

## THE COSTS OF DROPPING OUT OF SCHOOL IN IOWA: 2016 UPDATE

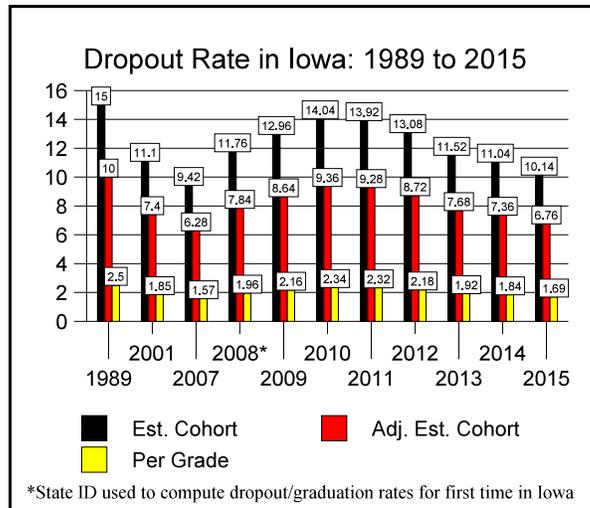
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*Definition of dropout:* The National Center for Education Statistics (NCES) definitions used for dropouts include students who satisfy one or more of the following conditions:

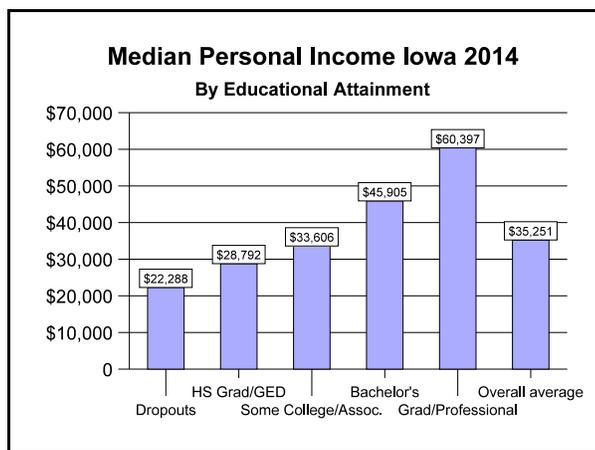
- Was enrolled in school at some time during the previous school year and was not enrolled by October 1 of the current year or
- Was enrolled in school at some time during the previous school year and left the school before the previous summer and
- Has not graduated from high school or completed a state or district-approved educational program; and
- Does not meet any of the following exclusionary conditions: a) transfer to another public school district, private school, or state or district-approved educational program, b) temporary school-recognized absence for suspension or illness, c) death, or d) move out of the state or leave the country.

A student who has left the regular program to attend an adult program designed to earn a high school equivalency (GED or HSED) or an adult high school diploma administered by a community college is considered a dropout. However, a student who enrolls in an alternative school or alternative program administered by a public school district is NOT considered a dropout.

*Dropout rate in Iowa (Grades 7-12):* The per grade dropout rate was 2.5 in 1989 (when the first study on costs of dropping out of school was conducted), decreasing to 1.57 in 2007. State ID was used to compute dropout/graduation rates for first time in 2008, and the rate increased to 2.34 in 2010; then it decreased to **1.84** in 2014 and **1.69** in 2015. The cohort rate was found by multiplying the per grade dropout rate by 6 (# years between grades 7 and 12); adjusted cohort rate is the cohort rate multiplied by 2/3 (to adjust for dropouts coming back into the system). The number of dropouts in 2014 was 4,004. (See figure to right.)



*Variation in personal income by education level (Iowa, 2014):* Less than HS (dropouts) \$22,288, HS graduate (incl. GED/HSEDs) \$28,792, some college or Assoc. degree \$33,606, bachelor’s degree \$45,905, graduate or professional degree \$60,397, overall average (all working Iowans) \$35,251. (See figure below left.)



*Cost in loss of personal income due to dropping out, as wage rate based on the number of hours of high school attendance (interpretation suggested by Del Holland, Metro High School, 2002):* Five course hours per year, 180 days per school year, and four years of high school yields 5 x 180 x 4 or 3,600 hours of high school for a typical student. The difference between the HS graduate/GED/HSED and dropout personal income (\$6,504) multiplied by 45 years is \$292,680. Dividing this by 3,600 hours yields about **\$81/hr**. This may be viewed as the value of achieving the high school diploma in hourly wages. Contrast this to \$7-8/hr for a typical high school student job, which may be beneficial or necessary, but can lead to skipping classes for work, falling behind in classes, and eventually dropping out of school. (Comparing dropout income to that of *all working Iowans*, yields about **\$162/hr**.)

