

Understanding Before Action: An Explanation of Arizona Public School Dropout Rates

An undefined problem has an infinite number of solutions. -- Robert A. Humphrey

There is a common perception among the public that Arizona has one of the highest school dropout rates in the country. In fact, leading educators, community activists and policymakers consider the high percentage of Arizona dropouts a public policy crisis. In response, many organizations, both public and private, have mobilized to lower the dropout rate.

At the outset, many of these initiatives seek to understand the magnitude of the problem by asking two basic questions. First, what is the Arizona public school dropout rate? Second, how does Arizona's public school dropout rate compare to all other states and/or a national statistic.

On their face, these questions appear simple. But, the issue is not as straightforward as it seems. There are actually several different Arizona public school dropout rates with distinct interpretations. The purpose of this paper is to explain the Arizona public school dropout rates and discuss why these statistics cannot be used to compare the Arizona public school system to all other states and/or a national statistic.

This paper is limited to the statistics most commonly reported to the public, namely through the Arizona media. Due to increased national attention on the dropout issue,

universities and government agencies are introducing additional dropout statistics to improve the measurement procedures and cross-state comparisons.¹ These additional dropout statistics are outside the scope of this paper.



The basics of dropout rate statistics

Before discussing particular dropout rate statistics in detail, it is helpful to understand the basic characteristics of dropout rate statistics.

A dropout rate *statistic* is the final number reported to the public, usually expressed as a percentage. The dropout rate *calculation* is the process by which the dropout rate statistic is derived. The *time span* is the time period covered in the dropout rate calculation.

Students are classified as dropouts according to a set of rules, or *definitions*. These definitions are based on deductive reasoning and can be lengthy and confusing. Dropouts are defined by what they are not doing and students are categorized as “dropouts” only after they fail to fit into other categories. For example, a simple dropout definition is a student who has not completed high school and is currently not enrolled in a high school program.

The *data source* pertains to where and how the data is collected to perform the dropout rate

calculation. The data source is the most direct contributor to the reliability of the dropout rate statistic.

Finally, the dropout rate statistics discussed in this paper provide limited to no information about why students do not complete high school. The statistics are designed to determine the number of dropouts and not the causal factors.



What are the Arizona public school dropout rates?

Any appropriate Arizona public school dropout rate statistic must include only students who have been enrolled in Arizona public schools. This requirement may appear elementary, however, as will be discussed later in the paper, the most common statistics used to compare Arizona to other states include people who have not been students in the Arizona public school system. Therefore, these statistics are not valid for evaluating the state’s public schools.

This paper analyzes four Arizona public school dropout rates. The first two, the Annual Dropout Rate and the Four-year Dropout Rate are reported annually. The third, the High School Attrition Rate, is not currently reported and we are introducing it in order to propose another informative statistic. The fourth, the Estimated Attrition Rate, was reported in 2002 and received considerable public attention but there are no current plans to continue reporting this statistic.



Annual Dropout Rate

The Annual Dropout Rate represents the percentage of Arizona public school students in grades 9-12 who drop out in a single school year.² The statistic is calculated and reported by the Arizona Department of Education (ADE) in its annual Dropout Rate Study.

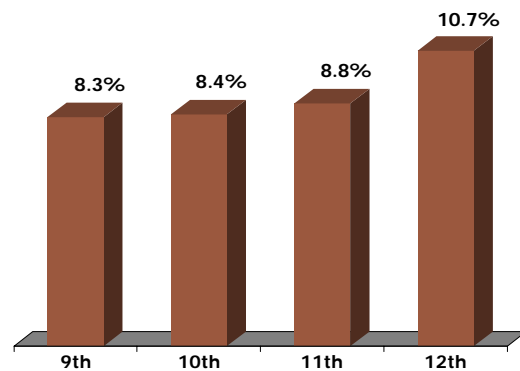
The Annual Dropout Rate is a “snapshot” of dropout activity over one school year based on a calendar that begins the first day of summer recess and ends on the last day of school the following spring. For example, the calendar for

the 2001-2002 school year begins on the first day of summer recess in 2001 and ends on the last day of school in spring 2002.

Dropouts are defined as students who were “enrolled in an Arizona public school at any time during the school year but were not enrolled at the end of the school year and did not transfer, graduate or die.”³ Specifically, the dropout definition includes students who withdrew from school for any of the following reasons and did not re-enter during the same school year:

- Chronic illness
- Expulsion
- Attending a school that does not meet standard graduation requirements (e.g. GED preparatory classes, GED recipient, vocational schools)
- Discontinuing high school education (dropout)
- Unexcused absence for more than 10 consecutive days (status unknown)⁴

The Annual Dropout Rate is calculated by dividing the total number of students who withdrew for any of the previously listed reasons and did not return to school during the same school year by the total number of students enrolled during the school year.



