



**COLORADO**  
Department of Education

## **ESSA Accountability Work Group Decision Point: Minimum N**

The ESSA Accountability Work Group is made up of a diverse group of stakeholder perspectives, coming together to think through the decision points for Colorado's ESSA state plan, specific to school accountability. This presentation will share information around the decision point pertaining to the minimum number of students, referred to as the minimum n size, to be used in accountability calculations. This presentation will also discuss the impact of minimum n on the disaggregation of racial and ethnic groups, as well as the subsequent decision point pertaining to the disaggregated calculations.

# Decision Point

## ■ What is the minimum number of students that should be used for accountability?

*Instructions: Each SEA must describe its accountability, support, and improvement system consistent with §§ 200.12-200.24, §299.17 and with section 1111(c) and (d) of the ESEA. Each SEA may include any documentation (e.g., technical reports or supporting evidence) that demonstrates compliance with applicable statutory and regulatory requirements.*

**C. Minimum Number of Students.** Describe the minimum number of students that the State determines are necessary to be included in each of the subgroups of students consistent with §200.17(a)(3).

Describe the following information with respect to the State's selected minimum number of students:

- i. How the State's minimum number of students meets the requirements in §200.17(a)(1);
- ii. How other components of the statewide accountability system, such as the State's uniform procedure for averaging data under §200.20(a), interact with the minimum number of students to affect the statistical reliability and soundness of accountability data and to ensure the maximum inclusion of all students and each student subgroup under §200.16(a)(2);
- iii. A description of the strategies the State uses to protect the privacy of individual students for each purpose for which disaggregated data is required, including reporting under section 1111(h) of the ESEA and the statewide accountability system under section 1111(c) of the ESEA;
- iv. Information regarding the number and percentage of all students and students in each subgroup described in §200.16(a)(2) for whose results schools would not be held accountable in the State accountability system for annual meaningful differentiation under §200.18; and
- v. If applicable, a justification, including data on the number and percentage of schools that would not be held accountable for the results of students in each subgroup under §200.16(a)(2) in the accountability system, that explains how a minimum number of students exceeding 30 promotes sound, reliable accountability determinations.

The specific decision point is around the minimum number of students (overall and for each disaggregated group) that Colorado will include for the purposes of calculating the school performance frameworks.

The language in the box is the language that the U.S. Department of Education has drafted for the state plan application.

# Requirements

- **Federal Statute (ESSA)**

- Yields statistically reliable information
- Same number for all students and for each disaggregated group
- Does not reveal any personally identifiable information (PII)
- Consistent with FERPA requirements

- **Proposed Rulemaking**

- Maximum inclusion of all students and disaggregated groups
- May not exceed 30 students, unless strong justification is provided
- Same number for each indicator
- Number/percentage of students and disaggregated groups of students excluded from school-level accountability determinations

Additional information – N size / minimum n materials from 9/21:  
[www.cde.state.co.us/accountability/accountabilityworkgroup](http://www.cde.state.co.us/accountability/accountabilityworkgroup)



The requirement outlined in the Every Student Succeeds Act exists to ensure that a large enough number of students are included in each of the calculations used for accountability purposes, in order to protect personally identifiable information. Setting too low of a minimum n could allow the performance of individual students to be identified based on the results presented in the school performance frameworks.

In addition, the requirement also exists to ensure that the accountability calculations result in information that is reliable. Federal statute also requires the minimum n size to be the same for all students and for each disaggregated group.

In May of 2016, the U.S. Department of Education also provided a notice of proposed rulemaking, which included potential additional requirements regarding the minimum number of students. Although it is unclear which, if any, of the proposed rules will be integrated into regulations, the proposed rulemaking should be considered in the context of this decision point. Specifically, the proposed rulemaking requires that the minimum number selected is the same for each indicator used in the state accountability system. The proposed rulemaking also requires that the minimum n size does not exceed 30 students, unless strong justification is provided in the state plan application.

