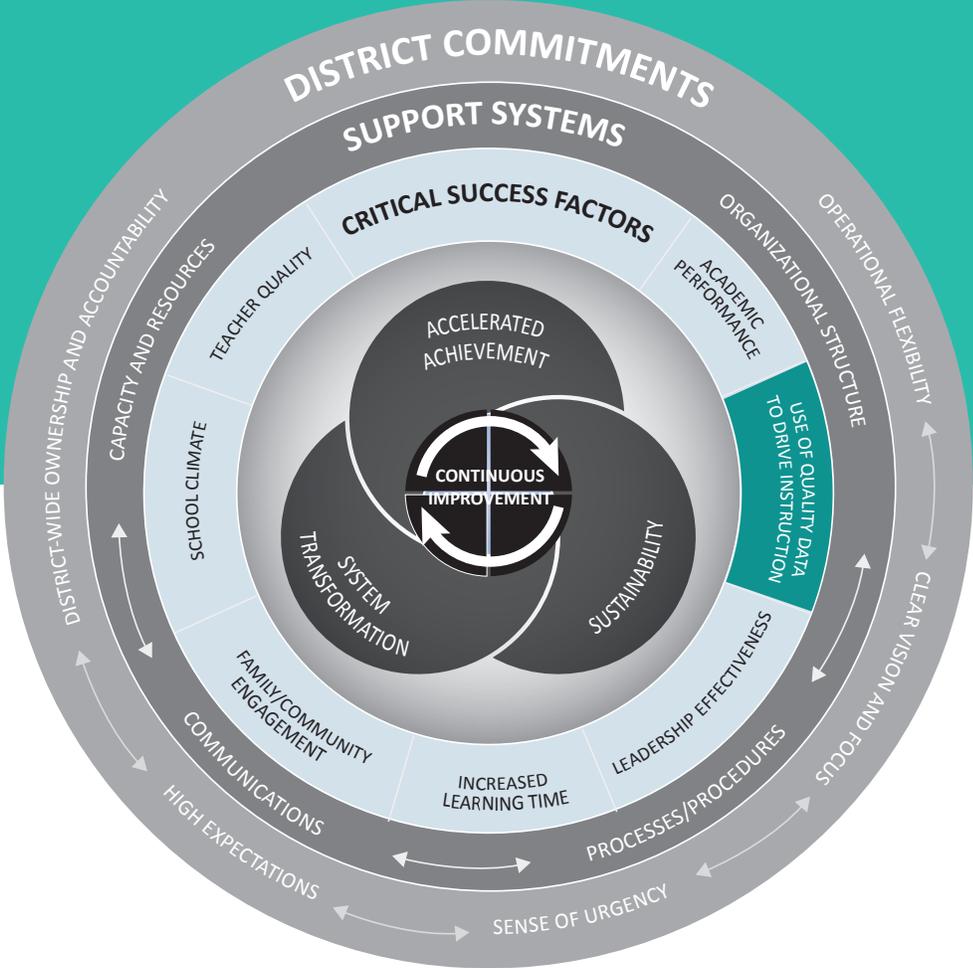# CRITICAL SUCCESS FACTOR (CSF) PLANNING GUIDE
USE OF QUALITY DATA TO DRIVE INSTRUCTION

CSF PLANNING GUIDES ARE INTENDED TO

- Present supporting research that strengthens your knowledge and understanding of the CSF.
- Provide examples of processes and/or strategies to support your implementation of the Texas Accountability and Intervention Strategies (TAIS) framework to strengthen the CSFs on your campus.
- Assist with strategies to determine your strengths and weaknesses for each CSF.
- Identify specific next steps to implement on your campus.

BEFORE GETTING STARTED

- If you are working as a group, designate someone to take notes during the discussions to collect ideas and thoughts for your next steps.
- Assign an individual to lead the action plan for the use of quality data to drive instruction.
- Use the activities in the Next Steps section to gather data, identify problems, and determine root causes.

AFTER REVIEWING THIS GUIDE, RESPOND TO THE FOLLOWING

- What new knowledge do I have about this CSF and how does this information influence my thinking?
- In what ways are the practices at my district/school aligned with strengthening this CSF?
- What do we want to improve and what plan of action is needed to improve?

