Using Student Achievement Data to Support Instructional Decision Making

Recommendations and Strategies

Aligned with South Carolina Standards

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Recommendation 1
Make data part of an ongoing cycle of instructional improvement.

Recommendation 2
Teach students to examine their own data and set learning goals.

Recommendation 3
Establish a clear vision for schoolwide data use.

Recommendation 4
Provide supports that foster a data-driven culture within the school.

Recommendation 5
Develop and maintain a districtwide data system

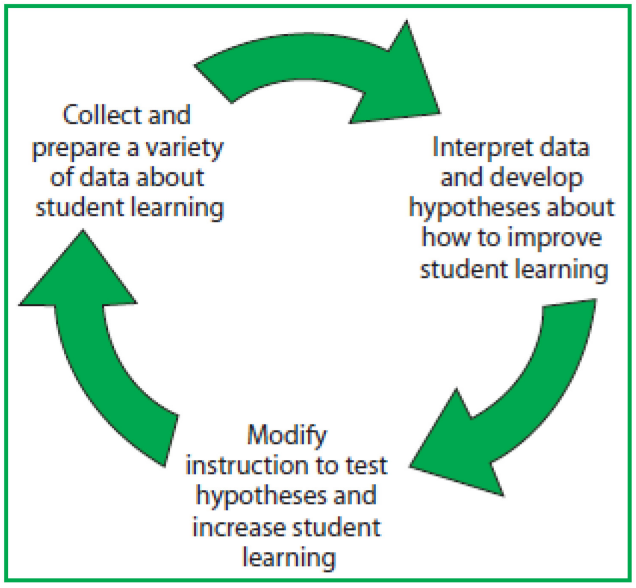
This document provides a summary of recommendations from the WWC Using Student Achievement Data to Support Instructional Decision Making Practice Guide (Hamilton et al., 2009). *Make data part of an ongoing cycle of instructional improvement* is a classroom-level recommendation that works in conjunction with the other recommendations in this series.

Recommendation 1

Make data part of an ongoing cycle of instructional improvement.

Teachers should adopt a systematic process for using data to inform instructional decisions and improve their ability to meet students' learning needs. The process of using data to improve instruction is cyclical, and data use cycles typically include the following three steps (see Figure 1). Although the steps are sequential, teachers can start cycles at any step. Step one of a data use cycle involves collecting and preparing data from a variety of relevant sources, including annual, interim, and classroom assessments. After preparing data for examination, teachers should analyze and interpret the data and develop hypotheses about factors contributing to students' performance and the specific actions they can take to meet students' needs. Teachers then should test these hypotheses by implementing changes to their instructional practice and collect data to determine if the instructional changes have the desired impact on student outcomes.

Figure 1. Data use cycle (Hamilton et al., 2009)



Strategy 1

Collect and prepare a variety of data about student learning.

SC Teaching Standards: INST.AF.4; PLAN.A.2; PLAN.A.3

To develop a comprehensive understanding of student learning needs, teachers should collect data from diverse sources, including state, district, school assessments, and curriculum-based assessments, as well as classroom-based assessment data from tests and projects. By using multiple data types, teachers can obtain a balanced view of student achievement and avoid relying solely on high-stakes tests, which may not provide timely and actionable data. While statewide assessments can reveal broad strengths and weaknesses, they are often administered months before the new school year begins, making it necessary for teachers to supplement these with more current data. This variety enables teachers to set relevant goals and identify specific areas where students need additional support.

In addition to annual assessments, interim assessments conducted periodically throughout the year offer teachers timely data to evaluate the effectiveness of instruction and track student progress. For example, a districtwide interim assessment can help teachers determine if students struggling with specific skills, such as converting fractions to decimals, show improvement following targeted interventions. By collecting and preparing interim data, teachers can adjust their strategies and monitor student growth within the current school year.

Classroom-level data, such as unit tests, projects, and homework, provide immediate feedback on student learning and offer rich insights that complement standardized assessments. These data sources allow teachers to analyze students' specific skills in-depth, such as writing responses in literature, and to identify areas needing additional guidance. While classroom data can vary widely between classes, collaborative analysis of student work can highlight differences in expectations and content coverage, enabling teachers to align their instructional practices. By organizing these diverse data sources in aggregate forms, teachers can recognize patterns in student performance, helping them make informed instructional decisions that address students' specific learning needs.

Example

A seventh-grade English teacher uses multiple data sources to gain a well-rounded understanding of her students' learning needs. As the school year begins, she reviews state assessment data from the previous year to identify broad trends, noting that several students struggled with reading comprehension.

Recognizing that this data may not fully reflect her students' current skills, she supplements it with results from the district's interim assessments, which are conducted quarterly. After the first interim assessment, Ms. Rivera observes that comprehension issues persist in certain students, particularly in identifying main ideas and supporting details.

To dig deeper, the teacher collects additional data from classroom-level sources, such as students' reading journals, quizzes, and a recent project where students analyzed short stories. She notices specific patterns, like difficulties in connecting textual evidence to their interpretations. During a team meeting, she shares her findings and collaborates with other teachers to identify strategies that target these specific comprehension skills. By using a range of data sources, Ms. Rivera not only gains a comprehensive view of her students' needs but also ensures her instructional adjustments are timely and focused, helping her support each student's progress effectively throughout the school year.

Strategy 2

Interpret data and develop hypotheses about how to improve student learning.

SC Teaching Standards: INST.AF.4

Teachers should interpret the data they've gathered, either independently or in teams, to identify schoolwide, classwide, and/or individual student strengths and weaknesses. By identifying trends, teachers can adjust instructional time, strategies, and resources to focus on the most critical content and learning needs. For individual students, teachers can tailor assignments and feedback to leverage strengths and address areas needing growth. Using data in this way ensures that instruction is responsive to each student's unique needs.

A critical part of data interpretation is "triangulation," or using multiple data sources to verify and deepen insights. By examining evidence from various assessments—such as annual state tests, district interim tests, and classroom assessments—teachers can gain a clearer picture of student learning needs. Consistent findings across data sources build confidence in instructional decisions, while conflicting results encourage teachers to investigate further. For example, if state and interim assessments both indicate that students struggle with main idea identification, teachers can be confident in focusing on this skill. If, however, one source shows proficiency and another shows difficulty, they may examine the assessments to clarify the discrepancy, perhaps revealing differences in question format or content focus.

Finally, teachers should collaborate with grade-level or subject-area teams to interpret data. Collaborative analysis allows teachers to share effective practices and develop consistent expectations for student performance. By working together, they can generate hypotheses on how instructional adjustments might improve specific skill areas, test these ideas with future assessments, and refine strategies based on the results. This team-based approach not only fosters a shared understanding of student needs across the school but also builds a support system for addressing those needs in a coordinated, consistent manner.

Example

A middle school science teacher begins the year by analyzing data from state and district assessments to identify his students' general science comprehension strengths and weaknesses. He notices that many students struggle with interpreting scientific data tables and graphs. To verify this trend, he reviews scores from recent classroom quizzes and a lab project focused on data interpretation, confirming that students have difficulty with this skill across multiple data sources.

Using this information, the teacher formulates a hypothesis: providing targeted practice in interpreting scientific data will improve his students' performance. He decides to incorporate more data analysis activities into his lessons and invites other science teachers to discuss effective strategies during their weekly department meeting. Together, they develop a shared approach for teaching data interpretation and plan to compare results after a month. Through this process, the teacher not only tailors his instruction to address his students' specific needs but also contributes to a collaborative effort to strengthen data interpretation skills schoolwide.

Strategy 3

Modify instruction to test hypotheses and increase student learning.