Source: Dropout Rate Study, 2001-2002

The dropout definition in the Annual Dropout Rate calculation includes both dropout and status unknown students. It is important to understand the substantial differences between these two types of students. Dropout students left school and the school has verification that the student does not intend to complete high school graduation requirements. Status unknown students left school and their location is unknown to the school or school district.

The results and interpretation of the dropout rate statistics change dramatically depending on whether or not the calculation excludes or includes status unknown students. The policy implications of both approaches are discussed in detail later in the paper.



Four-year Dropout Rate

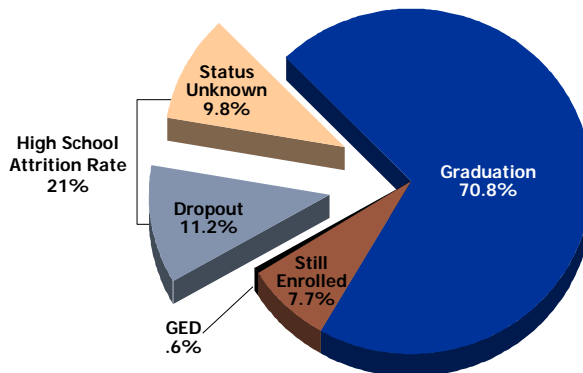
The Four-year Dropout Rate represents the percentage of students who left within the first four years of high school, did not return, graduate, transfer, receive a General Equivalency Diploma (GED) or die and *the school has confirmation that the student withdrew with the intention of not completing high school graduation requirements*. The Four-year Dropout Rate is reported by the ADE in its annual Graduation Rate Study.⁵

The Four-year Dropout Rate covers a four-year time span. The calculation begins when a group, or graduating class, of students begins school as ninth graders. The calculation ends when the graduating class finishes their senior year. Traditionally, this time period is four years.

The statistic includes only members of a graduating class who entered an Arizona public school during the time span, regardless of where they originally enrolled. For example, a student may have entered the graduating Class of 2002 by enrolling in ninth grade in 1998 in Texas and moving to Arizona in 2001 as a junior. In this case, the student is part of the Class of 2002 and is eligible for inclusion in the Four-year Dropout Rate.

At the end of the fourth year, Arizona public

schools attribute one of the following “final” and discrete outcomes to every 12th grade student in the class: graduated, still enrolled, dropped out, status unknown or GED recipient.⁶



Four-Year Rates, Class of 2001

Source: *Graduation Rate Study, Class of 2001*

The Four-year Dropout Rate is calculated by dividing the total number of students coded as dropouts by the total class membership. Status unknown students are not included in the Four-year Dropout Rate. Status unknown students are accounted for in the Status Unknown Rate which is calculated by dividing the total number of students coded as status unknown by the total class membership.⁷



High School Attrition Rate

The High School Attrition Rate represents the percentage of a graduating class that was expected to graduate but did not receive an Arizona high school diploma and *there is no indication* that the student has transferred, enrolled for an additional year of study, received a GED or died. Presently, this statistic is not reported but can be calculated easily by adding the Four-year Dropout Rate and the Status Unknown Rates published in the Graduation Rate Study.

The time span and definition of a graduating class used in calculating the High School Attrition Rate are identical to the calculation used in the Four-year Dropout Rate. The treatment of status unknown students, however, is different in the High School Attrition Rate.

The High School Attrition Rate is calculated by adding the Status Unknown Rate to the Four-year Dropout Rate.⁸ The combination of these two categories of students is more accurately called an attrition rate rather than a dropout rate because there is no indication that the status unknown students have discontinued their high school education. In both cases, however, the student did not graduate with their class from the school where they were enrolled.



Estimated Attrition Rate

In 2002, the Arizona Minority Education Policy Analysis Center (AMEPAC) released an Estimated Attrition Rate for Arizona high school students. The Estimated Attrition Rate was released as a state-level statistic only, no school district or school results are available. The Estimated Attrition Rate received considerable media coverage, however AMEPAC does not plan to release a follow-up study.

The Estimated Attrition Rate was calculated by comparing the number of graduates in a given year to the size of the 9th grade class four years prior after adjusting for student population growth.⁹ The Estimated Attrition Rate was based on a four-year time span and was intended to reflect the final outcome of a graduating class of students. The Estimated Attrition Rate, unlike the other four-year statistics, did not rely on individual student data in the calculation. This method decreased the amount of effort required to collect data.



