rate, sometimes called an *event or annual rate*, measures the number of students reported as dropouts by each school division on October 1st of each year. VDOE reports the rate for grades 7-12. Virginia KIDS COUNT recalculates the rate and reports a high school dropout rate for grades 9-12. The high school dropout rate for Virginia for 2005 was 2.59%. This means that for every 100 students expected to be enrolled, 2.5 dropped out.

There are possible problems with the VDOE dropout rate. The current data collection coding methods do not require any documentation of the student's transfer to another school. Lack of supporting documentation and incentives to minimize dropout rates may lead schools to code students as transfers as the default when their whereabouts or dropout status is unknown. This type of coding could cause the event dropout rate to be lower than it really is.

This measure is currently available at the state and school division levels.

2. American Community Survey Status Dropout Rate

The U.S. Census, American Community Survey reports a dropout rate based on the number of students ages 16-19 who are not enrolled in school and have not graduated. This *status* rate provides a picture of all teens ages 16-19 regardless of when they dropped out. This rate is currently available at www.census.gov for any locality with a population of at least 65,000. According to the American Community Survey, 7% of teens ages 16-19 were high school dropouts in Virginia in 2004.

This measure counts GED (General Educational Development) recipients as graduates. Most measures classify GED recipients as dropouts. Students who are currently classified as dropouts might be labeled graduates in a later survey if they obtain a GED before the next survey. In addition, this measure is based on survey data, which has the potential of being reported incorrectly if the respondent does not understand the question or overstates a child's educational status. KIDS COUNT interprets this measure as an indicator of child well-being rather than an indicator of school performance.

This measure is currently available for states and for large localities.

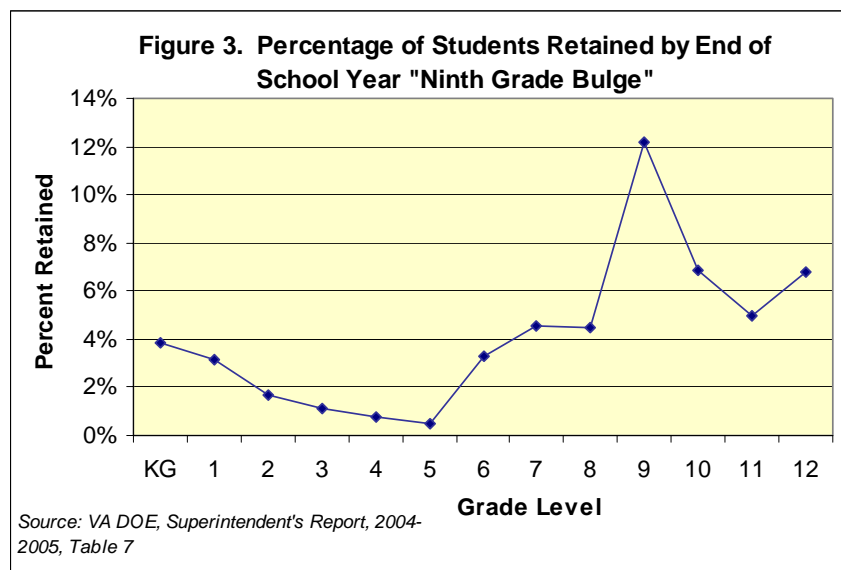
Graduation Rates:

1. Virginia Unadjusted Graduation Rate

The Virginia Department of Education publishes *Graduates as a Percentage of Ninth Grade Membership Four Years Earlier* in the Superintendent's Annual Report. This measure compares the total number of all high school completers to the number of students enrolled in ninth grade four years earlier. This measure is available for all school divisions. For the Class of 2005, 76.7% of students completed high school in four years.

There are two major problems with this measurement:

First, the "ninth grade bulge" may lead to an underestimate of high school graduates. More students are retained (held back) in ninth grade than in any other grade due to the requirement to earn credits. This large ninth grade enrollment is sometimes referred to as the "ninth grade bulge." (See Figure 3.)



Graduation rates that compare the number of graduates to the number of total students in the ninth grade class four years earlier will result in a rate that is lower than the true rate because of an inflated denominator. Some measures deal with this problem by comparing "first-time" ninth graders to graduates four years later.

A large "ninth grade bulge" should not be taken lightly. Although some of the ninth graders who are retained will eventually go on to earn a high school diploma, many of them are likely to drop out. Indeed, grade retention can significantly increase a student's chances of dropping out and usually leads to little academic gain.