CALL TO ACTION

Develop a working understanding of the CSF
- Organize an instructional leadership team meeting.
- To understand the team's current understanding of this CSF, ask team members what they know about it and record their responses.
- Read this guide using a jigsaw or other text discussion protocol.
- Respond to questions or discussion prompts listed throughout the guide.
- Determine how you want to initiate learning more about the CSF in relation to the TAIS framework. For instance, you could assign team members to read and facilitate the discussions for the different sections of this guide.
- Utilize the TAIS Guidance Documents at www.tcdss.net as a resource. They include details and specifics for the process.

USE OF QUALITY DATA TO DRIVE INSTRUCTION

The TAIS framework for school improvement clarifies the means and value of the Use of Quality Data to Drive Instruction:

The use of quality data to drive instructional decisions can lead to improved student performance.[1] This CSF emphasizes the effective use of multiple sources of disaggregated data. However, it is not necessarily the amount of data utilized to make decisions that improves instruction and learning, but rather how the information is used.[2] An essential use of both summative and formative data that can improve academic achievement is for teachers to create regular opportunities to share data with individual students.[3] Therefore, it is not only the use of data to drive instructional decision making that is significant but also the ongoing communication of data with others that provides the greatest opportunity for data to have a positive impact on student learning outcomes.

"Data on purpose leads not only to first-order, direct changes in classroom practice and individual student achievement, but also to second-order system-level changes in school culture that ultimately benefit all students" (White, *Ahead of the Curve*, 2010, p. 207). [4]

This guide will address the use of quality data to drive instruction through the following seven sections:

- Why are data used?

- Examples for how data may be used

- Structures that support data-driven decisions

- What students gain by using data

- Challenges to implementing the use of quality data to drive instruction

- Thoughts for reflection

- Next steps

That effective use of data has a direct impact on learning cannot be overemphasized. Researchers and practitioners agree on the profound impact of data-driven instruction. Correspondingly, Platt et al. emphasize that lack of effective data use undermines learning. They say "data free" improvement efforts are characterized by "the 3 F's: flailing around, flaunting ignorance, and fogging up the mirrors so we don't have to take a critical look at the effects of our work."[5]

To set the stage for your thinking around this topic, can you identify efforts in your school or district that are not informed by data? Are any of the 3 F's influencing your improvement efforts? If so, why do you suppose data are not used? How would you go about changing a culture from one that makes decisions without using data to one that does?

SECTION 1
WHY DATA ARE USED?

Information is a powerful tool for helping students succeed. It also serves as a lens to bring into focus outmoded practices that impede learning. Plat et al. list six inefficient practices that can be improved by using data. As you read these, consider the practices in your school:

- Strict adherence to standard operating procedures and business as usual without evidence that those procedures actually improve student learning

- Substituting attention to actions for attention to outcomes

- Willful, persistent disregard of the effects of actions and decisions on learners

- A habit of focusing blame, explanations, and solution-finding almost exclusively on external factors

- Large, random expenditures of effort (and sometimes funds) on activities and initiatives that are not clearly linked to data-driven learning goals or learning needs

- Inability or unwillingness to ask hard questions about your own practice or resorting to "edubabble" in response to hard questions[6]

Multiple sources of data can guide inquiries to determine if current practices are effective. The table below may be used to identify your current status regarding the use of quality data to drive instruction. What other data sources could be used to identify problems? The TAIS framework includes a data analysis tool that recommends multiple sources of data such as those listed below. Make a list of the data sources that your school

or district uses for improvement planning. The TAIS Needs Assessment Guidance resource identifies a list of data sources that are available for use. It can be downloaded at www.tcdss.net/tcdss/docs/tais_needs_assessment_guidance.pdf.