SC Teaching Standards: INST.AF.4; PLAN.IP.1; PROF.RT

Once teachers have formed hypotheses about their students' learning needs, they should test these by implementing instructional changes aimed at improving student achievement. These changes may include allocating additional time to challenging topics, restructuring the curriculum to prioritize essential skills, grouping students for targeted support, or experimenting with new teaching strategies for complex concepts. In cases where substantial changes are made, such as reorganizing the curriculum's scope and sequence, teachers might benefit from discussing their approach with colleagues or seeking input from school or district leaders. This collaboration helps ensure that instructional changes are aligned with broader curricular expectations and benefit from collective expertise.

The scale of an instructional change impacts the time required for implementation. Smaller adjustments, like a specific lesson modification, may be completed relatively quickly, whereas larger interventions, such as introducing collaborative learning techniques, may take longer as teachers guide students through new classroom routines. As they test their hypotheses and modify instruction, teachers should take notes on how students respond and the effectiveness of their instructional approach, which can inform future practice and provide insights to share with colleagues.

To evaluate the impact of their interventions, teachers should gather new data on student learning, using classroom-level work or interim assessments to assess progress. By triangulating data from multiple sources, they can judge whether the instructional change led to improvement. Depending on the results, teachers may choose to continue with the new approach in its current form, modify or extend the approach, or try a different approach altogether. Recognizing that some interventions require time to show results, teachers are encouraged to give their efforts and students adequate time to adapt before determining if an intervention is effective.

Example

As an eighth-grade math teacher reviewed recent assessment data, she determined that her students struggled with solving multi-step equations. Based on this finding, she hypothesized that dedicating additional class time to guided practice on this topic would improve her students' understanding. To test this, the teacher restructured her lesson plans to allocate more time to multi-step equations, incorporating small-group activities and peer teaching strategies to reinforce the concept.

As she implemented these changes, the teacher took notes on how students responded to the modified instruction and observed their engagement levels during the activities. After two weeks, she collected new data through a short quiz and reviewed students' homework to assess their progress. She noticed some improvement but also identified that certain students needed further support. She decided to continue the approach while also consulting with a colleague who suggested additional scaffolding techniques. Through this iterative process, the teacher was able to test her hypothesis and collect data that allowed her to refine her approach.

Potential Roadblock 1

Teachers have so much data that they are not sure where they should focus their attention in order to raise student achievement.

Suggested Approach. Teachers can refine the data they need to address a specific issue by asking focused questions and clearly identifying which data will provide the answers. Administrators can support this process by establishing schoolwide goals that clarify the types of data teachers should prioritize and by asking how classroom practices align with these goals. For example, if administrators emphasize improving reading achievement, teachers might focus on data from state, interim, and classroom assessments related to students' reading skills. By triangulating data from multiple sources, teachers can then form hypotheses about instructional adjustments that are likely to enhance student achievement.

Potential Roadblock 2

Some teachers work in a grade level or subject area (such as early elementary and advanced high school grades) or teach certain subjects (such as social studies, music, science, or physical education) for which student achievement data are not readily available.

Suggested Approach. A key aspect of collaborative data use is establishing shared learning goals and expectations across classrooms. District or school administrators can support this by implementing a schoolwide interim assessment aligned with state standards, enabling teachers to compare results across classrooms. Alternatively, teachers can collaborate to create their own interim assessments.

For example, some schools develop writing prompts or other assessments administered schoolwide and scored with a common rubric. While these in-house assessments may not have the same validity as commercially developed tests, they still provide a common measure for teachers to assess students and share results. Likewise, teachers in supplemental subjects like art, music, and physical education can design performance assessments that align with schoolwide goals for student achievement.

Potential Roadblock 3

Some schools or districts encourage staff to use data to identify students scoring just below proficiency on state tests and to focus disproportionate effort on helping them reach proficiency.

Suggested Approach. In some schools, teachers and principals report allocating extra resources to "bubble kids"—students who score just below the proficiency threshold on high-stakes assessments. Take caution with this approach, as results from a single test are inherently imprecise and should always be interpreted alongside other data sources. Focusing too narrowly on students near the proficiency cut-off may result in an uneven distribution of instructional resources, potentially overlooking students who score further from the cut-off but who may have equally significant or greater instructional needs. Rather than prioritizing only those just below proficiency, educators should use data from multiple sources to address the needs of all students, ensuring that resources are allocated to support those with the greatest needs wherever possible.

Potential Roadblock 4

Some district leaders suggest that schools assign students to courses based solely on proficiency levels on the state accountability test.

Suggested Approach. Tests should only be used for the purposes they have been validated for, and most existing assessments were not designed to inform course placement decisions. Furthermore, professional standards for test score use in educational settings emphasize that a single score should not determine high-stakes outcomes for individuals. Instead, educators and administrators should incorporate multiple data sources when assigning students to courses or programs. While proficiency on a state accountability test can signal a student's readiness or need for a particular instructional program, other factors, such as previous performance in related courses, should also be considered. Additionally, placement decisions should be re-evaluated when new data becomes available.

Additional Resources

Using Student Achievement Data to Support Instructional Decision Making (Hamilton et al., 2009)

- **Recommendation 1**: Make data part of an ongoing cycle of instructional improvement.
  - Use formative feedback loops to refine instruction.
- **Recommendation 2**: Teach students to examine their own data and set learning goals.
  - Provide structured goal-setting templates.
  - Incorporate student reflection on progress.
  - Align goals with broader state standards and long-term outcomes.

Instructional Improvement Cycle: A Teacher's Toolkit for Collecting and Analyzing Data on Instructional Strategies (Cherasaro et al., 2015)

This toolkit, developed by Regional Educational Laboratory (REL) Central in collaboration with York Public Schools in Nebraska, provides a process and tools to help teachers use data from their classroom assessments to evaluate promising practices. The toolkit provides teachers with guidance on how to deliberately apply and study one classroom strategy over the course of one unit and systematically document and compare results to consider the effects of a given instructional strategy on student learning.

The Practitioner Data Use Workshop Toolkit (Bocala et al., 2014)

The Practitioner Data Use Workshop Toolkit from REL Northeast & Islands is designed to help practitioners systematically and accurately use data to inform their teaching practice. The toolkit includes an agenda, slide deck, participant workbook, and facilitator's guide and covers the following topics: developing data literacy, engaging in a cycle of inquiry, accessing and analyzing available data, identifying and creating student goals, and using data to make action plans about instructional decisions.

Using Student Achievement Data to Support Instructional Decision Making

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Recommendation 2

Teach students to examine their own data and set learning goals.

Teachers should guide students in regularly using achievement data to track their progress and set personal learning goals. This process, similar to the data use cycle for teachers, can boost motivation by showing attainable goals, highlighting real gains, and giving students control over their success. Teachers can adjust their teaching based on these goals to support student motivation. Students benefit most when they understand learning objectives and receive data in an accessible format, with tools like rubrics to help clarify goals. Data-driven practices, coupled with strategies like revisiting incorrect answers, enhance student learning through formative assessment and feedback.

Strategy 1

Explain expectations and assessment criteria.

SC Teaching Standards: INST.SO.1, INST.SO.4, PLAN.ASSESS.1, PLAN.ASSESS.2

Teachers should clearly communicate expectations to help students interpret their achievement data effectively, outlining specific content knowledge and skills needed, and the goals for lessons, units, and the year. Rubrics play a crucial role in this process by providing clear criteria for assessment, especially for complex tasks like writing essays, delivering speeches, or conducting experiments. Teachers should introduce rubrics at the start of assignments and use them to guide feedback, allowing students to assess sample work to understand the evaluation criteria better. Additionally, teachers should connect classroom learning to state standards by regularly revisiting key concepts throughout the year and helping students track these standards to prepare for accountability tests.

Example

In a seventh-grade English class, the teacher introduces a unit on persuasive writing. On the first day of the unit, the teacher explains the learning objectives and presents a rubric that outlines the assessment criteria for the final essay, including clarity of thesis, strength of arguments, use of evidence, and proper grammar.

