IOWA HIGH SCHOOL GRADUATION RATES - THE NGA ADJUSTED RATES CALCULATION
Based on More Than Five Years of Student Level Data

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Background—The Iowa Department of Education (IDE) has collected individual student level data since 2004-2005 through Project EASIER (Electronic Access System for Iowa Education Records). In the EASIER system, each student has an assigned unique state student identification number.

Iowa's 2009 graduating class is the first group of students to have a statewide identification number for five years. With this identification system and Project EASIER data, Iowa can now follow the same group of students over several years and implement the first time freshman cohort rates (students who repeated their freshmen year were not included in the cohort). For the class of 2009, the IDE is reporting the National Governor Association (NGA) adjusted cohort rate. [1]The NGA rate is calculated by dividing the number of on time graduates (including transferred in graduates) by the number of first time 9th graders four years previous minus the number of transferred out and plus total transferred in students. The NGA formula used by the IDE allows an adjustment for special education students who take longer to graduate and early graduates who take less than four years to complete high school.

Definition and Formula for the NGA Adjusted Cohort Rate—Students included in the denominator of the cohort graduation rate calculation are first time freshmen and students who transferred in a given cohort in grades 9 to 12.

First time freshmen in fall of 2005 include: resident students attending a public school in the district; non-resident students open-enrolled in, whole grade sharing in, or tuitioned in; and foreign students on Visa. Those excluded are: home-schooled and nonpublic schooled students; public school student enrolled in another district but taking courses on a part-time basis; and foreign exchange students.

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[1]Prior to 2004-2005, the IDE collected school level graduation, dropout, and enrollment by race/ethnicity and gender. The IDE has estimated public school graduation rates based on graduates and dropouts from the class of 1998, this estimated rate also known as the National Center for Education Statistics (NCES) Leaver Rate.
 The Leaver Rate is calculated by dividing the number of high school regular diploma recipients in a given year by the estimated number of 9th graders four years previous. The estimated 9th grade enrollment is the sum of the number of high school regular diploma recipients in that year and dropouts over the four series year period (see Appendix A for details).

Transferred in students included in the cohort consist of students with the same entry codes as the freshman in fall of 2005, who joined the cohort in grade 9 in 2005-2006, grade 10 in 2006-2007, grade 11 in 2007-2008 and grade 12 in 2008-2009. The transferred in students are new in the Iowa public school system (not those students who were retained from earlier cohorts).

Students receiving regular diplomas are included as graduates in the numerator. Other completers, students who have finished the high school program, but did not earn a diploma are neither counted as graduates nor counted as dropouts. Early graduates from the cohort are removed from denominator are included in the cohort with the year they graduate. For this reason, the 2009 cohort will pick up some early graduates from later cohorts (2010, 2011), those early graduates will be inserted into the numerator and denominator.

Students with IEPs are given more flexibility under Iowa's NGA Adjusted Cohort Graduation Rate. If a student with an IEP remains enrolled, the student has until age 21 to graduate if stated in their IEP. These students are removed from the denominator of the cohort if they do not graduate in four years. Once they graduate, they are placed in the denominator and numerator of the cohort that is graduation that year.

Iowa NGA Adjusted Cohort Graduation Rate=
$$(FG + TIG + EIG + IEPIG) / (F + TI - TO + EIG + IEPIG - EOG - IEPNG)$$

For the graduating class of 2009:
   FG = First-time 9th grade students in fall of 2005 and graduated in 2009,
   TIG = Students who transferred in grades 9 to 12 and graduate in 2009,
   EIG = Early graduates in 2009 who should graduate in 2010 or later,
   IEPIG = IEP graduates in 2009 who should graduate in 2008 or earlier,
   F = First-time 9th grade student in fall of 2005,
   TI = Transferred in the first-time 9th graders' cohort in grades 9 to 12,
   TO = Transfer out (including emigrates and deceased),
   EOG = Students who started with this cohort and graduated in 2008 or sooner,
   IEPNG = IEP students who started with this cohort, fail to graduate in 2009 and still enrolled in school.

Although the NGA graduation rate and other cohort rate expect students to complete high school in four years, Iowa Department of Education is going to calculate extended year graduate rates in 2010 and beyond when six years and more of student level data are available.

Data files—in order to calculate 2009 cohort graduation rate, multiple years of student level data files are used. The files are:
   2004 fall and 2005 spring enrollment files;
   2005 fall and 2006 spring enrollment, and 2006 dropout files;
   2006 fall and 2007 spring enrollment, and 2007 dropout files;
   2007 fall and 2008 spring enrollment, and 2008 dropout files; and
   2008 fall and 2009 spring enrollment files.