*Cost in reduction in state revenue due to dropping out (Iowa, 2014 income and tax data, 2015 state cost data):*

- Number of dropouts *without* high school equivalency: **3,156** [= 4,004 dropouts in 2014 - 848 GED/HSEDs obtained by 16-18 year olds in 2014];
- Reduction in state (income + sales) tax revenues over 45 year lifetime of work due to reduced personal income of dropouts compared with the overall income of all Iowans (potential net increase to state treasury): **\$127.0 million** [= {(\$1,273-\$612) (estimated income taxes/year) x 3,156 (#dropouts without high school equivalency in 2014) x 45 years} + {( \$35,251 - \$22,288) x 30% (taxable part of income) x 6% (sales tax rate) x 3,156 x 45 years}], or about **\$2.8 million** per year;
- “One-time” state cost to educate 3,156 dropouts to high school completion: **\$44.2 million** [= \$6,366 (state cost/student for 2014-15 year) x 3,156 x 2.2 years (additional schooling needed to graduate after dropping out)];

- Potential net increase in state treasury over 45 year working lifetime of Iowa's 2014 dropouts associated with educating them to the status of graduates: \$127.0 million - \$44.2 million = **\$82.8 million**, or about **\$1.8 million** per year.

*Cost of increased welfare payments to dropouts due to their higher unemployment rates:* The three major types of welfare in Iowa and their costs in 2014 were as follows:

- Food assistance (“food stamps”) per person in 2014, \$1,310/year;
- FIP (Family Investment Program) per person in 2014, \$1,572/year;
- Medicaid per person in 2014, \$7,920/year;

for a total welfare payments per person in 2014 of \$10,802/year.

The “U-3” unemployment rates (based on number in labor force) in Iowa in 2014 were 10.73% (dropouts) and 3.84% (*all* graduates). Based on all *potential* workers in Iowa in 2014, the unemployment rates were 7.15% (dropouts) and 3.23% (*all* graduates). The labor force participation rates in Iowa in 2013 were: 66.61% (dropouts) and 84.18% (*all* graduates). (Note: “All graduates” rates were averaged over high school graduates, some college/associate, bachelor’s degree, and graduate/professional.)

Estimated cost of welfare payments due to increased unemployment for 3,156 dropouts in 2014  
 = (3,156)(.0715 - .0323)(\$10,802) or about **\$1.3 million per year**.

Estimated cost of welfare payments due to reduced labor force participation for 3,156 dropouts in 2014  
 = (3,156)[(1 - .6661) - (1 - .8418)](\$10,802) or about **\$6.0 million per year**.

Thus, the total increase in welfare payments for dropouts is estimated to be about **\$7.3 million per year**.

Reduced labor force participation rate—with only about 2 out of 3 dropouts in the labor force—may indicate *longer-term economic problems* for dropouts. On the other hand, these nonparticipants include homemakers (important and productive, but unpaid, workers) and unemployed college students (who will hopefully become productive in the future).

*Cost in increased risk of incarceration of dropouts:* Of the 8,279 incarcerated in Iowa in 2014:

- Education level grades 1-12 (dropouts): 1,533
- High school graduates, college (postsecondary): 2,419
- GED/HSED and others: 4,327 (not used since GED/HSEDs could have been obtained before or after incarceration)

Relative risk of incarceration = odds (dropout among incarcerated)/odds (dropout among general population)  
 = (1,533/2,419)/(.1104/.8896) = **5.1**

This was obtained using the cohort rate for the general population for 2014 (11.04% or .1104). Using the adjusted cohort rate (7.36% or .0736) for the general population, yields an relative risk of incarceration of **8.0**. This is the increased risk of incarceration that is associated with dropping out of school. In other words, dropouts continue to have from about 5 to 8 times the risk of incarceration as graduates. The cost of incarceration for each inmate in Iowa in 2014 was about **\$34,168/year**. This is over 5 times the 2014-15 regular state cost of education per pupil. This cost of incarceration does not include court costs, damage to property, loss in productivity, increased insurance rates, loss of human life, incapacitation, and/or hospital costs for the victim—all of which may be due to criminal acts.

*Cost-Benefit Analysis of Dropout Prevention and At-Risk Programs:* “Modified allowable growth” and “supplemental weighting” state funding support dropout prevention and at-risk programs available to school districts in Iowa. The number of at-risk students that graduated in 2014 was conservatively estimated by the number of students served in the free/reduced school lunch program. The cost per at-risk graduate was calculated by taking the state cost of dropout prevention and at-risk programs for 2014 (\$153,080,726) divided by the estimated number of graduates in that year served in the free/reduced lunch program (10,238), which yielded **\$14,952** per graduate.

The benefit of graduating these at-risk students was calculated by taking the estimated increase in state income and sales taxes of high school graduates compared with dropouts, based on their median incomes, which yielded **\$19,728**, when calculated over a 45 year lifetime of work. Using the increase in taxes of *all* Iowans compared with dropouts yielded an estimated benefit of **\$40,238**. Since these estimates of benefits exceeded the cost, the programs were considered to be cost-effective.

*Cost in reduced payments by state to school districts due to dropouts in district:* School districts experience reductions in state funding for education in direct proportion to the number of dropouts in those districts. For example, a district with 100 dropouts in 2015 would lose (a minimum of) \$6,366 x 100 or \$636,600. Including other than regular education costs (e.g., special education and dropout prevention), this district would lose \$10,247 x 100 or about \$1,024,700. (Specific district costs per pupil may be slightly different from the average state costs. An Excel template may be used to compute these direct *district* costs and the other costs of dropping out presented here. In addition, if district-level data are available (e.g., median income, unemployment rates, welfare costs, etc.), the template may be used to compute analogous district costs.)

[For the full report on the costs of dropping out in Iowa and the Excel template, see the IAAE web site or contact James R. Veale ([Veale.JR@gmail.com](mailto:Veale.JR@gmail.com)).]