To help students understand the rubric, the teacher shares a sample essay and guides the class in evaluating it together using the rubric. They annotate the sample, highlighting areas where the thesis is clear and where the evidence supports the argument, while also noting weaknesses in transitions and grammar. This discussion ensures students grasp how their work will be assessed and provides concrete examples of successful and problematic writing (worked examples; see Teaching Elementary School Students to Be Effective Writers Practice Guide, Recommendation 2b [Graham et al., 2012]).

The teacher further supports understanding by transforming the rubric into a visual flowchart, showing how each criterion connects to the overall grade. This flowchart is displayed prominently in the classroom for reference throughout the unit (visual aids; see Improving Adolescent Literacy Practice Guide, Recommendation 1 [Kamil et al., 2008]).

Midway through the unit, students engage in a self-assessment activity where they use the rubric to evaluate their drafts. They rate their thesis clarity, evidence use, and overall structure on a scale of 1 to 5, predicting how well they think their essay aligns with each rubric criterion. This reflective activity encourages students to identify areas for improvement and adjust their work accordingly (metacognition; see Organizing Instruction and Study to Improve Student Learning Practice Guide, Recommendation 6a [Pashler et al., 2007]).

Throughout the unit, the teacher connects the rubric criteria to state writing standards by emphasizing how becoming proficient in thesis statements, using evidence effectively, and refining transitions are critical not only for the unit's success but also for broader state assessment goals. By explicitly tying classroom learning to these standards, the teacher highlights the real-world relevance of mastering the rubric criteria (see Using Student Achievement Data to Support Instructional Decision Making Practice Guide, Recommendation 2 [Hamilton et al., 2009]).

Strategy 2

Provide feedback to students that is timely, specific, well formatted, and constructive.

SC Teaching Standards: INST.AF.1, INST.AF.4

Providing students with constructive feedback can enhance academic achievement by helping them understand their strengths and weaknesses. Effective feedback explains the reasons behind the grades or scores given to student work and highlights specific areas for improvement. Feedback should be thoughtful, targeted, and designed to guide students toward a clearer understanding of how to progress academically. Characteristics of effective feedback include:

- **Timely** - Feedback should be provided to students within a week of the assignment being collected.
- **Appropriately formatted** - Feedback should be provided in a delivery mode that fits best with the students' age and grade, and the assignment.
- **Specific and constructive** - Feedback should be concrete and provide specific suggestions for improvement.

Example

After grading seventh-grade persuasive essays, the teacher gives each student detailed feedback, directly tied to the rubric they've been using. For one student, the teacher writes, "You've done a great job supporting your points with strong examples! To make your essay even better, let's work on clarifying your thesis. Think about how you can summarize your main idea in one clear sentence at the end of your introduction."

To help students understand the feedback, the teacher shares a sample essay with both a strong and a weak thesis. Together, the class discusses what makes the stronger thesis effective and how the weaker one could be improved. Students then reflect on how these examples relate to their own essays and what they can adjust (scaffolded feedback; see Teaching Elementary School Students to Be Effective Writers Practice Guide, Recommendation 2b [Graham et al., 2012]).

Next, the teacher sets up a peer review session. Students trade essays and use the rubric to highlight one strength and suggest one improvement. This activity not only gives students more feedback but also helps them think critically about writing and how to apply the rubric to real work (peer assessment; see Organizing Instruction and Study to Improve Student Learning Practice Guide, Recommendation 4 [Pashler et al., 2007]).

The teacher wraps up by reminding students how these skills connect to the big picture: "Clear writing is a tool you'll need not just for tests but in so many other parts of life." The teacher points out that improving skills like writing strong arguments and using evidence now will help students succeed in future projects and assessments (see Using Student Achievement Data to Support Instructional Decision Making Practice Guide, Recommendation 1 [Hamilton et al., 2009]).

Strategy 3

Provide tools that help students learn from feedback.

SC Teaching Standards: INST.AF.3, INST.AM.5, PLAN.ASSESS.2

Providing students with assessment data is not enough; they need time, tools, and guidance to analyze and use the feedback effectively. Teachers should dedicate 10–15 minutes of classroom time for students to reflect on feedback, review their performance, and ask questions. During this time, teachers can use tools like templates for listing strengths and weaknesses, reflection worksheets, progress-tracking grids, and goal-setting prompts to help students engage with the feedback.

For instance, after returning a test, a teacher might ask students to identify their strengths and weaknesses, set realistic improvement goals, and plan specific actions to address skill gaps. Students with strong scores might focus on enrichment activities. Tools like error analysis worksheets in math can help students diagnose their mistakes, distinguishing between careless errors and conceptual misunderstandings. This structured reflection process empowers students to take responsibility for their learning and make data-driven improvements.

Example

In a seventh-grade math class, the teacher kicks off a goal-setting activity by handing out test reports and walking students through their results. "Take a look," the teacher says, "and think about one thing you're proud of and one area you want to grow in."

To help with this, the teacher gives students a Goal-Setting Worksheet that breaks the process into simple steps:

- **What I'm Proud Of:** Something I'm doing well (e.g., "I'm great at solving single-variable equations").
- **What I Need to Work On:** An area I want to improve (e.g., "I need to get better at multi-step equations").
- **My Goal:** A clear target (e.g., "I'll get 8 out of 10 multi-step problems right on my next quiz").
- **My Action Plan:** Steps I'll take to get there (e.g., "I'll practice three problems each night and ask for help if I'm stuck").

Students fill out the worksheet, using their test data to choose a goal. One student might write, "I'll work on understanding multi-step equations by practicing a few problems from the homework packet every night." The worksheet helps students feel confident about what to focus on (goal-setting templates; see Using Student Achievement Data to Support Instructional Decision Making Practice Guide, Recommendation 2 [Hamilton et al., 2009]).

Next, the teacher shares a bar graph showing how the class performed overall, with individual scores anonymized. "This shows how we're all doing," the teacher explains. "It's not about comparing yourself to others—it's about seeing where you're doing well and where you can improve." The graph helps students visualize their progress and zero in on their personal focus areas (visual data displays; see Improving Adolescent Literacy Practice Guide, Recommendation 1 [Kamil et al., 2008]).

Each week, the class spends a few minutes updating their worksheets. Students write a quick note about how they're doing, such as, "I'm doing better with multi-step problems, but I still need more practice with fractions." They adjust their action plans as needed, such as adding extra practice on specific concepts (self-monitoring; see Organizing Instruction and Study to Improve Student Learning Practice Guide, Recommendation 6a [Pashler et al., 2007]).

To keep students motivated, the teacher connects their goals to the bigger picture: "The skills you're building now aren't just for math class. They'll help you with algebra next year and even problem solving in science and everyday life." This makes the goals feel more meaningful and worth pursuing (personal relevance; see Improving Adolescent Literacy Practice Guide, Recommendation 4 [Kamil et al., 2008]).

Strategy 4

Use students' data analyses to guide instructional changes.

SC Teaching Standards: INST.AF.4, PLAN.IP.1

Data analysis tools benefit both students and teachers by fostering learning and guiding instruction. Teachers can review students' self-assessments and goals to identify common areas of difficulty and motivational factors. This information allows teachers to tailor instruction effectively, such as organizing small group activities focused on shared goals or conducting whole-class reviews of frequently identified weaknesses. By aligning teaching strategies with student needs, teachers can provide targeted support and enhance learning outcomes.

Example

In a seventh-grade science class, the teacher introduces a Progress-Tracking Chart to help students monitor how they're doing in a unit on ecosystems. "This is your personal tracker," the teacher explains. "It's a way to see how much you're growing!" The chart includes spaces for students to log their quiz scores, mark which topics they found tricky (like food webs or energy flow), and jot down what they'll work on next (progress-tracking tools; see Using Student Achievement Data to Support Instructional Decision Making Practice Guide, Recommendation 2 [Hamilton et al., 2009]).