NARROW FOCUS: SINGLE SOURCES OF DATA USE	EXPAND TO INCLUDE	BROAD FOCUS: MULTIPLE SOURCES OF DATA USE (TAIS PROCESS INCLUDES A BROAD FOCUS FOR DATA USE)
Focus on summative tests	and	Multiple formative assessments to balance with summative assessments (TAIS-data analysis)
Externally driven from administration	and	Collaboratively collected and developed from classrooms such as PLCs, student/parent/teacher surveys, etc. (TAIS-data analysis)
Quantitative measures	and	Include anecdotal qualitative measures (TAIS-data analysis and needs assessment)
Inspection, correction, and compliance	and	Ownership, trust and deep problem solving (TAIS-developing problem statements and root cause as well as quarterly review monitoring and data informed adjustments)[7]

SECTION 2
EXAMPLES FOR HOW DATA MAY BE USED

There are a variety of systems and processes for data use; the key is selecting a coherent system that is understood and adopted at the district or campus level. TEA and TCDSS have introduced the TAIS Continuous Improvement Process to guide the practice of using data to inform decisions. The TAIS guidance documents have been developed to provide specific details for the effective use of data.

The key to improving student learning is to identify which data have the greatest impact and using them to inform decisions. There are school-wide data sources such as state assessments, special programs, attendance, classroom observation and discipline, as well as teacher-generated sources such as grades, progress reports, formative assessments, student work artifacts, and student input through surveys. Bambrick-Santoyo identifies these keys to successful data-driven instruction:

1. *Assessment*: Define the roadmap for rigor
2. *Analysis*: Determine where students are struggling and why
3. *Action*: Implement new teaching plans to respond to this analysis
4. *Systems*: Create systems and procedures to ensure continual data-driven instruction[8]

The details and practical value of this model for data-driven instruction are worth exploring, and they directly align with the TAIS continuous improvement process. Another resource used by schools and districts is the book, *Data Wise*. The *Data Wise* process provides a model for continuous improvement using data to inform instruction.[9]

We will now outline two examples of processes that can be used to guide data use. Both examples align with the TAIS continuous improvement process.

EXAMPLE 1

The *Data Wise* process cycles through three stages: preparation, inquiry, and action. Boudett et al. list the steps below to guide the process. These steps align with the TAIS data analysis, needs assessment, problem identification, determining root cause, and improvement planning rubrics, as noted in parentheses. The *Data Wise* cycle below aligns to sections of the TAIS Resources found at www.tcdss.net/tcdss/tais.html.

Organize for Collaborative Work
(Step 1 of the TAIS resource Improvement Planning Guidance)
- Create a data inventory using multiple sources
- Create time for regular collaborative work
- Establish norms for collaborative work
- Use protocols to structure conversations

Build Assessment Literacy

(Create clarity and a common language as explained in the TAIS Data Analysis resource)

- Identify the variety of assessment (formative and summative)
- Ensure understanding regarding the different types of assessments
- Familiarize data team with key concepts and vocabulary around test data

Create Data Overview

(The TAIS directive to make the process visible)

- Decide on educational questions
- Create simple displays
- Display important comparisons
- Utilize displays for data-informed dialogue

Dig into Student Data

(Identify the root causes of problem areas, Step 2 of the TAIS Improvement Planning Guidance document)

- Utilize quantitative and qualitative information to identify a "learner-centered problem"
- Challenge assumptions
- Triangulate data sources
- Develop a shared understanding of the knowledge and skills students need
- Develop a common language for discussing learner-centered problems

Examine Instruction

(Identify the root causes of problem areas, Step 2 of the TAIS Improvement Planning Guidance resource)

- Link learning and teaching
- Conduct calibration walks to examine practice and instructional data
- Develop shared understanding of what effective instruction looks like
- Analyze current practice and how it relates to the identified effective practices

Develop an Action Plan

(Set goals, Step 3 and 4 of the TAIS Improvement Planning Guidance resource)

- Decide on instructional strategies to address student needs
- Agree on a common plan for instructional expectations
- Document the plan with the team members' roles and responsibilities
- Identify the data that will determine if the plan is working

Plan to Assess Progress

(Implement and monitor as per the TAIS Implementation and Monitoring Guidance resource)

- Identify the assessments to be used to measure progress
- Identify when the data will be collected
- Identify who will collect and keep track of the data
- Determine how the data will be communicated
- Identify the student improvement goals

Act and Assess

(As discussed in the TAIS Implementation and Monitoring Guidance resource)

- Implement action plan and evaluate progress[10]

EXAMPLE 2

Victoria Bernhardt developed a comprehensive process for using data that includes a list of questions to guide data gathering, analysis, and the development of a response plan.[11] This process also aligns with the TAIS Improvement Planning Guidance document, specifically with Step 2, establishing priorities aligned to core values. This document can be downloaded at www.tcdss.net/tcdss/tais.html.

