Accountability Data Analysis

Each year, the Kentucky Department of Education (KDE) publicly reports school accountability data derived from a variety of measures.

The analysis of accountability data can enable more accurate interpretations of what is happening in a school and inform improvement planning and allocation of resources.

The guidance below was developed to support districts with a general framework for accountability data analysis and assumes the reader's prior knowledge of Kentucky's accountability system. For most recent back-to-school accountability trainings, please visit the Meetings and Trainings webpage on the KDE website.

Accessing the Data

State, district and school assessment and accountability data are available on the pages of the School Report Card (SRC) or in the SRC Data Sets. Performance is reported for all students and for each student demographic group. Data reported in the SRC will follow the Family Education Rights and Privacy Act (FERPA) guidelines and USED Best Practices for Reporting.

District Assessment Coordinators (DACs) are provided detailed accountability data through a secure file transfer. Data from these files may be shared with district and school personnel who make instructional decisions. The files contain complete information used in accountability calculations, including suppressed data not available in the School Report Card.

Schools receive an accountability summary file that includes the school's overall performance score and rating (color), index scores and labels for each indicator, federal classifications if applicable, and aggregate information about how students performed on the components of each indicator (e.g., percentage Novice, Apprentice, Proficient, Distinguished {NAPD} for each content area).

In addition to the accountability summary, schools also receive assessment data and data from other measures disaggregated by student demographic groups and by individual student level performance.

Data from each indicator are collected through various measures that are explained in the Indicator Metrics for Schools document.

Kentucky Department of
EDUCATION

Accountability Data Provided

Accountability Summary	Overall Performance Rating (color), Indicator Scores and Labels, Federal Classifications (Comprehensive Support and Improvement {CSI}, Additional Targeted Support and Improvement {ATSI}, Targeted Support and Improvement {TSI})
State Assessment Results	Student NAPD Performance on the Kentucky Summative Assessments (KSA) and Alternate KSA in Content Areas of Reading, Mathematics, Science, Social Studies, On Demand Writing and Editing and Mechanics
Quality of School Climate and Safety Survey Data	School indicator, climate index, safety index and survey question data
English Learner Progress Results	Student Performance on ACCESS for ELLs and Alternate ACCESS for ELLs assessments including points earned from a growth value table
Postsecondary Readiness Data	Student Benchmark Performance on a variety of measures used to determine postsecondary readiness.
Graduation Rate Data	4- and 5-year Cohort Graduation Information

Analyzing the Data

There are a variety of data analysis methods and protocols that can be found online, but the type of data analysis used depends on the goals and the conditions present in the school or district. A first step is often just reviewing the data to determine what the data show, usually followed by a diagnostic analysis that helps determine why the data are where they are. Are some things working well? Is there an area where something isn't working? What factors might be causing the data to be what they are?

The most typical data diagnostic procedures follow a common approach of disaggregating data and asking relevant questions that lead to root causes.

Some District Assessment Coordinators prefer to hold workshops, or data retreats, where school/district leadership dissect the data, while others, due to time constraints, provide the data in prepopulated worksheets to school staff who work closely with students. Staff can then analyze the data in professional learning communities. Group analysis in vertical teacher teams can give an interesting perspective. The important thing is that staff are talking about the data and the students represented by the data. For each component of accountability data below, there are data discussion points that can help guide the conversations about what the data show, what they do not show, and what actions might be considered based on the data.

Overall Performance (Accountability Summary)
Overall Score

The accountability summary is usually the first data set that DACs want to examine. Begin by reviewing the school's overall score and performance rating (color). Kentucky schools receive an overall accountability performance rating of red, orange, yellow, green or blue (with red being the lowest and blue being the highest). There are multiple ways that a school can arrive at each color, so a deeper dive is necessary.

The images below show two high schools that each received an overall performance rating of yellow; however, the difference in performance on individual indicators is apparent. School A performed in the high category for state assessment results and English Learner Progress, but low in Graduation Rate, while School B rated medium in all indicators. The rating of yellow is only a starting place in the data discussion.

