

Definition of Tier I, Tier II and Tier III Schools

Data Sources

The Colorado State Assessment Program (CSAP) assesses students every year from grade 3 through grade 10 in the content areas of reading and mathematics. A Spanish language version of the CSAP reading assessment, called Lectura, is administered to grade 3 and 4 non-native speakers of English enrolled in bilingual education programs. An alternate assessment, CSAPA, is administered in the content areas of reading and math to students with qualifying cognitive disabilities. Student-level data for each of these assessments were collected for the years 2007, 2008 and 2009. Data screening included removing student records with test invalidation codes (actual test scores deemed invalid) or blank scale scores (no test score record).

Test records from each year are aggregated across the different assessments as follows: CSAP reading, Lectura and CSAPA reading are combined to give a composite reading proficiency rate for each grade within a school while CSAP math and CSAPA math are combined to give an overall math proficiency rate.

For accountability purposes in Colorado, schools are designated as elementary, middle and high (EMH) according to the grade range of enrolled students. A school can have different designations for different grade ranges; in general the elementary designation is given to grades K–5 or K–6, middle schools are 6–8 or 7–8, and high schools are 9–12. Depending upon the lowest and highest grades of the school, specific grade ranges are designated as elementary, middle or high. For example, a K–8 school will have a record as an elementary for the grade K–5 students and a middle school record for the 6–8 students. A K–12 school has 3 records—elementary, middle and high—with each level containing the appropriate subset of students. To align with federal regulations, middle and high schools have been combined under the heading of secondary schools in the current analysis.

Graduation rate data were collected for high schools for the years 2007, 2008 and 2009. Colorado calculates a 4-year graduation rate by tracking student cohorts.

Preliminary School Eligibility Criteria

To be considered in the analysis, an educational entity must be classified as a school currently operational with student enrollment data collected during the October 1, 2010 pupil count. Schools must also have student data for at least one of the following CSAP administrations: 2007, 2008 and/or 2009. The CSAP is administered in the spring of each school year, and is consequently referred to using only the year of the spring term. In other words, the 2008–2009 school year is associated with the 2009 CSAP data, the 2007–2008 school year with 2008 CSAP, etc.

School Criteria

After determining the number of schools in the “all students” group, two additional criteria are used to ensure valid data is used to identify schools in Tier I or Tier II. The first of these criteria is a minimum n count. A school is required to have 20 or more students receiving valid student growth percentiles

between 2007 and 2009 in each content area. This minimum n requirement is fundamental to ensuring data stability. MGPs based on a small number of students tend to fluctuate a great deal across schools and years while an increased number of records yields more stable estimates that are less likely to exhibit cohort-driven volatility. For these reasons, all schools with less than 20 students over three years are removed from Tier I and Tier II consideration. Following revised federal guidance, schools with small n-counts otherwise meeting the Tier I or II requirements are flagged as Tier III. A federal waiver has been submitted for this minimum n requirement and the complete list of waived schools will be made publicly available on the CDE website.

The second exclusion scenario arises from Colorado's identification of a subset of schools called Alternative Education Campuses (AECs), which serve special needs or high risk student populations. The majority of AECs serve high school students who have failed in and been failed by traditional institutions. By receiving designation as an AEC, a school will be subject to an enhanced school performance evaluation in addition to the school performance evaluation used for all schools for state accountability purposes. A small number of schools qualify as AECs because more than 95% of their students are on IEPs. The rest qualify because they are designed to address the needs of a high risk student population and serve at least 95% high risk students. In Colorado, students are considered high risk if they: are involved with state correctional services, dropped out, were expelled from school, have a documented history of personal or parental drug use, have a documented history of personal or familial gang membership, have a parent or guardian in prison or on parole, have a documented history of domestic violence, have a history of repeated school suspension or are a parent or pregnant woman under 20 years old.

The January 20th, 2010 federal guidance makes clear that schools designed to re-engage students who have dropped out of the system or cater to populations otherwise unable to follow a traditional 4-year path to graduation, may be exempted from identification as among the lowest performing. Given these constraints, some, but not all, of Colorado's AECs qualify for exemption. To determine whether an AEC should be exempted, school level information was collected on the following: the school's mission, the type of students being served (including counts of the number of students falling into each of the high-risk categories described above), if the school focuses on dropout retrieval, if the schools is designed to be temporary, whether the school grants diplomas, and other information which would preclude a school from expecting students to graduate in four years.