A large “ninth grade bulge” could be a warning sign that students are not being prepared in the early grades. Forty-five percent of students surveyed by Civic Enterprises said they started high school poorly prepared by their earlier schooling.⁶

Second, this measure counts all high school completers as graduates no matter what kind of credential they earn. Some researchers recommend counting only Standard and Advanced Diploma holders as graduates because these are the credentials that are most closely aligned with the knowledge and skills Virginia educators have identified as necessary for success in the workplace and in life. Few researchers would count a GED completer as a graduate as this measure does. The over-counting of completers as graduates may somewhat offset the deflating tendencies of the ninth grade bulge.

This rate is currently available at the state and school division levels.

2. Promoting Power

In response to the lack of accurate nationwide dropout data, researchers at John Hopkins University have created a “promoting power” calculation for *every high school in the country*. This measure compares the number of 12th graders to the number of 9th graders enrolled in the high school three years earlier, and provides a measure of how efficiently and effectively high schools promote their students from grade to grade. The promoting power database is available on the Alliance for Excellent Education’s website www.all4ed.org.

This measure is currently available at the state level and individual high school level.

3. NGA On-Time Graduation Rate

The Virginia Department of Education recognizes the challenges associated with the current data and plans to have individual student-level data available by 2008. These data should enable us to track the exact number of graduates, dropouts, transfers, and retained students who are still in school and compute an “on-time” graduation rate. This rate was recommended by the National Governors Association (NGA) in a 2005 publication entitled “Graduation Counts: A Report of the National Governors Association Task Force on State High School Graduation Data.” Here is the formula:

$$\text{Graduation rate} = \frac{\text{(on-time graduates in year x)}}{\text{(first time entering ninth graders in year x-4) + (transfers in) - (transfers out)}}$$

The purpose of a graduation rate is to measure the percentage of students who complete high school with the knowledge and skills that will enable them to compete in the marketplace or pursue further education. Accordingly, we recommend including earners of Advanced Diplomas and Standard Diplomas as graduates since those diplomas represent the acquisition of such knowledge and skills. Special education students who earn Modified Standard diplomas might also be considered graduates since they have taken and passed high school courses and achieved an (adjusted) passing score on the 8th grade reading and math SOL tests. The NGA does not

recommend counting students, including students with disabilities, who obtain alternative credentials such as a Certificate of Completion or a General Educational Development (GED) as graduates.

This measure will not be available until 2008.

4. Averaged Freshman Graduation Rate

National Center for Education Statistics recommends calculating an “averaged freshman graduation rate.” This measure can be calculated by averaging the enrollment of one particular cohort for 8th, 9th, and 10th grades and comparing the resulting average enrollment to the number of students in that cohort who receive a Standard or Advanced Diploma four years later. This measure can be calculated using data currently provided on Virginia Department of Education’s website. The Averaged Freshman Graduation Rate mitigates the problem of the large ninth grade class comprised of first and second time ninth graders by averaging the enrollment of 8th, 9th and 10th grades. This measure does not account for the ninth grade bulge or student mobility.

This measure is not currently available, but can be calculated using data that are available on the Virginia Department of Education’s website.

How do we obtain better data?

Now that we understand the strengths and weaknesses of the measures available, it is possible to make recommendations about data collection and measurement.

Virginia should:

- 1. Develop strong state guidelines for collecting and coding data to ensure the data are as accurate as possible.** The Virginia Department of Education needs to set up the Education Information Management System in a way that creates an incentive for schools to find out what happens to their students. The default code for a missing student should be “dropout” instead of “transfer.” If the school cannot produce documentation of the student’s transfer (such as records request from the receiving school or a note from a parent), the student should be coded a “dropout.” This simple change will encourage schools to find out the status of children to avoid over-inflated dropout rates.
- 2. Collect school-level data disaggregated by race, poverty, gender, disability and limited English proficiency.** We suspect that members of certain subgroups are dropping out in disproportionately large numbers. We need to collect data on these subgroups to ensure that *every* Virginia student has the opportunity to succeed.
- 3. Conduct audits of local record keeping and data collection.**
- 4. Use multiple measures.** Each measure has strengths and weaknesses. When multiple rates are available, a more complete and clearer picture evolves. For example, the National Governors Association On-Time Graduation Rate would not measure students who take longer than four years to graduate. The availability of five and six year cohort graduation rates would complement the On-Time Graduation Rate.
- 5. Use multiple indicators.** The graduation rate is important, but we need to know about the dropout rate, too. We also need to know about factors that are associated with high dropout rates like attendance, truancy, retention, and suspension and expulsion rates.
- 6. Post all data on the Virginia Department of Education website.** The various available rates should be clearly explained and accessible to the public on the Virginia Department of Education’s website.