Entry codes: 1-5, 15 and 19 are for resident students attending school in the district; non-resident students open-enrolled in, whole grade sharing in, or tuition in; and foreign students on Visa.

Exit codes: destination codes and destination location are examined to determine where/how to place students.[2]

Graduation Rate vs. Dropout—A benefit of having student level data and calculating the cohort graduation rate is to separate graduates from dropouts. Graduation is a high school event and dropout is an annual event. One student can drop out from school across multiple years and still graduate with his/her cohort, and this student will not be counted against a school/district or state on its graduation rate.

Business Rules—
- The value from the latest data collection from a district for race/ethnicity and gender is used;
- The status of IEP, ELL, migrant, and free and reduced-price lunch eligible is checked at each data collection. A student will be re-coded in IEP group (or ELL, migrant, and eligible for free and reduced-price lunch) if any of the 11 data collections was IEP (or ELL, Migrant, and eligible for free and reduced-price lunch).
- The latest event date is recorded if there are multiple records for a single ID.
- Accountable districts and schools: if attending district is not the resident district and the student was tuitioned in and resident district paid (state paid) the resident district is held accountable (or state). Attending district is the accountable district for opened-enrolled in, whole-grade sharing in, and tuitioned in parent paid students.

Procedures (steps)—
- Identify denominator and numerator;
- Up to down procedure – sort through all 2009 graduates to see where they were from;
- Down to up procedure – sort through all 2005 first time freshman (and students who transferred in the cohort) to see where they end.

Clean Data—Accurate graduation rate depends on clean data, well defined variables and coding system; verification and certification procedure is necessary to allow LEAs to edit data after each collection season (for example to add summer and fall graduates). Do not wait until four or five year later to ask LEAs about their missing students and resolve missing students early and often.

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[2]For details on entry and exit codes, see the Project EASIER data dictionary:

http://www.iowa.gov/educate/index.php?option=com_content&task=view&id=44&Itemid=310

Comparisons Among the Different Rates—Iowa public school graduation rates at the state level are slightly different from one method to another. However, all Iowa graduation rates are between 85 and 88 percent in 2009 and the differences between rates are less than 3 percent. The value of NGA adjusted rate, 87.2 percent, falls in between the NCES Leaver rate (87.9 percent – see Appendix A for details) and the fixed cohort rate (for example, the Title I regulation cohort rate 85.5 percent – see Appendix B for details, the fixed cohort rate does not allow any adjustment for IEP students who may take longer to graduate or the students who may graduate in three years or sooner). The reasons for Iowa's consistent graduation rates are: clean data, few missing students and most important of all, majority of the Iowa public school students complete school on time to receive regular diplomas in four years.

Issues—
- Iowa will need to change to the Title I graduation rate soon to comply with federal regulation (see Appendix C);
- Denominator for extended Title I rate is a fixed group of students which do not change year to year. Each year to add the new late graduates to the numerator;
- New vs. old race/ethnicity codes;
- Missing students;
- IEP students who might 'graduate' with the peer group but still enrolled for another year;
- Charter school students.

APPENDIX A

NCES Leaver Rate—The Leaver Rate is calculated by dividing the number of high school regular diploma recipients in a given year by the estimated number of 9th graders four years previous. The estimated 9th grade enrollment is the sum of the number of high school regular diploma recipients in that year and dropouts over the four series year period. More specifically: the total dropouts include the number of dropouts in grade 9 in year 1, the number of dropouts in grade 10 in year 2, the number of dropouts in grade 11 in year 3, and the number of dropouts in grade 12 in year 4.

$$GR_i = \frac{G_i}{G_i + D_i + D_{(i-1)} + D_{(i-2)} + D_{(i-3)}}$$

Where: GR_i is the graduation rate for a given year (i).

G_i is the number of students achieving a regular high school diploma for year i.

D_i is the number of dropouts in grade 12 for year i.

$D_{(i-1)}$ is the number of dropouts in grade 11 for the first previous year (i-1).

$D_{(i-2)}$ is the number of dropouts in grade 10 for the second previous year (i-2).

$D_{(i-3)}$ is the number of dropouts in grade 9 for the third previous year (i-3).

APPENDIX B

Title I Regulation Cohort Graduation Rate =
$$(FG + TIG + EG) / (F + TI - TO)$$

For the graduating class of 2009
FG = First-time 9th grade students in fall of 2005 and graduated in 2009,
TIG = Students who transferred in grades 9 to 12 and graduate in 2009,
EG = Early graduates, students who started with this cohort and graduated in 2008 or sooner,
F = First-time 9th grade student in fall of 2005,
TI = Transferred in the first-time 9th graders' cohort in grades 9 to 12,
TO = Transfer out (including emigrates and deceased).