Kentucky Department of
EDUCATION
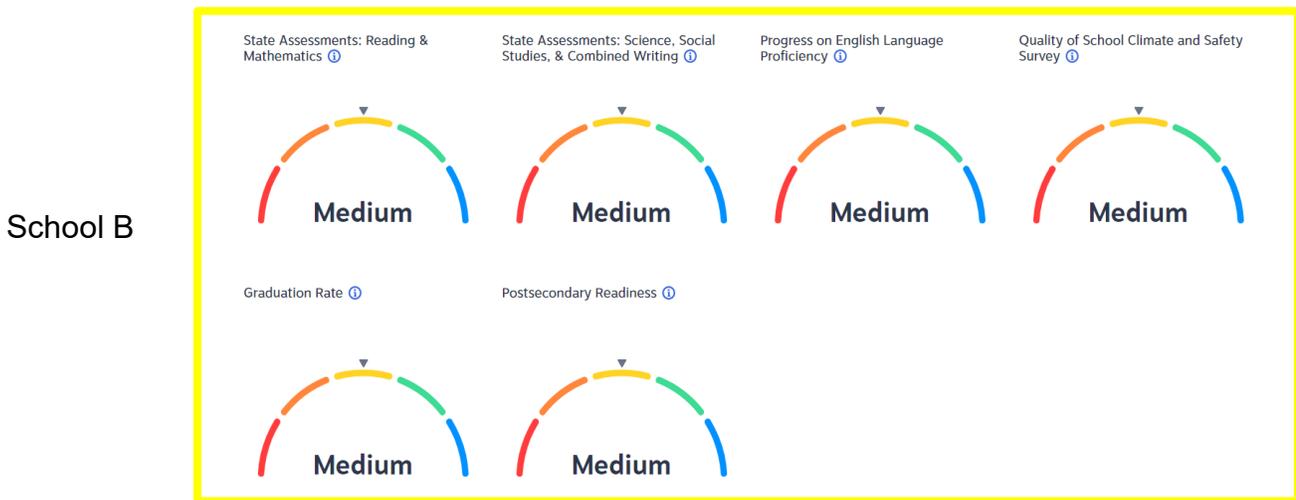
The Overall Accountability [School Performance Level Descriptors](#) document describes the degree of performance for each color (red, orange, yellow, green, blue), of the overall accountability rating, based on data from all available indicators.

Overall Accountability Performance Rating Cut Scores

School Level	Red	Orange	Yellow	Green	Blue
Elementary Schools	0-34.9	35.0-52.9	53.0-68.9	69.0-78.9	79.0 or more
Middle Schools	0-36.9	37.0-50.9	51.0-61.9	62.0-70.9	71.0 or more
High Schools	0-47.9	48.0-58.9	59.0-66.9	67.0-77.9	78.0 or more

Federal Classifications
Some schools receive a federal classification of CSI, ATSI or TSI. Data analysis takes on a different significance when a school has been designated with a federal classification. For example, among other requirements, TSI/ATSI schools must develop their student demographic group [improvement plans](#) and embed them within their Comprehensive Support and Improvement Plans (CSIPs).

Doing a thorough job of data analysis will inform your school improvement plans and direct the focus of limited resources.

Overall Performance Data Discussion Points
- What color is our overall performance rating?
- How close are we to the next color level on the Overall Performance Rating cut score table? Why does that matter?
- How did each indicator contribute to our overall performance rating?
- What schoolwide/districtwide areas of need were identified?
- Do we have a federal classification?
- If TSI, which student demographic groups have contributed to that classification?
- Are our TSI student groups performing well in some indicators? Why?

Breaking Down the Data by Indicators
There are six indicators in Kentucky's accountability system. Disaggregating the overall performance rating by indicator provides a more complete view of what is happening at the school.

Schools receive a score for each indicator where the minimum number of 30 students is met. For school year 2021-2022, indicators were based on status only (current year performance). It is possible that a school's or student group's overall score does not

include data from every indicator. If data are not available for an indicator, its weight is proportionally redistributed to all remaining indicators.

The *Indicator Performance Level Descriptors* differentiate performance based upon the extent to which students have demonstrated performance that meets the state's standards for that indicator.

State Assessment Results in Reading and Mathematics
The State Assessment Results Reading and Mathematics indicator data show how well students are meeting grade-level standards in reading and mathematics as assessed on the Kentucky Summative Assessment, administered each spring in grades 3-8 and 10.

Indicator Cut Scores and Labels for State Assessment Results in Reading and Mathematics

Indicator Cut Scores for State Assessment Results in Reading/Mathematics					
School Level	Very Low	Low	Medium	High	Very High
Elementary	0-31.9	32.0-53.9	54.0-69.9	70.0-80.9	81.0-125
Middle	0-35.9	36.0-54.9	55.0-64.9	65.0-72.9	73.0-125
High	0-38.9	39.0-52.9	53.0-64.9	65.0-76.9	77.0-125

State Assessment Results in Reading and Mathematics Data Discussion Points
- What is the status level (very low – very high) for this indicator as a whole?
- How does the Performance Descriptor define the accountability level for this indicator?
- How does the reading score compare to the math score?
- Are there any consistencies across grade levels or student groups?
- In comparison to other content areas and performance descriptors, what patterns are observed?
- What do the NAPD numbers tell you? Are your percentage of Novice/Apprentice higher or lower than your percentage of Proficient/Distinguished?
- What actions will need to be taken to address the identified learning needs?
- What attainable goal(s) can be set for these students as a group?