For the purposes of identifying the lowest performing secondary schools in Colorado, AECs were only exempted if they met one or more of the following criteria:

- School purpose is dropout re-engagement and 100% of enrolled students are identified as dropouts
- School is temporary and designed to transition students back to their home school
- School is not a diploma-granting institution

Of the 56 schools designated as AECs for 2009–2010, 1 is an exclusive dropout re-engagement program, 10 are temporary/transitional programs and 12 do not grant diplomas. These schools are not eligible for Tier I and II, but have been flagged as Tier III if they meet the additional tier criteria. The remaining 39 schools do not qualify for exemption and have been included in all analyses (unless removed for small n count). The list of AECs, with the relevant school and student information will be available on the CDE website.

Calculating Grade Level Performance Metrics

The measure of a school's performance is composed of two separate metrics: academic achievement and academic growth. These metrics summarize the performance of individuals within a school on Colorado's summative assessments. Student results on the CSAP and CSAPA are reported in terms of the proportion of examinees reaching criterion-based achievement levels. For the CSAP, the achievement levels, in ascending order, are Unsatisfactory, Partially Proficient, Proficient and Advanced. Students scoring in either the Proficient or Advanced categories are fully demonstrating grade-appropriate academic knowledge and skills. On the CSAPA, given to students with qualifying disabilities, the performance levels are: Inconclusive, Exploring, Emerging, Developing, and Novice. Scoring in the top two categories of Developing and Novice roughly parallels the performance strata on CSAP and is considered grade-appropriate for these students.

In order to aggregate student data by grade within a school, the percent of students demonstrating grade-appropriate proficiency is calculated for each content area combining the 2007, 2008 and 2009 data as follows. First, a sum is taken of the number of students scoring Proficient or Advanced on the CSAP and Lectura and the number of students scoring Developing or Novice on the CSAPA; this sum is then divided by the total number of students with actual scores taking these tests. In this way a final multi-year percent proficient or above (%PrA) value is calculated for each grade, school and content area.

Colorado has developed its own measure of student academic progress, the Colorado Growth Model, which has been approved for use in the AYP growth pilot. This growth model assigns each individual a student growth percentile (SGP) based upon how her performance compares to that of her academic peers. SGPs are reported on a scale of 1–99, with 50 being typical growth representing a year's worth of academic progress in a year's time. An SGP above 65 is considered high growth—meaning a student is making more than a year's worth of progress in a year's time. An SGP below 35 represents low growth—a student is failing to make a year's worth of progress in a year's time.

In order to calculate a growth percentile, a student must follow a traditional grade progression and have test scores for at least the two most recent years. Additional prior years of test scores yield better growth estimates, and are used whenever available. Currently in Colorado, only the standard CSAP assessments are used to calculate student growth; students taking Lectura and CSAPA are not included in growth calculations and subsequent growth-based analyses.

The growth scores are aggregated at the grade level within each school by taking the median of all SGPs for students in a given grade across the years 2007, 2008 and 2009, separately for each content area. For example, all the grade four SGPs for 2007, 2008 and 2009 are pooled, and a single median taken to represent the overall performance of fourth graders in that school.

No weighting is used in these calculations other than the de facto weighting present on the basis of the number of student records in each year.

Standardized Performance Index

Once the grade level %PrA and median growth percentile (MGP) values have been calculated for each school, these values are represented as values on the normal scale as follows. Transforming the

distribution of each grade's school-level MGPs onto the standard normal curve (mean of 0 and a standard deviation of 1) yields z-score values for each grade and content area by school. A z-score is an indicator of how much a particular value deviates from the average. Z-scores of plus or minus one indicate that a case is either 1 standard deviation above or one standard deviation below the mean. Separate standardization by grade level is performed to account for the differences found across grades (with greatest discrepancies for %PrA between lower and higher grades).

In addition to ease of interpretation, another advantage to using z-scores is that multiple metrics, initially calculated on different scales, can each be standardized and then arithmetically combined. Thus, the grade level z-scores for reading and math are averaged together to give a single z-score for achievement, and a second z-score for growth for each grade in a school. Next, the z-scores are averaged across grades based upon a school's EMH designations to yield one achievement and one growth z-score for each grade span (elementary, middle or high) within a school. This means that for a K-8 school, the %PrA z-scores for grades 3, 4, and 5 are averaged into a single elementary z-score for the school and the z-scores for grades 6, 7 and 8 are averaged to give the z-score for the middle school-level. This method of combining grades by EMH gives equal weight to each grade, regardless of differences in the number of students per grade.