What do the numbers tell us?

Virginia could benefit from a statewide emphasis on increasing graduation rates.

There is a high cost to communities when youth are on the streets, not learning job skills, and unable to secure stable and gainful employment. Currently, more than 1 in 4 Virginia students fail to graduate in four years (73.5% for the Class of 2004 on-time graduation rate). An even higher proportion of poor and minority students do not make it to graduation day⁷ (See Table 1).

	Black	Hispanic	White
2000-01	64%	75%	77%
2001-02	63%	76%	77%
2002-03	66%	78%	78%
2003-04	61%	67%	77%

Source: "The Virginia Class of 2004: Graduation Rates, Trends" . . . see endnote

In fact, a study conducted by the Virginia Department of Education reported that graduation rates for African American students fell from 66% for the Class of 2003 to 61% for the Class of 2004, and graduation rates for Hispanic students plummeted from 78% for the Class of 2003 to 67% for the Class of 2004.⁸

Furthermore, Virginia's graduation rates range by school division from 40% to 100%,⁹ and by school from 27% to 100%.¹⁰ The lower the graduation rate, the higher the cost to the community.

There are several strategies Virginia could adopt to increase the graduation rate, even while we wait for a new data system to come online in 2008.

1. Increase the holding power of high schools.

- Reimburse schools for average daily attendance instead of the September 30th child count, to create incentives for schools to keep kids in classrooms and at desks learning each day, through the entire school year.
- Require schools to meet reasonable graduation rate targets as an element of school accreditation.

2. Address the underlying causes of dropping out. A qualitative study should be conducted by interviewing school officials, juvenile court judges, prosecutors, probation officers, social workers, and police officers to determine why children are dropping out of school. Attendance and discipline policies should be examined.

- Tracking attendance rates in the earlier grades could provide us with valuable information about a school’s ability to produce future graduates. Recent research supports the common-sense notion that gradual student disengagement is a precursor to eventual dropping out.¹¹ Low attendance rates may indicate a number of things that should be of concern to us: an unhealthy school climate overall characterized by poor relationships between teachers and students, lack of enforcement of truancy laws, students falling behind, or the opposite – coursework that is not challenging enough.
- Addressing the dropout problem in Virginia requires comprehensive data collection and a careful review of actual current school discipline policies and practices.¹² Nationwide, students all too often don’t come to school because their attendance is forbidden due to rule infractions, including, ironically, truancy. Most exclusionary disciplines are not necessary. Less than 18% of punitive school exclusions are in response to serious infractions such as those involving tobacco, drugs and alcohol, fighting and assault, weapons, threats, and theft.¹³ The vast majority are for so called “friction” offenses (disorderly conduct, “other offenses”¹⁴).

3. Create interventions for at-risk students based on programs that have worked.

Last year, the federal Government Accountability Office identified and reviewed five intervention programs aimed at increasing graduation rates. Although the GAO sharply criticized the U.S. Department of Education for failure to conduct rigorous evaluations of these interventions and disseminate existing research to schools, it found that certain interventions – school wide restructuring efforts, alternative forms of education for students who do not do well in a regular classroom, and supplemental services (tutoring and mentoring) for at-risk students – had demonstrated potential to increase attendance and graduation rates.¹⁵

SUCCESS Program at Chesterfield County’s Manchester High School is a transition program geared toward reducing 9th grade retention rates. Ninth grade failure is a strong predictor of attendance, academic, and behavioral problems as well as eventual dropping out. Since the program began in 2000, freshman failure rates at Manchester have dropped from 10.3% to 2.7%.

4. Increase school readiness.

- Improve families’ access to economic resources since poverty in a young child’s life is associated with dropping out later.¹⁶
- Increase access to health care, especially prenatal care, since low birthweight has been correlated with dropping out.¹⁷
- Expand access to high quality early education programs; research has shown that participants in these programs obtained higher levels of education.¹⁸

Given the increasing need to have a high school diploma to be economically self-sufficient, it is essential to overcome these data challenges and arrive at an accurate, easily understood measure. Good decisions require good data. The Commonwealth must make critical decisions to keep from losing the futures of many young people.