- Who are we?
- How do we do business?
- Where are we now?
- Why do we exist?
- Where do we want to be? (Where are the gaps? What are the root causes? How can we get to where we want to be? (improvement planning process strategies, interventions with data monitoring)
- How will we implement it? (Improvement Planning: developing interventions to support goals)
- How will we evaluate our efforts? (Improvement Planning: ongoing and quarterly monitoring and adjustments)

"Information becomes actionable knowledge when data users synthesize the information, apply their judgment to prioritize it, and weigh the relative merits of possible solutions" (Marsh et al., 2006, p.3) .[12]

CALL TO ACTION

You can explore and adapt the example processes outlined above—or even try other recognized models—to establish a data use process that is appropriate for your school or district. The bottom line is that having a viable process is essential for using quality data to drive instruction.

The TAIS continuous improvement process outlines four simple steps for using quality data to drive instruction. The two examples above provide specific actions and questions that can be paired with the TAIS continuous improvement process to strengthen your campus's protocol for making data-informed decisions.

Evaluate the two example processes. Discuss which, if either, or perhaps a hybrid of the two, would be best suited for your school or district. Are there other processes you are aware of that might be more suitable?

SECTION 3
STRUCTURES THAT SUPPORT DATA-DRIVEN DECISIONS

Teacher learning communities that use data to inform their instruction and are supported by strong leadership have been found to have a significant ability to improve student learning.[13, 14] The ongoing use of meaningful data promotes a culture where evidence-based decision making becomes the norm.[15] Still, while school leaders may recognize that this is true, they may also wonder why it can be difficult to create this kind of culture. One reason for this is that school cultures are often vague and intangible. The abstract nature of school culture can make it difficult for leaders to nurture the conditions that result in the routine use of quality data to drive instruction.[16]

Researchers have found that distributed leadership is key to creating structures conducive to dialogue about increasing the use of data.[17, 18] So teacher involvement is important in promoting data-based decision making.[19] Developing data literacy and a culture of inquiry are also critical to the process.[20] Wayman and Stringfield found that teachers are receptive to findings resulting from data analysis and are eager for new ideas that emerge from a culture of inquiry.[21] As teachers have productive collaborative experiences with other teachers, the foundation to build learning communities is reinforced.

Creating this culture of quality data use requires a purposeful strategy. It is not achieved by adding a few organizational structures. Though these structures may alter the culture somewhat, they aren't likely to permanently change and improve instructional practice.[22]

What is needed to create a purposeful strategy? The literature emphasizes that it requires transforming the way teachers and principals engage and work with one another.[23, 24, 25] First, principals must see instructional leadership as their top priority. And it is critical that school leaders build the learning capacity of teachers in their schools.[26] Structures that provide time and support for collaborative dialogues about using quality data to drive instruction are a must. Without them, a school leader will not achieve results.

In sum, building a culture of collaborative inquiry where data are the basis for decisions is vital for effective instruction.[27] In such a culture, where leadership is distributed, data become the spark for action and the foundation for collaboration. The research makes clear, however, that a principal with a purposeful strategy must be the driving force behind any effort to increase the use of quality data to drive instruction.

CALL TO ACTION

1. Think about and discuss how the following concepts, as mentioned above, relate to current practices in your school or district:

- Teacher learning communities

- Distributed leadership

- Data literacy

- Culture of inquiry

- Teacher involvement

- Collaboration with other teachers

- Purposeful strategy

- Culture of data use

- Transformation in teacher engagement/collaboration around instruction

- Increased learning time for students and teachers

- Data as basis for decisions

- Principal as driving force behind data use

2. Rate your current status for the indicators listed below. For any indicator where your status rates less than advanced, suggest the actions you think would be needed to reach an advanced rating.