For additional information, and to read the full statutory language from the Every Student Succeeds Act and the relevant section of the proposed rulemaking, you can access the minimum n materials using the link on the slide.

## Starting Point: What We've Heard

- Maintain current minimum n size
- Consider impact on small rural districts
- Consider impact of dividing minority group into each major race/ethnicity
- Consider impact on district/school ratings



The Accountability Work Group started off by reviewing the input heard from stakeholder groups that have shared their thoughts on this topic, in order to inform the possible options being shared.

Some stakeholders expressed a preference in maintaining the current minimum n sizes used. Specifically, a minimum n of 16 is currently used for achievement and post-secondary and workforce readiness measures, while a minimum n of 20 is currently used of growth measures.

Stakeholders also expressed the need to reflect on specific considerations. In particular, the Accountability Work Group was asked to take into consideration the impact of minimum n sizes on small rural districts, the impact of using a single minority group versus disaggregating by each major racial and ethnic group, and the impact of minimum n sizes on the performance framework ratings.

# Options for Feedback

- **Recommended options**

1. Minimum n of 16 for all indicators
2. Current minimum n sizes (*preferred*)
3. Minimum n of 20 for all indicators

- **Options not currently recommended by the AWG**

- Lowest minimum n size (e.g., 10 students)
- Highest minimum n size (e.g., 30 students)



The Accountability Work Group is looking for feedback on the options, listed on this slide, which will be described in more detail in the following slides. Three options were recommended by the Accountability Work Group, with preference given to Option 2. Although two additional options were also considered, these options were not ultimately recommended by the group. The reasons are described in an upcoming slide.

# Option 1

**Lower current minimum n for growth to match minimum n for achievement and graduation rate (16 for all indicators)**

Pros	Cons	Considerations
<ul style="list-style-type: none"><li>• Addresses concerns that EL, FRM, MIN, and IEP students may not be getting adequate attention, by including growth for smaller (e.g., more) disaggregated groups</li><li>• More schools/LEAs will have sufficient data for accountability</li><li>• Keeps achievement status quo</li></ul>	<ul style="list-style-type: none"><li>• Past analysis indicated N=16 too low for calculating growth</li><li>• Small systems are vulnerable to impact of a single student: 1 outlier score can strongly impact the average; 1 student represents 6.25% of a group of 16</li></ul>	<ul style="list-style-type: none"><li>• Input regarding whether a n=16 could be considered for growth calculations</li><li>• Meets proposed federal rulemaking requirements that all indicators use the same minimum n</li></ul>

The first option being shared today is to use a minimum n size of 16 students. This option would require lowering the current minimum n size used for growth calculations from 20 to 16 students, in order to match the minimum n size used for the current measures of achievement and post-secondary workforce readiness, also known as PWR.

This option addresses concerns that have been expressed by some stakeholders regarding the exclusion of disaggregated subgroups in the current performance framework system. Specifically, there have been concerns that English learners, minority students, students with disabilities, and economically disadvantaged students may not be getting adequate attention in the current state accountability system due to the small number of students represented within these groups for many schools and districts.

By lowering the minimum n size used for growth calculations, more schools would meet the minimum n size criteria to have growth data included in the performance frameworks. From the perspective of the state, a benefit of this option would be the increased number of schools with sufficient data for growth calculations in the accountability system.

An additional benefit of this option is that it maintains the current minimum n size being used to calculate achievement results and PWR indicators.

Potential negative impacts discussed include concerns regarding the stability of growth calculations using a minimum n size of 16 students. Past analysis had indicated that growth results stabilize using an n size of 20 or more students.

Another potential disadvantage of using a minimum n size of 16 students for all indicators is that small systems are more vulnerable to the impacts of a single student. Although growth calculations use the median, which is less impacted by outliers, continuing to use a minimum n size of 16 students in calculating the mean scale score could result in a single outlying score having a strong impact on the average. Specifically, within a group of only 16 students, a single student represents more than 6% of the calculation. Using a lower minimum n size can cause decreased stability of the results across years.