Appendix

National Center for Education Statistics definition of a dropout:

1. Was enrolled in school at some time during the previous school year and was not enrolled on October 1st of the current school year, or
2. Was not enrolled on October 1 of the previous school year although expected to be in membership; and
3. Has not graduated from high school or completed a state- or district-approved educational program; and
4. Does not meet any of the following exclusionary conditions:
 - (i) Transfer to another public school district, private school, or state- or district- approved education program.
 - (ii) Temporary school-recognized absence due to suspension or illness;
 - (iii) Death.



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¹ Rouse, Cecelia Elena. (2005). "The labor market consequences of an inadequate education." Paper presented at the Symposium on Social Costs of Inadequate Education, Teachers' College, Columbia University.

² Thomas J. Donohue, "State of American Business Press Briefing," (Jan. 2006), available at http://www.uschamber.com/press/speeches/2006/060104tjd_sabpress.htm.

³ U.S. Chamber of Commerce, "The State of American Business 2006," p. 14. www.uschamber.com/publications/reports/sab.htm.

⁴ Thomas L. Friedman, "The World Is Flat: A Brief History of the Twenty-First Century," Farrar, et al (2005).

⁵ The high school dropout status rate from KIDS COUNT is a three year average of ACS data and can be found on the website www.kidscount.org under state level data online, choose profile for Virginia. The Virginia Department of Education dropout rate for 9th-12th grades can be found at www.vakids.org on the CLIKs online interactive data.

⁶ The Silent Epidemic: Perspectives of High School Dropouts (2006). A report by Civic Enterprises in association with Peter D. Hard Research Associates for the Bill & Melinda Gates Foundation.

⁷ See "The Virginia Class of 2004: Graduation Rates, Trends, and Remedial Initiatives," Commonwealth Educational Policy Institute, Virginia Commonwealth University, April 2005, available at <http://www.doe.virginia.gov/VDOE/FinalGradReportwithIntroLetter.pdf>.

⁸ See id.

⁹ See Virginia Department of Education's "Report of Graduates" for the Class of 2005, available at <http://www.pen.k12.va.us/VDOE/Publications/asrstat/2004-05/Table5.pdf>.

¹⁰ See Virginia Board of Education Consolidated State Application Amended Accountability Workbook, August 16, 2005, available at <http://www.ed.gov/admins/lead/account/stateplans03/vacsa.pdf> at page 38.

¹¹ See, for example, "The Silent Epidemic: Perspectives of High School Dropouts," Civic Enterprises (March 2006). Academic and social factors such as school attendance rates, students taking advanced courses, and student perceptions of a fair discipline policy are predictive of dropout rates, even when controlling for the background characteristics of students and the resources of their schools. ¹¹ Rumberger, R. W. (2001). *Why students drop out of school and what can be done*. Santa Barbara, CA: University of California–Santa Barbara. Retrieved May 15, 2003, from <http://www.civilrightsproject.harvard.edu/research/dropouts/rumberger.pdf>.

¹² Although we compile some of this data in the Annual Report on Discipline, Crime, and Violence, we do not collect data broken down by school or by student subgroups, nor do we analyze it in conjunction with our goal of increasing graduation rates. We also do not collect data about the loss of instructional time due to suspensions or the availability and provision of alternative education services for those students who are suspended or expelled.

¹³ Calculations based on data reported in the Virginia Annual Report on Discipline, Crime, and Violence, 2004-2005, at pp. 19-22, available at http://www.pen.k12.va.us/VDOE/Publications/Discipline/datacoll/04_annual_report.pdf.

¹⁴ "Other offenses" are generally offenses less serious than disorderly conduct. See id at 12.

¹⁵ See Government Accountability Office, "NCLB: Education Could Do More to Help States Better Define Graduation Rates and Improve Knowledge About Intervention Strategies," available at <http://www.gao.gov/new.items/d05879.pdf>.

¹⁶ Brooks-Gunn, J. Duncan, G.J., and Maritato, N. 1997. "Poor families, poor outcomes: The well-being of children and youth." In J. Brooks-Gunn and G.J. Duncan, eds. *Consequences of growing up poor* (New York: Russell Sage Foundation).

¹⁷ Conley, D., & Bennett, N. 2000. "Is biology destiny?" Birthweight and life chances. *American Sociological Review* 65: 458-67.

¹⁸ See the Carolina Abecedarian Project, <http://www.fpg.unc.edu/~abc/>