To make things more exciting, the teacher creates a colorful bar graph showing how the class as a whole is improving over time: "See how we're all getting better together? Now, let's look at how you're doing individually." The visual makes it easier for students to connect their own progress to the bigger picture and celebrate their growth (visual data displays; see Improving Adolescent Literacy Practice Guide, Recommendation 1 [Kamil et al., 2008]).

At the end of the week, students take a few minutes to reflect on their charts. They answer simple prompts like, "What's one thing I learned this week?" or "What can I do better next time?" For instance, a student might write, "I did great on identifying producers and consumers, but I need to study energy pyramids more." These reflections help students stay focused and think about what strategies work best for them (reflection prompts; see Organizing Instruction and Study to Improve Student Learning Practice Guide, Recommendation 6a [Pashler et al., 2007]).

The teacher also connects the activity to the big picture: "These skills aren't just for quizzes. Understanding ecosystems now sets you up for high school science and even real-world problem solving." This helps students see how their progress matters in the long run, keeping them motivated (progress alignment; see Teaching Secondary Students to Write Effectively Practice Guide, Recommendation 1 [Graham et al., 2016]).

Potential Roadblock 1

Students view the feedback they receive as a reflection on their ability rather than an opportunity for focused improvement.

Suggested Approach. Teachers should provide feedback that is clear and focused on helping students improve, emphasizing their performance in relation to specific learning goals rather than making broad statements about their abilities. Encouraging students to set goals can make feedback more meaningful, as students are more likely to see it as valuable when connected to a larger objective they are working toward.

Potential Roadblock 2

Teachers within a school have different approaches to providing feedback to their students.

Suggested Approach. Teachers can enhance their effectiveness by engaging in professional development focused on providing concrete, constructive feedback that helps students learn from their own data. Collaboration with colleagues can foster a shared understanding of formative feedback, including its purpose, timing, and delivery. Inviting students to share their experiences and responses to feedback can further inform and improve instructional practices.

Potential Roadblock 3

Teachers are concerned that they do not have enough instructional time to explain rubrics or help students analyze feedback.

Suggested Approach. Incorporating time to teach students how to analyze feedback and understand assessment tools is vital and should be seamlessly integrated into regular instruction rather than treated as an extra activity. This practice fosters a habit of learning from feedback, encouraging students to become more independent over time. Additionally, it positions students as active participants in a school culture that values data-driven learning.

Additional Resources

Using Student Achievement Data to Support Instructional Decision Making (Hamilton et al., 2009)

- **Recommendation 1**: Make data part of an ongoing cycle of instructional improvement.
  - Use formative feedback loops to refine instruction.
- **Recommendation 2**: Teach students to examine their own data and set learning goals.
  - Provide structured goal-setting templates.
  - Incorporate student reflection on progress.
  - Align goals with broader state standards and long-term outcomes.

Teaching Elementary School Students to Be Effective Writers (Graham et al., 2012)

- **Recommendation 2b**: Teach students to use the writing process for a variety of purposes.
  - Use scaffolded feedback, such as annotated examples.
  - Incorporate gradual release strategies to support writing independence.

Teaching Secondary Students to Write Effectively (Graham et al., 2016)

- **Recommendation 1**: Explicitly teach appropriate writing strategies using a Model-Practice-Reflect instructional cycle.
  - Provide worked examples to illustrate writing criteria.
- **Recommendation 3**: Use assessments of student writing to inform instruction and feedback.
  - Provide timely, specific, and actionable feedback tied to rubrics.

Organizing Instruction and Study to Improve Student Learning (Pashler et al., 2007)

- **Recommendation 4**: Help students build explanations by asking and answering deep questions.
  - Use reflection prompts to encourage metacognitive thinking.
- **Recommendation 6a**: Teach students how to use delayed judgment of learning techniques to identify concepts that need further study.
  - Encourage students to self-monitor and adjust goals based on progress tracking.

Improving Adolescent Literacy: Effective Classroom and Intervention Practices (Kamil et al., 2008)

- **Recommendation 1**: Provide explicit vocabulary instruction.
  - Use visual data displays to reinforce comprehension and connections.
- **Recommendation 4**: Increase student motivation and engagement in literacy learning.
  - Tie learning goals to personal interests and long-term aspirations.

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This document provides a summary of recommendations from the WWC Using Student Achievement Data to Support Instructional Decision Making Practice Guide (Hamilton et al., 2009). *Establish a clear vision for schoolwide data use* is a school-level recommendation that works in conjunction with the other recommendations in this series.

Recommendation 3

Establish a clear vision for schoolwide data use.

To foster effective data-driven decision making, schools must build a strong culture of data use, characterized by collaboration across grade levels and subjects to diagnose issues and improve practices. The success of this culture depends on factors like planning, leadership, implementation, and attitudes. Schools should form a data team to ensure data activities are collaboratively developed and aligned with goals, and create a clear, schoolwide data use plan. It is recommended that school data teams and leaders develop a common language and provide ongoing support for school staff around data use.

Strategy 1

Establish a schoolwide data team that sets the tone for ongoing data use.

SC Principal Standards: PADEPP Standard 1 (Vision); Standard 2 (Instructional leadership); Standard 3 (Effective management); Standard 8 (Staff development)

Schoolwide data use begins with the creation of a data team, which will guide the school's vision for effective and sustainable data use. This team should include a diverse mix of stakeholders, such as administrators, teachers from various subjects and grade levels, classroom support professionals, and possibly a district-level staff member with expertise in research or evaluation. The leader should select individuals who either have experience or interest in data analysis and interpretation, as well as strong leadership skills to motivate others. The role of the data team is to act as advisors on data use, representing the entire school community to ensure collaborative decision making. Data team members are not responsible for enforcing data use or managing related activities but instead focus on clarifying the school's vision for data use, modeling effective practices, and encouraging staff to integrate data into their instructional decisions.

Example

A middle school leader decides to form a data team to strengthen the use of data in guiding instruction and improving student outcomes. Recognizing the importance of a diverse team, the leader carefully selects members to ensure a broad range of perspectives. The first choice is the assistant principal, who has a strong understanding of school operations and can offer insight into aligning data use with schoolwide goals. Next, the leader reaches out to two teachers—one from the math department and another from the English department—both of whom have shown an interest in analyzing student progress during previous staff meetings. The leader also invites a reading coach known for her enthusiasm for using assessment data to target reading interventions. Finally, the leader seeks out a district-level staff member who specializes in student assessment and data analysis. This member will provide a broader perspective on districtwide trends and help the team align the school's efforts with district priorities.

After inviting these members to join the data team, the leader emphasizes their role as advisors and collaborative decision makers. The leader makes it clear that their primary responsibility is to help clarify the school's vision for data use and to support fellow teachers in integrating data into their instructional decisions and practices.

Strategy 2

Define critical teaching and learning concepts.

SC Principal Standards: PADEPP Standard 1 (Vision); Standard 2 (Instructional leadership)

One of the first tasks of the school data team is to establish a shared vocabulary for key concepts related to teaching, learning, and data use. By aligning definitions, the data team aims to reduce misunderstandings and conflicting assumptions, fostering a more cohesive and effective approach to using data for school improvement. Key terms to consider defining include:

- Data
- Evidence
- Learning
- Achievement
- Progress

Example

As the newly formed middle school data team begins meeting regularly, the leader facilitates discussions where team members share their perspectives on what terms like "data" and "evidence" mean to them.

One teacher initially suggests that "data" should primarily refer to standardized test scores, as these are often used to measure student performance. However, the reading coach emphasizes the importance of considering other forms of data, such as classroom observations, attendance records, and student feedback, to get a more holistic view of each student's progress. After some discussion, the team agrees that "data" should encompass all available information that helps understand a student's learning experience.

Through this discussion, the team recognizes the importance of having a shared understanding of several key terms. The data team decides to create a glossary of terms, which they share with the entire school staff during a professional development session. They encourage teachers to refer to this shared vocabulary during meetings and discussions about student progress. As a result, the school staff is better able to communicate clearly about data and use it effectively in decision making, minimizing misunderstandings and fostering a more unified approach to improving student outcomes.