Why are there four different Arizona public school dropout rates?

There is no single “correct” statistic among the four Arizona public school dropout rates. The rates are all useful for different purposes. The statistics are distinguished by three characteristics: time span, the treatment of status unknown students and the ability to compare different levels of the public school system. These characteristics dictate the appropriate use of each dropout rate statistic.

Time span

The time span used in the calculation of the Arizona public school dropout rates is either one-year or four-years and the two different time spans create complementary interpretations of the statistics. The Annual Dropout Rate is a “snapshot” that captures annual fluctuations in the dropout rate in grades 9-12. The results are useful to guide interventions to decrease the dropout rate while a graduating class of students is still in the process of completing high school. The one-year time span does limit the results to a single school year and does not capture student activity across school years. For example, a student may drop out in the 2002 school year and would be counted as a dropout for that school year. If the student returns in the following school year, the student is no longer a dropout. However, the student will remain a dropout in the statistics for the 2002 school year.

The cumulative impact of dropping out over multiple years is best captured in the four-year statistics. The Four-year Dropout Rate, High School Attrition Rate and the Estimated Attrition Rate report on 12th grade students only and reflect the final academic outcome of a graduating class. The primary limitation of the four-year time span is the inability to account for annual fluctuations between the beginning and end dates of the time span. For example, a student may leave school during their sophomore year, return to school the following year, make up missed coursework and graduate with their class. This student would be counted as a graduate with no indication of their winding path to graduation.

Treatment of status unknown students

There are two approaches, exclusion or inclusion, to treating status unknown students in the dropout rate calculations. There is currently no consensus or research to determine which approach is most accurate and there are advantages and limitations to both approaches.

The Four-year Dropout Rate definition assumes that status unknown students have not dropped out. Therefore, they are *not* combined with

dropout students in the calculation. The positive impact of this approach is to limit the statistic to only confirmed dropouts. In addition, this approach decreases the amount of effort that is required by schools to track individual students. Adversely, this approach provides no incentive to schools to track students and verify their status. Moreover, because it is reasonable to assume that some percentage of the students whose status is unknown did dropout, it understates the actual dropout rate.

The High School Attrition Rate definition assumes that status unknown students have discontinued their education and they are combined with dropout students in the calculation. This approach provides an incentive for schools to account for status unknown students and improve the comprehensiveness of the data. Adversely, schools would be required to divert time and resources to accounting for all students. In addition, this approach may overestimate the actual dropout rate because there is no evidence that the status unknown students have actually dropped out. Yet, policy decisions would be made on the premise that the students have discontinued their education.

Unfortunately, there is no research in support of either approach and the policy implications of this void are substantial. For example, the decision to exclude or include status unknown students in the four-year rates shifts the dropout rate statistics for the Class of 2001 from 11.2% to 21%, respectively.¹⁰ The Arizona Center for Public Policy will study this issue by using the academic status of students at the time they left the Arizona public school system to make more informed policy decisions regarding the treatment of status unknown students.

Ability to compare different levels of the public school system

The Annual Dropout Rate, Four-year Dropout Rate and the High School Attrition Rate can be used to evaluate and make meaningful comparisons across and between many levels of the public education system *within* the State of Arizona. The state, counties, school districts and

schools can all be compared using these statistics and the comparisons are valid across years. The Estimated Attrition Rate provides only state level results, precluding other intra-state comparisons.¹¹



What are the limitations to the Arizona public school dropout rates?

Data reliability is the primary limitation of the Arizona public school dropout rates. Arizona public schools and school districts provide the data to calculate the statistics and this source impacts the accuracy, consistency and integrity of the data.

Data accuracy is dependent on the precision of school records. Schools are required to track individual students as they enter and exit during the school year and tracking students is a challenge. Students are a mobile population and do not always maintain contact with the schools. The challenge of tracking individual students is compounded over the four-year time span of the Four-year Dropout and the High School Attrition Rate calculations. The Estimated Attrition Rate, on the other hand, is not dependent on the tracking of individual students which lessens the administrative burden and possibility for error.

Data consistency depends on whether or not all schools across the state apply the dropout definitions in the same way and whether the data is reported in the same manner across school years. The ADE is responsible for maintaining data consistency across all schools and school years. To that end, the ADE holds statewide workshops to educate school districts on how to complete the dropout reports consistently. The ADE, however, does not verify that all school districts have reported consistently. In addition, the ADE has changed how the data have been reported and, in some cases, these changes have disrupted the consistency of the data over time. Data reported by schools and school districts are also susceptible to a self-reporting bias that affects the integrity of the data. The self-reporting bias stems from the fact that schools

have an interest in reporting lower dropout rates. Therefore, schools have an incentive to put students in any category other than as a dropout, whenever possible.¹² Instances of inaccurate school data have been reported in other states.¹³ However, there is no research on the existence or extent of self-reporting bias in data provided by Arizona public schools.