It is worth noting that this option would meet the proposed rulemaking requirements which state that all indicators must use the same minimum n size. A consideration to keep in mind in recommending this option, however, is that additional analyses should be conducted in order to re-evaluate whether a minimum n size of 16 students could be considered for growth calculations.

## Option 2 (Preferred)

Maintain current minimum n sizes (16 for achievement and graduation rate; 20 for growth)

Pros	Cons	Considerations
<ul style="list-style-type: none"><li>Aligns with current Performance Framework calculations</li><li>Does not increase concerns that EL, FRM, MIN, and IEP students may not get adequate attention, by maintaining low (16) minimum n for achievement, although not growth</li></ul>	<ul style="list-style-type: none"><li>Fewer schools/LEAs will have data for growth accountability, compared to Option 1</li></ul>	<ul style="list-style-type: none"><li>Does not meet proposed rulemaking requirements that all indicators use the same minimum n</li><li>Acknowledges concern that N=20 has proven to be the minimum necessary to ensure stability of growth results</li></ul>



The second option being shared today is to maintain the current minimum n sizes used in the state accountability system. Currently, Colorado uses a minimum n size of 16 students for achievement and PWR, and a minimum n size of 20 students for growth. This was the preferred option identified by the small group within the Accountability Work Group.

A benefit of this option is that it aligns with the current performance framework calculations. Because this option maintains the current minimum n sizes, it would not increase concerns that disaggregated subgroups are not currently receiving adequate attention in the state accountability system.

Compared to the first option, however, fewer schools would have growth data to be used in the state accountability system, which is considered a potential disadvantage from the perspective of the state. This option would, however, continue to acknowledge concerns that a minimum n size of 20 students is needed to improve the stability of growth results. A consideration to keep in mind in recommending this option, however, is that it does not meet the proposed rulemaking requirements which state that all indicators must use the same minimum n size. If the proposed rules are integrated into regulations, this option could not be used by the state.



## Option 3

**Raise current achievement and graduation rate minimum n to 20 match minimum n for growth (20 for all indicators)**

Pros	Cons	Considerations
<ul style="list-style-type: none"><li>Less vulnerable to impact of a single student or extreme outlier score; a single student has at most a 5% impact on each indicator</li></ul>	<ul style="list-style-type: none"><li>Lower number of schools/LEAs will have achievement and graduation rate data for accountability</li><li>Increases concerns that fewer schools and LEAs will be held accountable for disaggregated EL, FRM, MIN, and IEP groups</li></ul>	<ul style="list-style-type: none"><li>Meets proposed rulemaking requirements (same on all indicators)</li><li>Acknowledges concern that N=20 has proven to be the minimum necessary to ensure stability of growth results</li></ul>

The third option being shared today is to use a minimum n size of 20 for all indicators. This option would require increasing the minimum n size used for achievement and PWR measures from 16 to 20 students, in order to match the minimum n size currently used for growth.

A benefit of this option is that increasing the minimum n size used for achievement and PWR measures helps to reduce the vulnerability of small systems to the impacts of a single student. Within a group of 20 students, a single student would only represent 5% of the calculation. Increasing the minimum n size for achievement and PWR may increase the stability of the results across years.

An additional benefit of this option is that it maintains the current minimum n size being used to calculate growth results.

A potential disadvantage of this option is that it increases concerns expressed by some stakeholders regarding the exclusion of disaggregated subgroups in the current performance frameworks. Specifically, using a higher minimum n size for achievement and PWR measures would decrease the number of schools with results for those indicators in the state accountability system. Fewer schools would be held accountable for the performance of those disaggregated groups as a result.

Like the second option, this option would, however, continue to acknowledge concerns that a minimum n size of 20 students is needed to improve the stability of growth results. It is also worth noting that this option would meet the proposed rulemaking requirements which state that all indicators must use the same minimum n size.