To arrive at a single rank for each school and grade span, the z-scores for MGP and %PrA are averaged together. For nearly all accountability measures in use or development, greater weight is given to growth metrics than to status measures. In the current analyses, growth is weighted twice as much as status; meaning that the standardized growth score contributes 67% of the final z-score while status contributes only 33%. This weighted average z-score becomes the final representation of a school's overall performance during the past three years: its Standardized Performance Index score. Although the method described above has been used to identify the lowest-performing schools for the 2009 School Improvement Grant allocations, once the state's School Performance Framework has been completed, this new metric will be used to rank schools and identify the lowest-performing for state accountability.

Low-Graduation Rate Eligibility

An additional indicator of poor performance is calculated for high schools with low graduation rates. Colorado uses a four-year cohort model to calculate graduation rate. For each graduating class, the number of students receiving a regular diploma in the past year is divided by the total number of students finishing 8th grade four years earlier plus the number of students who transferred in minus the number of verified student transfers out. A flag is applied in the dataset to schools with a graduation rates less than 60% for each of the previous three years (2009, 2008 and 2007).

Identifying Tier I, Tier II, and Tier III Schools

Tier I Schools

To be included in the "all students" group for Tier I, a school must receive Title I funds and be on school improvement, corrective action, or restructuring status for the 2009–2010 school year. The total number of schools included in this "all students" group becomes the base for calculating the 5% of

schools to be identified as persistently lowest-achieving. The 5% is calculated separately by EMH level and the values rounded up to the nearest whole number.

Making the number of eligible schools proportional to the total number of schools within a given grade span ensures adequate coverage of schools serving students of all ages. Without this precaution, middle schools tend to be under-represented. Elementary schools receive Title I funds twice as often middle schools and more than three times as often as high schools, which results in a disproportionate number of elementary schools eligible for Tier I funding. Although Tier II is intended to address this imbalance, the majority of eligible recipients in Colorado are high schools. The lowest performing schools in Tier II tend to be AECs (primarily serving grades 9–12) and high schools with low graduation rates, rather than middle schools. As a result, middle schools are less likely to be represented among the persistently lowest-performing schools eligible for SIG funding. For these reasons, Colorado feels that stratifying by EMH level will ensure a more equitable distribution of funds across grades and schools.

The Tier I eligible schools are then ranked by standardized performance index. Following this ranking procedure, the schools not meeting the minimum n count requirement and the exempt AECs are skipped. Then, the lowest ranked 5% of Tier I eligible schools by performance index within a given EMH level are identified. Additionally high schools on school improvement, corrective action or restructuring with a low graduation rate flag are identified. Combining these two sets of schools yields the final list of persistently lowest-performing schools eligible for Tier I 1003(g) funds.

The flexibility given to states in identifying additional schools was not utilized for Tier I.

Tier II Schools

The Tier II schools are identified in a similar way. To be included in the “all students” group for Tier II, a middle or high school must be eligible for but not receiving Title I funds for 2009–2010. Title I eligibility requires that a school be part of a district that accepts Title I funds and have a school poverty rate (as defined by percent of students eligible for free or reduced-price lunch) that is a) greater than the district’s average free or reduced-price lunch percent overall, b) greater than the district’s average free or reduced-price lunch percent for schools in that grade span, or c) greater than or equal to 35%. The total number of Tier II eligible schools is then used as the base to calculate the 5% of middle schools and 5% of high schools to be identified as persistently lowest-performing.

Once again, schools are ranked by scores on the standardized performance index and flagged for low graduation rates. Schools not meeting the minimum n and exempt AECs are skipped from Tier II consideration and moved to Tier III. From the remaining pool of Tier II eligible schools, the lowest performing 5% (broken out by grade level) are identified by performance index score. High schools with flags for low graduation rate are also identified for Tier II 1003(g) funds. There is no cap on the number of schools eligible under this low graduation rate criterion, but the majority tends to be non-exempt AECs that are also flagged using the standardized performance index.

Utilizing the increased state flexibility detailed in the January 20th, 2010 federal guidance, middle and high schools eligible for Title I funding, whether receiving funding in 2009–2010 or not, who have not made AYP for the two most recent years and who have a performance index score lower than the highest performing school identified in the above 5%, are also flagged for Tier II. The final list of Tier II schools includes all schools flagged under the low performance, low graduation rate, or expanded low performance criteria.

Tier III Schools

In addition to school schools excluded due to n count or AEC exemption, all schools on Title I school improvement, corrective action, or restructuring in 2009–2010 that are not identified for Tier I or Tier II are identified as Tier III. Lists of all these schools will be posted to the following website:

<http://www.schoolview.org/statefiscalstabilizationfund.asp> pending approval by the US Department of Education.