INDICATORS FAVORABLE TO EFFECTIVE DATA USE	NOVICE	INTERMEDIATE	ADVANCED
Designated Time for Collaboration	Teachers have no scheduled time to meet and discuss data. Some staff may elect to work with colleagues on topics of mutual interest.	Time for collaboration is scheduled during the school day, and teachers are assigned to teams. Guidelines, protocols, and processes are established. The focus is moving toward topics that will improve student learning.	The collaborative process is a part of the school culture and deemed an important part of continuous school improvement. The process becomes embedded in professional development as members learn from one another and identify and solve problems of practice.
Developed Culture of Inquiry	Teachers routinely meet to review student progress. The focus is often on topics that do not reflect on teaching and learning.	Protocols are followed to ensure there is a focus on teaching and learning about and identifying indicators of student progress and their relationship to teaching strategies.	Connections are made between teacher practices and student learning. There is a clear relationship between inquiry focus and school practices where all stakeholders' voices have merit in developing, communicating, and implementing the effort that identifies the most important work.
Shared/Distributed Leadership	Decisions are made by one or very few people. Systems are not fully developed but are in the process to manage reform work.	Teacher roles broaden, and they are included in more leadership roles in the reform work.	Ownership of the reform work is established among most of the faculty whereby a "collective efficacy" strengthens the work of all.

Established Professional Learning Communities	Teacher community and the development of norms for collaboration are in process.	Norms of questioning and a shared language of instruction that advances the learning of the group are in place.	An established data-driven learning community focused on improving practice, responsibility for student learning, and accountability to the learning organization is in place.

SECTION 4
WHAT STUDENTS GAIN BY USING DATA

The individuals for whom the use of data is most meaningful are students themselves. Teachers empower students when they engage them in managing their own learning data. Giving students the responsibility for their own learning motivates them to improve. It helps students realize that effort creates ability and that increased effort results in increased success. They learn that the capacity to learn is not fixed, but that it is malleable and they have some control over it.

When students are involved in the assessment process and empowered with their own learning data, they are motivated and learning soars.[28] The gains are so substantial that Black and William describe it as the most significant single intervention schools can implement.[29] Rick Stiggins concurs:

> *"I have come to see that students also read, interpret, and most importantly, act on the data we generate with our assessments about their achievement. They make crucial decisions based on those data. I have come to understand that the decisions they make as users of assessment results exert far greater influence on their success as learners than do the decisions made by the adults, the parents, teachers, administrators, and policymakers around them."[30]*

Lead4ward.com offers Learning Reports for every grade level to help students understand and use data about their learning. In these reports, students set goals and monitor their progress on improving their readiness and meeting TEKS standards. Students can identify their areas of strength, areas to improve, and get suggestions for what they can do to improve.

Data from formative assessments provides teachers and students with information to accelerate learning.[31] The day-to-day gathering of the ongoing flow of student progress data yields the greatest return in student learning. *How Teachers Can Turn Data into Action*, an ASCD publication by Daniel Venables, is a resource to guide the use of data to inform instruction. It provides tools for teachers to identify critical gaps in student learning, collaborate on solutions to close those gaps, and determine the next course of action.

SECTION 5
CHALLENGES TO IMPLEMENTING THE USE OF QUALITY DATA TO DRIVE INSTRUCTION

If effective data-informed instruction is so important, what prevents it from being the norm in all schools and districts? One dilemma facing school leaders is identifying which data to use and which changes to make.[32, 33] School leaders must be able to formulate predictions about performance on high-stakes testing. Consistent monitoring of performance data, combined with strategically matching the correct intervention with the correct student, eliminates guesswork.

School leaders may grasp the importance of effective data use, yet still face barriers in implementing it. Some of the factors that impede implementation include cultural factors, such as the structure of the organization; technical factors, such as the skill level of the school leaders and the availability of data systems; and political factors, including the public accountability system and fears of reprisal.

Four cultural factors that influence data use are

1. The influence of loosely coupled systems
2. A shift in focus from teaching to learning
3. Using data as opportunities for dialogue
4. Using data for inquiry and calibration

Of these, the first is most important. Loose coupling refers to the traditional isolation of classroom teachers, resulting in their near total discretion in what and how they teach.

For decades, teachers had the freedom to choose their curricula and outsiders had limited influence on classroom practice.[34] Furthermore, loose coupling meant teachers and administrators did not collaborate in decision making based on school-wide or classroom data. The tradition and culture of loose coupling is the key reason that reform efforts to introduce new, more effective teaching practices have difficulty taking root.