Strategy 3

Develop a written plan that articulates activities, roles, and responsibilities.

SC Principal Standards: PADEPP Standard 1 (Vision); Standard 7 (Interpersonal skills); Standard 8 (Staff development)

It is recommended that the data team, with input from the entire school staff, develop a detailed plan for using data to support school-level goals for improving student achievement. The team should begin by revisiting existing school goals to ensure they are attainable, measurable, and relevant to the school's specific context. If existing goals don't meet the criteria, the team may create new short- and medium-term goals that do.

The plan should outline specific actions for using data in instructional decisions, assign responsibilities to staff members, set timelines, and link each action to long-term goals. The data team should revisit and revise this plan annually, using new data to adjust strategies as needed, creating a continuous cycle of improvement and fostering a culture of data-based decision making throughout the school.

Figure 1. Plan for using data to support school-level goals (Hamilton et al., 2009)

Schoolwide Goal: Increase percentage of students reading on grade level 5 percentage points per year, to reach 75 percent in five years			
Action	**Path to Goal**	**Team Member**	**Timeline**
Plan and facilitate monthly grades 4–6 team meetings to review Ms. Sanders's data displays and share best practices in mini-lessons co-planned by Mr. Johnson.	• Focus on areas of greatest student need • Calibrate and elevate expectations among teachers • Streamline instructional practices • Share practices that work • Encourage vertical alignment between grades	Mike Thompson, grades 4–6 team leader	Hold first meeting by October 10; second by November 15
Plan and facilitate monthly grades 1–3 team meetings to review Ms. Sanders's data displays and share best practices in mini-lessons co-planned by Mr. Johnson.		Beth Miller, grades 1–3 team leader	
Prepare well-chosen data graphs on PowerPoint (state or interim data updates) for monthly grade-level team meetings.	• Help teachers gain facility in using data • Focus teachers' attention and inquiry on areas of particular strengths and weaknesses in students' reading skills	Erin Sanders, data facilitator	Carry out monthly; distribute examples at November data team meeting
Have teachers choose their favorite reading instructional strategy and prepare sample lessons and evidence of student work. Schedule teachers to present these during part of their grade-level team meetings.	• Share and standardize best practices among classrooms • Encourage culture of instructional improvement • Reinforce evidence-based practice	Lionel Johnson, reading coach	Bring schedule to November data team meeting; hold first session by October 10.
Register and prepare data team for 4-day offsite workshop on interpreting assessment data, creating data displays, and helping teachers use data daily.	• Increase ability of data team to understand and use data • Develop capacity for distributing leadership within the school	Samantha Roberts, assistant principal	October 15

Strategy 4

Provide ongoing data leadership.

SC Principal Standards: PADEPP Standard 7 (Interpersonal skills); Standard 8 (Staff development)

Once the data plan has been developed and shared, the data team should provide ongoing guidance to school staff to build their capacity for using data effectively. Initially, data team members regularly engage with staff, serving as data facilitators through individual or small group meetings to explain the school's approach to data use. Team members offer resources like professional development, access to technology, and modeling data use strategies. Data team members also participate in grade- and subject-level meetings to ensure collaborative time is used effectively when analyzing data. As staff become more comfortable with data, the need for intensive guidance decreases. The data team meets monthly to monitor the progress of the data plan, share successes and challenges, and plan next steps. This approach fosters a culture of distributed leadership, ensuring that the responsibility for data use is shared across the school rather than concentrated on a single individual, helping the entire school community advance toward its goals.

Example

To ensure the school data plan is implemented, the middle school data team schedules a series of small-group workshops where teachers learn to analyze student assessment data, set instructional goals, and track progress over time. The data team also makes sure teachers have access to the necessary tools and training, such as providing tutorials on how to use the school's online data management system. They compile a list of relevant professional development opportunities and share it with staff. The data team members also join grade-level meetings or PLCs to ensure that time for collaboration is spent effectively. For example, during a fourth-grade team meeting, a data team member helps teachers analyze math quiz results, suggesting strategies to adjust instruction based on the data. Over time, as teachers grow more confident in analyzing and using data on their own, the data team shifts to a less hands-on role, focusing on addressing specific questions and refining strategies rather than offering basic training. Throughout the school year, the data team meets monthly to review the implementation of the data plan, discuss successes and challenges, and adjust the plan as needed.

Potential Roadblock 1

School staff do not have time to develop an additional plan for how to use data.

Suggested Approach. To alleviate the pressure of creating a new plan, the plan for data use could be incorporated into an existing school improvement plan.

Potential Roadblock 2

No one is qualified (or wants) to be on the data team.

Suggested Approach. Consider the strengths and leadership skills of individuals in your school; many have related training and skills that will make them strong team members. For example, new teachers, or those who recently completed continuing education programs, may have applicable data knowledge if their programs provided training on the use of data to make instructional decisions. Similarly, some teachers and staff may be able to provide enthusiasm and leadership that inspire others to support the data use process. Once qualified and interested staff are identified, consider encouraging participation in the data team by offering a small stipend from the principal's discretionary funds.

Potential Roadblock 3

The few data-savvy staff at the school are overwhelmed by questions and requests for assistance.

Suggested Approach. It is important for leaders to protect people's time by clearly defining roles and responsibilities in enforceable job descriptions. Leaders also can encourage all members of the data team to train other educators to use and interpret data. Phasing data use into the entire school can help prevent staff burnout, deepen staff data literacy, and encourage schoolwide support and implementation of the data-based decision-making process.

Potential Roadblock 4

The district does not have research and development staff to participate in the school-level data team.

Suggested Approach. The size of a district may determine if research and development staff are present, or if there are enough research and development staff to participate in school-level data teams. If district staff cannot participate in school level teams, however, the leader should ensure that any district-level message about data use is accurately presented to data team members.

Additional Resources

Supporting a Culture of Data Literacy and Use to Improve Instructional Quality (Regional Educational Laboratory Pacific, 2023)

This fact sheet provides educators and school/system leaders with some key considerations for developing an effective culture of data use that can help improve instruction and student support services. Developed to support a REL Pacific partnership project in the Commonwealth of the Northern Mariana Islands, the information is broadly applicable to schools and districts across the Pacific Region and U.S. states.

Data Use in the Continuous Improvement Cycle Training (Frederking et al., 2021)

In this training series, REL Midwest worked with afterschool mentors and educational support staff at Change Inc. in St. Paul, Minnesota, to improve their data literacy skills in the context of continuous improvement and equity. The slide decks are available online.

Wisconsin Technical College System Research Methods Training (Regional Educational Laboratory Midwest, 2019)

REL Midwest provided two training sessions for the Wisconsin Technical College System to build participants' data literacy, knowledge of research methods, and capacity to use data and research to improve their programs. The slide decks and handouts are available online.

Using Student Achievement Data to Support Instructional Decision Making

This document provides a summary of recommendations from the WWC Using Student Achievement Data to Support Instructional Decision Making Practice Guide (Hamilton et al., 2009). *Provide supports that foster a data-driven culture within the school* is a school-level recommendation that works in conjunction with the other recommendations in this series.

Recommendation 4

Provide supports that foster a data-driven culture within the school.

Schools and districts can promote data use by creating and maintaining a supportive culture for staff. To do so, school and district leaders should ensure that staff understand their roles in using data, have the skills to use data effectively, and receive leadership support. Schools and districts should invest in professional development, collaborative time, and possibly additional resources like technology and specialized personnel.

Strategy 1

Designate a school-based facilitator who meets with teacher teams to discuss data.