Can the Arizona public school dropout rates be used to compare Arizona to other states and/or a national statistic?

The Arizona public school dropout rates cannot be used to compare all states or to compare Arizona to a single national statistic. The Arizona public school dropout rates are Arizona-specific meaning that Arizona policymakers and the ADE determine the calculation methods. Like Arizona, many states calculate state-specific dropout rates for use in internal public policy. The Arizona dropout rate statistics are not comparable to all other state-specific dropout rate statistics because all states do not use uniform dropout definitions or calculations. Where the Arizona public school dropout calculation matches another state's calculation, a comparison is valid. This match, however, is susceptible to change at any time. Every state has the authority to change their own calculation and these changes could disrupt the comparisons.¹⁴

The National Center for Education Statistics (NCES) has recommended a national annual dropout rate calculation, however, not all state dropout rate calculations, including Arizona's, conform to the recommendation. The Arizona Annual Dropout Rate is not in conformance with the national recommendation because it is calculated on a calendar year that runs from June to June rather than the NCES recommended October to October cycle. Another common discrepancy between states is the treatment of GED students. Some states, counter to the NCES recommendations, do not report students as dropouts if they withdrew from a public high school to pursue a GED.¹⁵ In Arizona, students who withdraw from public schools and enroll in GED courses are regarded as dropouts and

students who receive GEDs are not considered graduates.



There are reports that rank Arizona compared to other states, what do they mean?

Policy makers, business leaders, community groups and parents are interested in how Arizona compares to other states and the nation. In response, organizations have used national databases to develop comparable, state-level dropout statistics. These statistics, however, are *not* an estimate of the Arizona public school dropout rate and should *not* be used to evaluate the effectiveness of Arizona public schools.

The Status Dropout Rate and the Event Dropout Rate are the two most common statistics used to develop nationally-comparable, state-level statistics. The Status Dropout Rate represents the percentage “of young people ages 16 through 24 who are out of school and who have not earned a high school credential” *regardless of where or when they last attended school*. The Event Dropout Rate represents the percentage of youth ages 15 through 24 who dropped out of grades 10-12 during a one year period based on a calendar that runs from October to October. Both statistics are calculated and reported by the NCES.¹⁶

The data source for the Status Dropout Rate and the Event Dropout Rate is a monthly survey called the Current Population Survey (CPS). The CPS is based on a national sample of approximately 50,000 households in the United States. The CPS is conducted for the Bureau of Labor Statistics and is the primary source of information on labor force characteristics of the U.S. population.¹⁷

The people in Arizona's Status and Event Dropout Rates include any person within the defined age group living in Arizona at the time of the survey, regardless of whether or not they attended an Arizona public school. Given Arizona's high growth rate, the participant may be a new resident to the state and may have dropped out of high school in another state.

Conversely, the participant may have graduated from high school in another state and would be credited to Arizona as such.

Not all of the people in Arizona’s statistics were enrolled in Arizona public schools. Therefore, it is invalid to attribute these results exclusively to the effectiveness of Arizona public schools. The Status and Event Dropout Rates are useful to gauge the status of Arizona’s labor pool. In addition, the Status and Event Dropout Rate calculations are not an appropriate Arizona public school dropout rate statistic because they include schools that are not part of the Arizona public school system. The calculations include schools that award GED certificates. Arizona public schools do not award GED certificates. The calculations also include private schools.



Conclusion

This paper analyzed four Arizona public school dropout rates, each with different advantages,

limitations and interpretations. Currently, none of the Arizona public school dropout rates are comparable to other states, except in cases where the comparison state uses the same calculation. Nor are they comparable to the nation as a whole. To complicate matters further, the most common state-level comparisons are based on statistics that are indicators of Arizona’s labor pool and not the effectiveness of the state’s public schools. This confusion may frustrate anyone that wants to evaluate the effectiveness of Arizona public school dropout prevention efforts on a national scale. The findings of this paper illustrate the need for ongoing research to develop and implement state statistics that allow for such comparisons.