## Not Recommended

- **Lower current minimum n (for example: 10 students)**
  - This option ensures that even more schools/LEAs are held accountable for the performance of disaggregated groups, but raises substantial concerns regarding the stability of growth results, the impact of outliers and single students, and the ability to report results publicly due to concerns regarding personally identifiable information (PII).
  - We cannot have an accountability system without public reporting of the data.
- **Raise current minimum n (for example: 30 students)**
  - This option results in the most stable data, but too many schools/LEAs would not be held accountable for the performance of disaggregated groups.



Two additional options were also discussed and considered, but were not ultimately recommended by the Accountability Work Group. These options are included, however, so we can obtain additional feedback regarding the recommendations put forth. The first option not currently recommended is to lower the current minimum n sizes, for example to a minimum n size of 10 students. This option would result in the largest number of schools with data available for reporting in the state’s accountability system, especially regarding the performance of disaggregated groups. The largest disadvantage of this option, however, is that it raises substantial concerns regarding the stability of results across years and regarding the impact of potential outlying data. In particular, using a minimum n size of 10 students would result in a single student accounting for as much as 10% of the calculations of each indicator. This option also raises concerns regarding the ability to report results publicly, in order to ensure personally identifiable information is not revealed. We cannot utilize a state accountability system that would not allow for the public reporting of data.

The last option not currently recommended is to raise the current minimum n sizes, for example to the maximum value of 30 students. Although this option would result in the greatest stability of results across years, it would result in the fewest number of schools with data available for reporting the performance of disaggregated groups. Too many schools would not be held accountable for the performance of disaggregated groups in the state accountability system.

## Decision Point

- How should Colorado disaggregate the performance of minority students in the state?



Related to the issue of minimum n sizes is the decision point regarding how Colorado should disaggregate the performance of minority students in the state, for the purposes of calculating the school performance frameworks.

# Requirements

- **Federal Statute (ESSA)**
  - Students from major racial and ethnic groups
- **Proposed Rulemaking**
  - Students from each major racial and ethnic group



The requirement outlined in the Every Student Succeeds Act exists to ensure that schools are held accountable for the performance of disaggregated groups, such as minority students. Federal statute requires a single subgroup to include the performance of students from major racial and ethnic groups.

The notice of proposed rulemaking, however, restated the requirements of this disaggregation. Specifically, the proposed rulemaking requires that states disaggregate the performance of students from each major racial and ethnic group separately, as opposed to using a single group representing all minority students.

## Overall Considerations for Race/Ethnicity Disaggregation

- The term “minority” can be inaccurate or misleading
- Students or their parents report all racial/ethnic groups that apply, not primary identification
  - Hispanic identification trumps all categories
  - Anyone who chooses two or more affiliations automatically goes into the “Two or more races” category



Overall considerations were discussed regarding the disaggregation of data for students in major racial and ethnic groups. Some members of the Accountability Work Group expressed concerns regarding the use of the term “minority students”. They believed this term may be inaccurate or misleading in some schools, where these students represent a majority of the student enrollment.

The implications of how students are identified for the race/ethnicity category were also discussed. Students and/or parents can report all of the racial/ethnic groups that apply, not just a primary identification. If multiple categories are indicated, students are automatically coded in the “Two or more races” category, unless ethnicity was marked as Hispanic. If ethnicity was marked as Hispanic, students are automatically coded in the “Hispanic” category, regardless of any other racial groups reported.

## Options for Race/Ethnicity Disaggregation

Options	Pros	Cons
<ul style="list-style-type: none"> <li>Use one minority group</li> </ul>	<ul style="list-style-type: none"> <li>Consistent with current Performance Frameworks</li> <li>Holds smaller systems without sufficient individual group sizes accountable for the overall minority group</li> </ul>	<ul style="list-style-type: none"> <li>Doesn't address concerns that specific racial and ethnic groups may not be getting adequate attention</li> <li>Could mask potential inequitable outcomes or achievement gaps for different race/ethnic groups</li> </ul>
<ul style="list-style-type: none"> <li>Analyze data for each race/ethnic group separately</li> </ul>	<ul style="list-style-type: none"> <li>Better addresses equitable education concerns</li> <li>Provides schools and districts with access to information for planning purposes</li> </ul>	<ul style="list-style-type: none"> <li>Fewer schools and districts will be held accountable</li> <li>Holds large systems accountable in a different way than smaller systems</li> </ul>
<ul style="list-style-type: none"> <li>Use one minority group for accountability; report disaggregated race/ethnic group data when minimum n achieved (<i>preferred</i>)</li> </ul>	<ul style="list-style-type: none"> <li>Provides schools and districts with access to information for planning purposes</li> </ul>	<ul style="list-style-type: none"> <li>Disaggregated groups don't impact accountability calculations (disaggregated group performance reported only)</li> </ul>