SC Principal Standards: PADEPP Standard 2 (Instructional leadership); Standard 3 (Effective management); Standard 4 (Climate); Standard 8 (Staff development)

Leaders can enhance data-driven instruction by assigning data facilitators to support teachers in using data systematically. Depending on the resources available, data facilitators may be full-time coaches, district staff serving multiple schools, or dedicated school-level staff assisting all teachers in data-related tasks. The data facilitator role requires data analysis expertise and the ability to train and encourage other educators in the data use process. Data facilitators support data analysis and interpretation while also building the capacity of the data teams to analyze data independently, reducing over-reliance on facilitators and fostering overall data literacy within the school.

Data facilitators should meet at least monthly with teacher teams to model data interpretation, provide data reports and visualizations, link data use to the school's goals, and train and support staff to use data to improve instructional practice and student achievement. As teachers become more data literate, the need for intensive support from facilitators will decrease, contributing to a sustainable culture of data use across the school.

Example

Recognizing the need to improve the school's use of student data, a middle school principal designated a math specialist as the school's data facilitator. Drawing from the Practitioner Data Use Toolkit (Bocala et al., 2014) and the Toolkit for a Workshop on Building a Culture of Data Use (Gerzon & Guckenburg, 2015) the facilitator plays a pivotal role in guiding teachers to integrate data into their instructional practices. Both toolkits, grounded in research-based best practices, provide frameworks, tools, and protocols for building a sustainable, schoolwide culture of data literacy. In monthly grade-level meetings, the facilitator uses visualizations and guided inquiry processes to help teachers analyze student data, identify instructional challenges, and develop targeted interventions. During a recent seventh-grade meeting, the facilitator modeled the inquiry cycle from the Practitioner Data Use Toolkit, helping teachers dissect assessment results and hypothesize root causes for gaps in multi-step problem solving. Simultaneously, the facilitator applied

the Toolkit for a Workshop on Building a Culture of Data Use to set clear expectations for data practices and foster collaborative dialogue around instructional improvement.

As the facilitator's efforts take root, the toolkits provide the foundation for differentiated approaches tailored to staff roles and needs. The Practitioner Data Use Toolkit supports classroom teachers in mastering data analysis and applying insights directly to lesson planning, while the Toolkit for a Workshop on Building a Culture of Data Use equips department heads and leadership teams with strategies for sustaining systemic, data-driven practices. This structured approach ensures that professional development meets staff where they are, evolving over time to reflect growing capacity and confidence.

Strategy 2

Dedicate structured time for staff collaboration.

SC Principal Standards: PADEPP Standard 2 (Instructional leadership); Standard 3 (Effective management); Standard 4 (Climate); Standard 8 (Staff development)

Encouraging teachers to collaboratively analyze and interpret data fosters a school culture where data use is central to improving student achievement. Setting aside structured time multiple times a week, when possible, allows teachers to examine achievement patterns across grade levels, departments, or schools and make data-driven adjustments to their instruction. This time also serves as an opportunity for professional development on effective data use and to build data literacy. Collaborative meetings are typically conducted in small, grade-level or subject-area teams, sometimes with a data facilitator or other support staff.

The data meetings should include the following elements:

- **Preparation**. Set an agenda that focuses on a specific, timely, and malleable topic or improvement need.
- **Analysis**. Use data to engage in inquiry cycles and generate hypotheses that educators can test.
- **Take action**. At the end of each data meeting, ensure that team members are prepared to modify their instruction and collect data to monitor implementation and progress towards improvement goals

Example

A middle school principal established a dedicated hour twice a week for teachers to collaborate on analyzing student data, guided by the principles of the Practitioner Data Use Toolkit (Bocala et al., 2014). This toolkit, developed to support data-driven decision making in schools, provides a structured framework for inquiry and actionable steps to improve student outcomes.

Each grade-level team gathers with a clear agenda set in advance, focusing on specific areas for improvement based on recent assessments or behavior data. During a recent sixth-grade team meeting, teachers examined data from a math unit test that revealed a pattern of students struggling with multi-step problem solving.

Guided by the agenda and the inquiry cycle framework outlined in the Practitioner Data Use Toolkit, teachers started by seeking information to refine their focus and generating guiding questions about the observed challenges. They analyzed item-level data to identify trends, hypothesizing that students might benefit from more structured practice with problem-solving strategies. Using a collaborative protocol featured in the toolkit, the team identified potential root causes, including insufficient scaffolding in lessons and the need for clearer modeling of problem-solving steps.

Next, teachers outlined SMART (Specific, Measurable, Achievable, Relevant, Time-bound) goals, as recommended in the toolkit, to guide their instructional adjustments. They discussed strategies such as incorporating scaffolded exercises, peer learning activities, and explicit step-by-step modeling. Each teacher committed to implementing one of these strategies in their classes and agreed to track student progress on similar problems over the next two weeks.

Before concluding, the team planned to reconvene with updated data to evaluate the impact of these strategies, following the toolkit's emphasis on iterative evaluation. This structured collaboration not only promoted data-driven instructional changes but also strengthened teachers' confidence in analyzing and acting on data to enhance student learning.

Strategy 3

Provide targeted professional development regularly.

SC Principal Standards: PADEPP Standard 2 (Instructional leadership); Standard 3 (Effective management); Standard 4 (Climate); Standard 8 (Staff development)

To support effective data use, schools and districts should provide ongoing professional development for administrators, principals, teachers, and support staff, building data literacy and data use skills aligned with school goals. These data use skills range from data entry and analysis to leadership, and vary by professional roles, content area and curriculum, experience with data analysis, and comfort with supporting technology. Professional development should focus on practical application of data and how it can support instruction, assessment, and planning. Staff may also need training and support in the use of the data system, although technology focused training should be small doses to prevent staff becoming overwhelmed. Table 1 provides an overview of potential professional development needs for staff based on their role.

Educators may require ongoing technical assistance and training, especially when data systems are updated or enhanced. Professional development can include online learning modules for cost-effective, flexible training that accommodates different technology comfort levels. Continuous professional development builds a strong data culture across the school, ensuring that all staff—from teachers to administrators—are equipped to use data to improve student achievement.

Table 1. Suggested professional development and training (Hamilton et al., 2009)

Topic	Principals	Teachers	Other Staff*	IT Staff
Avoiding common data analysis and interpretation mistakes	X	X	X	
Data system use—avoiding common mistakes	X	X	X	
Data system use—entering data			X	X
Data system use—maintenance and troubleshooting				X
Data system use—reporting capabilities	X	X	X	
Data transparency and safety	X	X	X	X
Encouraging staff leadership	X			
Fostering a culture of data-based decision making	X	X		
Identifying needs for staff professional development opportunities	X	X		
Interpreting data in an educational context	X	X	X	
Organizing time for collaborative data discussions	X	X	X	
Understanding and using the cycle of instructional improvement	X	X	X	
Using data to answer questions about student achievement	X	X	X	
Using data to modify teaching and learning practices	X	X	X	

*Other staff can include data facilitators, classroom support specialists, administrative assistants, and counselors.

Example

A middle school principal recognized the need for staff to deepen their data literacy and organized a series of targeted professional development workshops throughout the school year, guided by the Toolkit for a Workshop on Building a Culture of Data Use (Gerzon & Guckenburg, 2015). These workshops were tailored to different staff roles and levels of experience with data, reflecting the toolkit's emphasis on differentiated professional development and building a shared culture of data use.

Classroom teachers participated in monthly sessions aligned with the toolkit's framework for making meaning from data, focusing on using student achievement data to inform instructional planning. In these sessions, teachers engaged in hands-on exercises such as analyzing disaggregated assessment results and identifying root causes of challenges using tools like a fishbone diagram. The sessions were structured around the toolkit's inquiry cycle, which emphasizes steps such as seeking information, analyzing data collaboratively, and taking action through informed instructional changes.

Meanwhile, department heads attended sessions designed to equip them with leadership skills outlined in the toolkit's leading a culture of data use element. These workshops focused on strategies for facilitating team data discussions, establishing clear expectations for data use, and modeling the inquiry process during team meetings. Guided by examples from the toolkit's vignettes, department heads learned to set data-informed goals and support their teams in implementing actionable strategies.