State Assessment Results in Science, Social Studies and Writing
The State Assessment Results Science, Social Studies and Writing shows how well students are meeting grade-level standards in science, social studies and writing (combined performance of editing and mechanics and on-demand writing). It is based

on student performance on the Kentucky Summative Assessment, which is administered each spring once per grade band (i.e., elementary, middle, high).

Indicator Cut Scores and Labels for State Assessment Results in Science, Social Studies and Writing

Indicator Cut Scores for State Assessment Results in Science/ Social Studies/Writing					
School Level	Very Low	Low	Medium	High	Very High
Elementary	0-33.9	34.0-49.9	50.0-66.9	67.0-75.9	76.0-125
Middle	0-32.9	33.0-47.9	48.0-58.9	59.0-68.9	69.0-125
High	0-31.9	32.0-46.9	47.0-54.9	55.0-62.9	63.0-125

State Assessment Results in Science, Social Studies and Writing Data Discussion Points
- What is the status level (very low – very high) for this indicator as a whole?
- How does the Performance Descriptor define the accountability level for this indicator?
- How does the score in science compare to social studies? Combined writing?
- Are there any consistencies across student groups?
- In comparison to other content areas and performance descriptors, what patterns are observed?
- What do the NAPD numbers tell you? Are your percentage of Novice/Apprentice higher or lower than your percentage of Proficient/Distinguished?
- What actions will need to be taken to address the identified learning needs?
- What attainable goal(s) can be set for these students as a group?

Quality of School Climate and Safety (QSCS)
Indicator Cut Scores and Labels for Quality of School Climate and Safety

Indicator Cut Scores for Quality of School Climate and Safety					
School Level	Very Low	Low	Medium	High	Very High
Elementary	0-66.9	67.0-73.9	74.0-76.9	77.0-81.9	82.0-100
Middle	0-58.9	59.0-63.9	64.0-67.9	68.0-74.9	75.0-100
High	0-53.9	54.0-58.9	59.0-63.9	64.0-67.9	68.0-100

The Quality of School Climate and Safety Indicator is determined by student perception data from surveys that measure insight to the school environment.

The indicator score for the QSCS indicator is derived from points values connected to student responses on the QSCS survey. Agree/Strongly Agree are positive responses

worth higher points values. The scores are averaged for each question to get a question score. The Climate and Safety indexes are calculated separately by averaging the question scores that are associated with the respective constructs. The two construct scores are then averaged together to yield the QSCS indicator score.

Quality of School Climate and Safety Data Discussion Points
- Do any questions stand out as having higher percentages of Agree/Strongly Agree? What about Disagree/Strongly Disagree?
- Do any of our student demographic groups respond differently from other groups?
- Which construct yielded higher ratings (School Climate or Safety)?
- What measurable actions can we take to address deficits within climate and safety?

English Learner Progress

Indicator Cut Scores and Labels for English Learner Progress

Indicator Cut Scores for English Learner Progress					
School Level	**Very Low**	**Low**	**Medium**	**High**	**Very High**
Elementary	0-33.9	34.0-47.9	48.0-57.9	58.0-64.9	65.0-140
Middle	0-15.9	16.0-23.9	24.0-30.9	31.0-44.9	45.0-140
High	0-9.9	10.0-23.9	24.0-30.9	31.0-44.9	45.0-140

The Progress on English Language Proficiency Indicator is measured by student growth on the English Language Proficiency Exam by English Learners (ELs). English learners' progress is included in the calculation using an English Language Acquisition Growth Value Table.

When reviewing the ACCESS data for ELs in your schools, begin by comparing composite scores from the previous year to current year composite scores for the same students. To analyze further, look at the individual domain scores.

Review ELD Standards Framework the English Language Development (ELD) standards by grade level and domain to see where the student is now and look at the next level up to know what standards mastery will move the student to the next level. Be sure to share the data and the standards with both EL teachers and Content area teachers who work with ELs daily.

English Learner Progress Data Discussion Points
- Did the student make a significant amount of growth or not from previous year to current year on ACCESS? What might the reasons be?
- When looking at the composite score, did the student exit the EL program or not this year? How many students exited this year compared to previous years?
- When looking at the individual scores, how did the student do on the individual domains of ACCESS?
- In which domain (s) are our English Learners most challenged? If so, why? What supports or programs are in place to improve?
- In which domain (s) are our English Learners most successful? If so, why?
- Take a deeper look at the two domains of the language around the content of Reading and Writing on ACCESS, how did the student score on these two domains compared to the other domains?
- How is each EL student doing on classroom assignments, assessments and formative assessments in the school?