Three options were considered for disaggregating by racial and ethnic groups. The first option recommended was to continue using a single “minority students” group. A benefit of this option is that it is consistent with the current performance framework calculations. Another benefit is that this option allows the state to hold smaller systems accountable for the overall performance of minority students, as those schools may not have a sufficient number of students within each of the racial and ethnic categories to be reported separately. Similar to concerns expressed regarding the use of higher minimum number of students for the state accountability system, a potential disadvantage of this option is that it does not address concerns expressed by some stakeholders that individual racial and ethnic groups may not be receiving adequate attention on the performance frameworks. This option could potentially mask inequitable outcomes or achievement gaps for different racial and ethnic groups. Lower performance by students in a specific racial and ethnic group may be concealed if the performance of the remaining students in the minority group is higher.

The second option recommended was to analyze, and hold schools accountable for, each racial and ethnic group separately. This option better addresses the concerns of some stakeholders regarding equitable education as individual racial and ethnic groups would be presented separately for the state accountability system. A potential disadvantage of this option, however, is that fewer schools would be held accountable for the performance of students in these racial and ethnic groups. Many schools barely meet the minimum n size requirements to have results for their minority students as a

whole. If the results are further disaggregated into the specific racial and ethnic groups, those schools would no longer meet the minimum n size requirements. By virtue of the number of students in each racial and ethnic group across the state, schools would be more likely to be held accountable for certain groups, such as Hispanic/Latino or Black or African American, than other groups, such as Native Hawaiian or Other Pacific Islander. As a result, large systems may be held accountable for the performance of each of the racial and ethnic groups, whereas small systems may only be held accountable for the performance of a single group.

The final option recommended was to continue using a single “minority students” group for the performance framework calculations, but also report disaggregated results for each racial and ethnic group separately when minimum n sizes are met. This was the preferred option of the small group in the Accountability Work Group. This option would allow the state to continue holding smaller systems accountable for the overall performance of minority students. Although the disaggregated results for each racial and ethnic group will be reported when available, a disadvantage of this option is that the separate disaggregated groups do not impact overall state accountability calculations.

## Input Needed

- Please use this link to respond to the following questions:  
<https://www.surveymonkey.com/r/JTPQ7KH>
  - 1. What is your role? (Parent, educator, public, hub member)
  - 2. Where are you from? (rural, urban, or suburban setting)
  - 3. Rank order the minimum n options presented.
  - 4. Rank order options presented regarding racial and ethnic group disaggregation.
  - 5. Optional, provide any rationale or considerations for your responses.



Now, we need your input. Please use the provided survey link to answer the following questions:

1. What is your role? It is important for us to consider the results of this survey disaggregated by whether or not you are a parent, an educator, a member of the public, and/or a hub member. You will be able to select all categories that represent your role(s).
2. Where are you from? It is also important for us to consider the results of this survey disaggregated by whether you represent rural, urban, or suburban settings.
3. We will ask you to rank order the three options recommended by the Accountability Work Group regarding minimum n, as well as the three options recommended regarding racial and ethnic group disaggregation, using 1 to indicate the option you most prefer and 3 to indicate the option you least prefer.
4. We will also ask you to provide any rationale or considerations you may have for the rankings you provided.

We appreciate the time you have given to this information regarding minimum n size, and we appreciate your time in providing feedback. It will be a tremendous help as we further develop the ESSA state plan. Thank you.