To address varying levels of comfort with technology, the school leveraged the toolkit's guidance on ensuring access to data systems by providing optional online modules that introduced staff to the school's new data management system. These modules allowed staff to explore the system's features at their own pace, complemented by refresher sessions after system updates. These resources underscored the importance of accessible, usable data systems to sustain a culture of data use.

By integrating the toolkit's five essential elements—leadership, professional development, access to data, collaboration, and clear expectations—the professional development series fostered a schoolwide culture where data use became a routine part of instructional improvement. Staff at all levels gained the skills and confidence needed to effectively analyze and act on data, ensuring continuous improvement in teaching and learning.

Potential Roadblock 1

It is difficult to locate professional development that is specific to the needs of the school.

Suggested Approach. With the assistance of the data team and data facilitators, schools should determine their needs and discuss these with internal or external trainers and professional development providers. If training and professional development cannot be tailored to the needs of the school or district, schools should consider using a "train-the-trainers" model. Schools should identify trainers, such as professional development staff within the district office, who can receive broad training on a particular product or issue related to data-based decision making for the school's data system. These staff can then adapt the training to fit the needs of the school or district and train other educators and staff members as necessary.

Potential Roadblock 2

Resources dedicated to creating staff capacity to use data often are shifted to other school priorities.

Suggested Approach. Recognize that data-based decision making is not an isolated issue, but rather one that benefits all subject areas and grades. Principals and district-level administrators should secure and distribute the financial resources necessary to match educators' needs for interpreting and interacting with data. Dedicating resources to data literacy will help support and enforce a culture of data use, enabling educators to better help their students meet defined learning goals across all content areas.

Additional Resources

Toolkit for a Workshop on Building a Culture of Data Use (Gerzon & Guckenburg, 2015)

> The Toolkit for a Workshop on Building a Culture of Data Use helps school and district teams apply research to practice as they establish and support a culture of data use in their educational setting. The field-tested workshop toolkit guides teams through a set of structured activities to develop an understanding of data use research in schools and to analyze examples from practice. The conceptual framework of the toolkit draws on five research-based elements known to support an effective culture of data use. Supporting materials—a facilitator's guide and agenda, a slide deck, and participant handouts—provide workshop facilitators with all the necessary materials to lead this process in their own setting.

The Practitioner Data Use Workshop Toolkit (Bocala et al., 2014)

> The Practitioner Data Use Workshop Toolkit is designed to help practitioners systematically and accurately use data to inform their teaching practice. The toolkit includes an agenda, slide deck, participant workbook, and facilitator's guide. It covers the following topics: developing data literacy, engaging in a cycle of inquiry, accessing and analyzing available data, identifying and creating student goals, and using data to make action plans about instructional decisions.

Using Student Achievement Data to Support Instructional Decision Making

Recommendation 1
Make data part of an ongoing cycle of instructional improvement.

Recommendation 2
Teach students to examine their own data and set learning goals.

Recommendation 3
Establish a clear vision for schoolwide data use.

Recommendation 4
Provide support that foster a data-driven culture within the school.

Recommendation 5
Develop and maintain a districtwide data system.

This document provides a summary of recommendations from the WWC Using Student Achievement Data to Support Instructional Decision Making Practice Guide (Hamilton et al., 2009). *Develop and maintain a districtwide data system* is a district-level recommendation that works in conjunction with the other recommendations in this series.

Recommendation 5

Develop and maintain a districtwide data system.

Districts should establish comprehensive, integrated data systems that provide timely access to essential data for decision makers. To ensure the data system meets the needs of users throughout the district, various stakeholders should be included in the system design. Additionally, districts should secure financial and human resources to maintain safeguards, ensuring data is timely, relevant, and useful for educators.

Strategy 1

Involve a variety of stakeholders in selecting a data system.

SC Principal Standards: PADEPP Standard 1 (Vision), Standard 3 (Effective Management), Standard 8 (Staff Development)

District leaders should establish a district data-system advisory council with representatives from key stakeholder groups who understand data use for instructional decision making and possess strong leadership, time management, and communication skills. The council's responsibilities may include:

- overseeing the district's commitment to data quality and use,
- guiding the system's requirements and design,
- managing system development, and
- acting as a liaison with stakeholders.

This council should meet at least bimonthly to address system improvements, user concerns, and professional development needs. Between meetings, council members gather feedback from stakeholders on data use, system challenges, and potential future uses. To support efficient and timely decision making, it is helpful to designate a district-employed project manager to oversee system development and council goals.

Example

Leaders at Midtown School District established a Data Advisory Council to guide the selection of a districtwide data system, incorporating strategies from the Practitioner Data Use Toolkit (Bocala et al., 2014) and the Toolkit for a Workshop on Building a Culture of Data Use (Gerzon & Guckenburg, 2015).

Following the Culture of Data Use Toolkit's emphasis on fostering collaboration and shared vision, the council included teachers, principals, IT staff, and instructional coaches, ensuring diverse perspectives were represented in the decision-making process. Council members brought feedback from their respective stakeholder groups, such as teachers highlighting the need for streamlined access to performance data and principals emphasizing comprehensive reporting capabilities.

Using the Practitioner Data Use Toolkit, the council implemented structured inquiry protocols to systematically evaluate stakeholder needs. For instance, they conducted focus groups and surveys to identify user priorities, such as the need for real-time data updates and user-friendly interfaces. This feedback was mapped against system requirements to ensure alignment with instructional goals and ease of use. To facilitate transparent decision making, council members also used templates from the Culture of Data Use Toolkit to document their findings and communicate progress with all stakeholders.

By involving a broad range of voices and following a research-based approach, the council ensured the selected system reflected the needs of its users. This collaborative process, guided by both toolkits, laid the foundation for a system that would effectively support data-driven instructional improvement across the district.

Strategy 2

Clearly articulate system requirements relative to user needs.

SC Principal Standards: PADEPP Standard 1 (Vision), Standard 3 (Effective Management)

Once established, the data-system advisory council should collaborate with representatives from each school's data team to ensure the system's requirements align with the educational vision and user needs. Key considerations include:

- Accessibility and data security
- Bandwidth requirements
- Consistent student and teacher IDs
- Alignment with and consolidation of legacy systems (what SI already in place)
- Cost (both initial and maintenance)
- Data storage
- Data quality, accuracy, and timeline
- Hosting needs
- Interoperability (seamless communication and data exchange with other systems)
- Professional development needs
- Routines and safeguards to prevent compromising data quality

The council should create a publicly available document detailing system capabilities and review requirements annually to ensure the system meets evolving needs.

Example

The newly created Data Advisory Council in Midtown School District collaborates with each school's data team to identify and address specific system requirements, guided by the Practitioner Data Use Toolkit (Bocala et al., 2014) and the Toolkit for a Workshop on Building a Culture of Data Use (Gerzon & Guckenburg, 2015). Recognizing that different roles require varied access levels, the council uses the Culture of Data Use Toolkit's emphasis on equitable data access to establish a clear permissions structure. Teachers are granted access to their students' data, while principals can view schoolwide reports, ensuring each role has the tools needed to make informed decisions.

Using the Practitioner Data Use Toolkit's protocols for system evaluation, the council investigates challenges such as limited bandwidth, which disrupts data access during peak times. IT staff conduct infrastructure assessments and recommend targeted upgrades to ensure reliable performance. Additionally, the council consolidates legacy systems into a single platform, informed by the toolkit's guidance on aligning data systems to user needs. This integration allows teachers to access attendance, discipline, and assessment data seamlessly, streamlining their workflows and enhancing efficiency.

To maintain accuracy and build user trust, the council implements strict protocols for data entry, permitting only certified data administrators to update or edit records. Training sessions for teachers, designed with tools from the Culture of Data Use Toolkit, focus on generating custom reports and utilizing data effectively in their classrooms. These measures ensure the system meets specific user needs while supporting accurate, efficient, and secure data use across the district.