Postsecondary Readiness (high school only)

Indicator Cut Scores and Labels for Postsecondary Readiness

Indicator Cut Scores for Postsecondary Readiness					
School Level	**Very Low**	**Low**	**Medium**	**High**	**Very High**
High School	0-58.9	59.0-75.9	76.0-87.9	88.0-94.9	95.0-125

Postsecondary Readiness is the attainment of the necessary knowledge, skills, and dispositions for a student to successfully transition to the next level of his or her educational career, academic or career. To demonstrate postsecondary readiness, high school students must earn a high school diploma or be classified as a grade 12 non-graduate AND meet one type of readiness (Academic or Career).

Postsecondary Readiness Data Discussion Points
- Considering the demographic distribution of students in your schools, which student groups appear to have lower success rates? Are all demographic groups included and able to participate in various pathways?
- Considering school/district scores, where have gains been made (e.g., academic or career ready)? Where have you not met gains?
- If students are not meeting readiness, what might be the reasons?
- Are students given the opportunity to take dual credit classes?
- Are students being held into one track and not allowed to change career paths if needed?
- Are students involved in the high demand areas of industry certification for career readiness classes and completing the exams to be awarded the certifications?
- Are students taking part in apprenticeships?
- Are students participating in academic and career readiness opportunities within all schools in the district?

Graduation Rate (high school only)

Indicator Cut Scores and Labels for Graduation Rate

Indicator Cut Scores for Graduation					
School Level	**Very Low**	**Low**	**Medium**	**High**	**Very High**
High School	0-85.9	86.0-91.9	92.0-94.9	95.0-97.9	98.0-100

Graduation Rate is determined by the percentage of students earning a high school diploma in four and five years compared to the group of students that began in high school in grade 9. Kentucky's graduation rate indicator averages the four- and five-year rates.

The four and five year adjusted cohort graduation rate is calculated by the number of students who graduate in four or five years with a regular high school diploma divided by the number of students who entered high school four years earlier adjusting for transfers in and out, emigres and deceased students. The calculation is based on the student's final enrollment.

United States Department of Education (USED) requires all students, including those participating in the alternate assessment program, be included in the graduation rate calculations. Only students completing a standard diploma impact positively the calculation or increase the graduation rate. Kentucky's alternate diploma is not recognized as a standard diploma by USED.

Kentucky Department of
EDUCATION

Graduation Rate Data Discussion Points
- Comparing Graduation Rate (cohort) to the disaggregate data presented in the data sets: Which groups of students had the lowest graduation rate? What strategies might improve lower group rates?
- What type of interventions can be provided to increase student completion and persistence to graduation?
- Which groups of students are not graduating on time?
- What measurable actions can we take to address the graduation rate?
- Is the graduation data being kept up to date for students in IC?

Student Level Data

Schools receive individual student level data that include student performance on assessments and other measures included in the accountability data. ***As with all individual student level data, measures should be taken to ensure confidentiality and protection of student personal identifying information.***

These data will be especially helpful when analyzing student demographic group performance. Each student demographic group can be compared to the "All Students" category; however, using the opposite reference group can sometimes reveal a different story. For example, instead of only comparing student groups to all students, compare free/reduced lunch students with non-free/reduced lunch students; compare students with disabilities to students without disabilities, and so on.

Connect to the Classroom

Creating a culture where teachers, administrators and other stakeholders value, practice, and encourage the use of data to make ongoing instructional and program improvement is the foundation of effective data analysis. One way to involve teachers in the analysis of accountability data is through Professional Learning Communities where teachers can analyze results together to identify which instructional strategies are working and which are not. (See the Model Curriculum Framework for more information.)

When analyzing content assessment data (i.e., KSA/AKSA results), it can be enlightening to review for consistency with local assessments. Are the state assessment data consistent with classroom assessments, district assessments, etc.? For example, are students who performed at Novice level on state assessments demonstrating the same struggles on classroom assessments or do report cards show something different? Why might those differences exist? Have class assessments been reviewed for alignment to the Kentucky Academic Standards? Do teachers look at classroom assessment results broken down by student group? Are all students engaging with grade level content in their daily class assignments? How do you know?

Do teachers understand the KSA/AKSA NAPD Performance levels? On these assessments, students receive a scale score and a performance level (NAPD). While scale scores are reported as numbers, performance levels are descriptive. These levels indicate performance on groups of items that measure similar skills. Understanding the Performance Level Descriptors (PLDs) for each grade and content area can help teachers determine how to move students to the next level.