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| Summary of Dropout Statistics | | | |
|-------------------------------|---|---|---|
| Statistic | Description | Comparability | Comments |
| Annual Dropout Rate | The percentage of Arizona public school students in grades 9-12 who drop out in a single school year | Levels of the public school system within Arizona, not comparable to all other states or to a single national statistic | Annual “snapshot” of dropout activity for all grades 9-12 |
| Four-Year Dropout Rate | The percentage of students who left within the first four years of high school, did not return, graduate, transfer, receive a GED or die and the school has confirmation that the student withdrew with the intention of not completing high school graduation requirements | Levels of the public school system within Arizona, not comparable to all other states or to a single national statistic | The final academic outcome for a graduating class, includes only confirmed dropouts |
| High school Attrition Rate | The percentage of a graduating class who was expected to graduate but did not receive an Arizona high school diploma and there is no indication that the student has transferred, enrolled for an additional year of study, received a GED or died | Levels of the public school system within Arizona, not comparable to all other states or to a single national statistic | The final academic outcome for a graduating class, includes both confirmed dropouts and status unknown students |
| Estimated Attrition Rate | Population estimate based on the number of graduates in a given year and the size of the 9 th grade class four years prior after adjusting for student population growth | State level statistics only | No plans to continue reporting this statistic |
| Status Dropout Rate | Percentage of young people ages 16-24 who are out of school and who have not earned a high school credential | Inter-state and national comparisons, usually based on multi-year averages | Measures status of Arizona’s labor pool, includes people who may not have attended an Arizona public school |
| Event Dropout Rate | Percentage of young people ages 15-24 who dropped out of grades 10-12 during a one year period | Inter-state and national comparisons, usually based on multi-year averages | Measures status of Arizona’s labor pool, includes people who may not have attended an Arizona public school |

Notes and References

- ¹ Swanson, Christopher B. & Duncan Chaplin. (2003). *Counting High School Graduates When Graduates Count: Measuring Graduation Rates Under the High Stakes of NCLB*. Urban Institute: Washington, DC.
- ² The ADE also includes grades 7 and 8 in the Dropout Rate Study. These grade levels are not included in the calculation for high schools.
- ³ Arizona Department of Education. (2002). *Dropout Rate Study: 2001-2002 Annual dropout rates*.
- ⁴ Arizona Department of Education. (2002). *Year End Enrollment Training Manual, Unpublished Manual*.
- ⁵ The ADE reports a four-year rate and then revises the rate the following year to reflect the final outcome for students that enrolled for a fifth year of study. The same outcomes are applied to students at the end of the fifth year to calculate the revised statistics.
- ⁶ Arizona Department of Education. (2002). *Graduation Rate Study Training Guide*. Unpublished manual.
- ⁷ Arizona Department of Education. (2002). *Graduation Rate Study: Four year graduation rates for the cohort class of 2001*.
- ⁸ The High School Attrition Rate is identical to the Dropout/Status Unknown Rate reported in the Graduation Rate Study for the Class of 2000 (available online at www.ade.az.gov). Beginning with the Class of 2001, the ADE separated the dropout/status unknown rate into two separate rates, the Four-year Dropout Rate and the Status Unknown Rate.
- ⁹ Arizona Minority Education Policy Analysis Center. (2002). *Stemming the Tide of Dropouts: An action agenda for Arizona*. Phoenix, AZ: Arizona Commission for Postsecondary Education.
- ¹⁰ Arizona Department of Education. (2002). *Graduation Rate Study: Four year graduation rates for the cohort class of 2001*.
- ¹¹ Private schools are not included in the Arizona public school dropout rate calculations and can not be compared to public schools unless the private school(s) has adopted the exact same calculation.
- ¹² Greene, Jay P. (2002). *High School Graduation Rates in the United States*. Manhattan Institute for Policy Research: New York, NY.
- ¹³ Schemo, Diana J. (2003, July 11). *Questions on Data Cloud Luster of Houston Schools*. The New York Times.
- ¹⁴ The Estimated Attrition Rate calculation could be applied to all states to develop a comparable dropout rate. The State of Arizona, however, would have to conduct the calculation for every state or rely on an outside organization. In addition, the Estimated Attrition Rate calculation would have to be applied at the county, school district and school levels to yield statistics for these entities.
- ¹⁵ National Center for Education Statistics. (2000). *A Recommended Approach to Providing High School Dropout and Completion Rates at the State Level (NCES 2000-305)*. Washington, DC: U.S. Government Printing Office.
- ¹⁶ National Center for Education Statistics. (2001). *Dropout Rates in the United States: 2000 (NCES 2002-114)*. Washington, DC: U.S. Government Printing Office.
- ¹⁷ United States Bureau of Labor Statistics & United States Census Bureau (2002). *Current Population Survey*. Retrieved July 7, 2002 from <http://www.bls.census.gov/cps>.