Strategy 3

Determine whether to build or buy the data system.

SC Principal Standards: PADEPP Standard 3 (Effective Management)

The advisory council must assess stakeholder needs and district resources to recommend whether to buy a vendor-provided data system or build one internally. Both options may involve hidden costs, such as additional time to create a custom system or purchasing add-ons to ensure a pre-built system meets specific requirements (Table 1).

Table 1. Considerations for built and purchased data systems

Considerations	Built Systems	Purchased Systems
Level of Control	Building a data system allows districts to have more control over how they customize software and make repairs. Districts should be sure they have staff to fill the roles of technical project manager, business analyst, database administrator, quality assurance manager, and developer.	Prepackaged data system software can be challenging to customize and repair. However, vendors typically provide skilled technical consultants to create solutions and deploy modifications.
Cost	An internally developed system may present lower initial costs. However, districts should take into account long-range costs, including the longer time it takes to develop, test, and implement a built system than to purchase one. Built systems may, therefore, be more costly.	Purchased systems typically involve an up-front cost that may not be recouped if the district changes systems or needs to purchase additional add-ons for customization. However, vendors often host the data externally, which could be a cost savings.

Considerations	Built Systems	Purchased Systems
Hardware and Software Needs	Internally hosted data systems require hardware and software to be purchased, maintained, and continuously supported by skilled technical staff.	Vendors of prepackaged systems typically offer options of additional hardware and software, as well as around-the-clock maintenance and support.
Training	Internal staff can develop and deliver training and technical assistance about the data system that is targeted to the district's context and needs.	Professional development and related technology trainings for organization staff are often provided by the vendor; sometimes a train-the-trainer approach is implemented.
Efficiency	District personnel often "reinvent the wheel," learning lessons that have already been addressed by other districts or commercial vendors.	Vendors bring an economy of scale, having worked with numerous other districts on similar problems.

Example

The Midtown School District Data Advisory Council evaluates whether to build a custom data system or purchase a pre-made one. Following the Toolkit for a Workshop on Building a Culture of Data Use's (Gerzon & Guckenburg, 2015) emphasis on stakeholder collaboration, the council consults teachers, administrators, and IT staff to identify critical needs, such as tracking student progress across multiple schools and generating customizable reports. Using protocols from the toolkit, the council ensures that diverse voices are included in the evaluation process, fostering buy-in and aligning the system with user priorities.

To structure their decision making, the council applies the inquiry cycle from the Practitioner Data Use Toolkit (Bocala et al., 2014), systematically weighing the pros and cons of each option. For example, they assess the district's limited budget and IT capacity against the time and expertise required to build a custom system. Additionally, the toolkit's focus on aligning data systems with instructional goals informs the council's decision to prioritize a vendor-provided system that meets most requirements and supports add-ons for custom reporting features.

The council also uses tools from the Culture of Data Use Toolkit to calculate long-term costs, including ongoing maintenance and professional development for staff. By integrating these frameworks into their process, the council ensures their recommendation to purchase the vendor system with add-ons is not only cost effective but also aligned with the district's strategic priorities for data-driven decision making. This structured approach, grounded in research-based practices, positions the council to implement a data system that meets immediate needs while allowing for future adaptability.

Strategy 4

Plan and stage the implementation of the data system.

SC Principal Standards: PADEPP Standard 3 (Effective Management), Standard 8 (Staff Development)

The council's implementation plan should outline key factors for the data system's success, including maintenance, enhancement needs, and a structured rollout process. Implementation should involve staged rollouts or pilot tests to gradually introduce the system, allowing staff to adapt and provide feedback for adjustments. The rollout should span an academic year with specific timelines for training, maintenance, and support, accounting for potential delays in data preparation. Professional development is essential, tailored to staff roles, technological skills, and content areas, and should cover system security, functionality, and instructional integration. Ongoing support and periodic training will be necessary to help staff effectively use and adapt to system updates and improvements.

Example

The Midtown School District's Data Advisory Council develops a detailed implementation plan for its new data system, drawing on strategies from the Practitioner Data Use Toolkit (Bocala et al., 2014) and the Toolkit for a Workshop on Building a Culture of Data Use (Gerzon & Guckenburg, 2015). Following the Culture of Data Use Toolkit's emphasis on strategic leadership and collaboration, the council outlines a staged rollout process to ensure the system is adopted smoothly and effectively across the district. They begin with a pilot test in three schools, allowing teachers and administrators to provide feedback on usability and technical functionality before districtwide deployment. This phased approach reflects the toolkits' guidance on iterative improvement and stakeholder engagement during implementation.

To address the diverse needs of users, the council aligns professional development with the Practitioner Data Use Toolkit's focus on capacity building. Teachers receive training on integrating data into lesson planning and monitoring student progress, while administrators participate in sessions on using data to inform schoolwide decisions. These training modules include hands-on activities and resources designed to help staff navigate the system and link data use to instructional goals. The council also incorporates feedback loops from the pilot phase, using structured protocols from the toolkits to refine training content and system features before the broader rollout.

Throughout the process, the council leverages the toolkits to address potential roadblocks, such as ensuring the system supports educational goals rather than becoming a purely technical solution. By tying the implementation plan to the district's instructional priorities and emphasizing ongoing professional development, the council creates a system that not only meets technical requirements but also enhances the district's ability to use data for continuous improvement. This approach builds on the collaborative foundation established in earlier strategies, ensuring the system supports both immediate and long-term goals for data-driven decision making.

Potential Roadblock 1

The data system's technological components are challenging for staff who do not consider themselves technologically savvy or are skeptical of using new technologies.

Suggested Approach. The data system should not be implemented and used without accompanying training and support services. When the district is preparing to roll out its data system, the council should ensure that appropriate professional development and technology training sessions are available for a variety of skill levels (see Recommendation 4 for more details). In this way, all stakeholders have the opportunity to learn about the data system and develop the skills necessary to utilize the system. District resources should be allocated to ensure that principals and data facilitators can support teachers' use of data within the school building, and a mechanism for providing assistance on an as-needed basis (e.g., a technology help desk) should be in place as soon as educators start using the system

Potential Roadblock 2

The implementation plan contains many technological requirements, but little information on how the system will be used.

Suggested Approach. Before purchasing or developing a data system, ensure that the implementation plan addresses system requirements as they relate to the teaching and learning goals of the district. Be very careful that educational goals are front and center in this plan—the district advisory council should never put technological requirements and considerations for a system before the educational goals the system supports. If the plan clearly articulates how the system relates to learning goals, users will better understand how the system will be used and why that use will support student achievement.

Potential Roadblock 3

A data system seems like a financial luxury to many individuals in the district.

Suggested Approach. For districts that prioritize the use of student data to meet educational improvement goals, a data system must equally be a priority. Ensure that the district's plan describes how a data system supports these goals in a way that clearly explains and illustrates the necessity of the system, in order to foster support for it.

Additional Resources

Toolkit for a Workshop on Building a Culture of Data Use (Gerzon & Guckenburg, 2015)

This toolkit helps school and district teams apply research to practice as they establish and support a culture of data use in their educational setting. The field-tested workshop toolkit guides teams through a set of structured activities to develop an understanding of data use research in schools and to analyze examples from practice. The conceptual framework of the toolkit draws on five research-based elements known to support an effective culture of data use, and supporting materials—a facilitator's guide and agenda, a slide deck, and participant handouts—provide workshop facilitators with all the necessary materials to lead this process in their own setting.

The Practitioner Data Use Workshop Toolkit (Bocala et al., 2014)

This toolkit is designed to help practitioners systematically and accurately use data to inform their teaching practice. It includes an agenda, slide deck, participant workbook, and facilitator's guide and covers the following topics: developing data literacy, engaging in a cycle of inquiry, accessing and analyzing available data, identifying and creating student goals, and using data to make action plans about instructional decisions.

References

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