Consider Data Purpose, Limitations and Cautions

Because of COVID-19 disruptions and the move from K-PREP to KSA due to updated content area standards, assessment and accountability comparisons with previous years are not valid. Accountability comparisons can be made between schools at each level (e.g., elementary to elementary).

When reviewing accountability data, keep in mind the purpose and limitations of each data component. While individual student performance scores contribute to the aggregate accountability data, understand that overall accountability data where all indicator data are combined are primarily used to determine which schools need added supports and resources.

Analyzing indicator scores and labels (status of very low through very high) can be useful for school/district-wide program evaluation, change and improvement. For example, an indicator label of very low in the State Assessment Results in Science, Social Studies and Writing indicator could point to a need for improvement in the curriculum or instructional practices for one or more of those subject areas. Analyzing each content area separately would provide more specific information.

Analysis of disaggregated student demographic data can reveal a more specific concern. For example, a school might have received a Postsecondary Readiness indicator label of high, but when reviewing the student level data, they discover that their students with disabilities received a low performance level for that indicator. Connecting this information with school data can provide even more insight. Were students with disabilities offered the same academic and career pathway opportunities as students without disabilities, for example?

Understand that averaged data can include outliers that can skew the data in a particular direction. Are different supports needed for students on the far ends of the distribution? Pay attention to the outliers, but also try removing them from the data set and reanalyzing. Do you see a different story? Remember that each number represents actual students. Drawing general conclusions should be done with the understanding that there will be students who perform outside of those conclusions and might need something different.

Do not make assumptions before analyzing further for root causes. For example, circumstances related to the COVID-19 pandemic have undeniably impacted results, but it could be detrimental to assume all low or declining performance implications are due to COVID. Watch for staff member mindsets that tend to automatically conclude that lower performance results are due to a single, specific factor such as lack of parental involvement. Encourage educators to be open to other possible causes.

Communicating the Data

Likely in your role as DAC, you will want to communicate your results to various stakeholders.

One of your goals will be to make the data meaningful so that others will not only understand the data, but be motivated to act upon the findings. Putting the data into context and building a narrative can help accomplish this. A data narrative summarizes the conclusions that have been drawn and the insights you gained in the analysis. It tells a story by focusing on the interesting data points that show areas that need improvement and specific successes to celebrate.

When developing the data narrative, consider your audience. Are you sharing the right data with the right people? The local school board will be interested in a different set of the data and will require a different data narrative than would be needed for a fourth grade teacher, for example.

Acting on the Data

Making decisions based on data is a little like being a detective. Good data analysis requires asking lots of questions, uncovering more and more information and revisiting hypotheses along the way until a complete picture — supported by the facts — unfolds.[1] Once needs are determined, schools may use their findings to direct resources and deliver support.

Focus
Schools that are facing many areas where results are lower than ideal should consider beginning with two or three areas of greatest need. As progress is made on those areas, action plans for other areas can be introduced.

It's important to focus on what does not change. Instead of trying to improve accountability scores in a system that could potentially change, focus on improving what

---

[1] https://aasa.org/uploadedFiles/Policy_and_Advocacy/files/UsingDataToImproveSchools.pdf

has been consistent each year—student performance. For example, novice reduction is a strategy that has been useful across several versions of the accountability system.

A focus on improving what is within your control is also important. For example, at the local level you cannot modify the calculations of the accountability system as defined in state law, but you may be able to influence teacher instructional practice. As you work toward determining causes and solutions, continue to ask yourself, "Is this within our control?"

Data Analysis Tools and Resources

Review, Analyze, and Apply Data (KDE resources webpage)
Resources on this webpage will help school leaders effectively use data to improve school practices that reduce novice performance.

Using Root Cause Analysis as Part of the Continuous Improvement Process in Education
This resource is designed to provide districts with information on root cause analysis as part of school improvement, including both high-level guidance and detailed examples of what root cause analysis can look like at the school level.

Affinity Diagram
This article from ASQ provides an overview of an affinity diagram, explains when stakeholders can use an affinity diagram for brainstorming and finding relationship and themes among ideas, and outlines the affinity diagram process.

Five Whys for Inquiry of Group Questions
This document from the School Reform Initiative provides guidance on brainstorming potential causes of a problem and then engaging in the "Why Questioning" process to identify root causes.

Root Cause Analysis Workbook
This workbook takes leaders through eight steps for conducting a root cause analysis in a strategic, deliberate way to ensure that strategies are targeted to the real cause behind equity gaps.