When teachers are isolated in this way, implementing the use of data to guide instruction is much more difficult. Devoid of structures that provide regular feedback, loosely coupled organizations are not conducive to collaboration based on the use of data.[35, 36, 37] For this reason, reform efforts based on accountability are often seen as a threat to teacher and administrator autonomy.

Outdated district information technology systems and principals who have inadequate skills using data also impede the implementation of data-driven instruction. Schools frequently get inaccessible or unusable data from the district, or they are poorly trained in using data. Principals may not have efficient data collections systems, and they seldom have the personnel to assist in these efforts. School leaders commonly complain that they lack the support, resources, time, and training they need to implement the use of quality data to drive instruction.

Political factors often lead to fears that make it difficult to create a positive and constructive culture around data use and instructional decision making. When using data is new at a school, facts can surface where myths may have long prevailed. This can threaten the social norms and traditions of the school. School performance ratings are now public knowledge, and school rankings can be compared within and across districts, creating fears of excessive outside scrutiny. Anecdotal examples of data being misinterpreted in teacher and principal evaluations heighten these fears. Lachat and Smith stress that effective data use should be motivated by a culture of inquiry, rather than a culture of fear.[38]

The table below, adapted from Wellman and Lipton, lists shifts that are driving school change. Within a school, individual teachers and administrators are often at different stages of each shift:

SHIFT FROM	SHIFT TO
A teaching focus	A learning focus
Teaching as a private practice	Teaching as a collaborative practice
School improvement as an option	School improvement as a requirement
Accountability	Responsibility[39]

These shifts highlight the need to engage in dialogues about using data. These conversations can drive the development of a culture of inquiry. Principals and teachers can collaborate on strategies to define student work and learning standards, common rubrics, and instructional practices.

CALL TO ACTION

Discuss the three factors (cultural, technical, and political) that impede the use of quality data to drive instruction and identify those present in your school or district. Use the table below to do a SWOT analysis to identify strengths, weaknesses, opportunities, and threats accompanying each of these challenges. Determine how your strengths and opportunities can significantly overcome areas of weakness and threat while realizing that it may not be possible to overcome them completely in the short term. Focus on strengths and opportunities to guide your work.

STRENGTHS (INTERNAL FACTORS)	WEAKNESSES (INTERNAL FACTORS)
OPPORTUNITIES (INTERNAL FACTORS)	THREATS (INTERNAL FACTORS)

"When one is open to critically examining assumptions, data can be a catalyst to discarding old frames of reference and embracing new ones" (Love, et al., 2008, p.12).[40]

SECTION 6
REFLECTION

It takes focused leadership to ensure that data are used effectively to measure and improve student learning. A significant barrier for data use is a lack of coherent vision within the school. This void may result from the lack of clear expectations regarding how data should be used, which data should be used, and which processes should be used to integrate data into a school's decision making. Without a vision for organizational learning and structures to support collaboration, teachers may see these activities as voluntary and optional.[41, 42, 43] The absence of a clear vision for teaching and learning creates an obstacle for generating a culture in which quality data drives learning. Once a clear vision is in place, systems, structures, and processes for effective data use must follow, to advance learning for all staff and students.

What is your vision for using quality data to drive instruction? If you do not have a clear vision, the next section will help you develop one.

SECTION 7
NEXT STEPS

In collaboration with your instructional leadership teams, use the following list to create a vision for using quality data to drive instruction in your school or district:

- Determine your current practices for using quality data.
- Identify the systems and structures in place that support the use of quality data.
- Is leadership distributed in your school? Are teacher leaders involved in developing a vision for using quality data to drive instruction?
- Review the processes discussed in this resource. Which, if any, of these could bolster your current process for data use?
- How are summative assessment data used to identify and inform future instructional needs, curriculum revisions, programmatic improvements, and professional development?

Additional questions to consider are found in Appendix B of the TAIS Needs Assessment Guidance document.

Using the TAIS framework, develop or enhance your plan for using quality data to improve instruction. The plan should include:

- A vision that promotes data use
- A school- or district-wide process for data use
- A process for communicating the expectations for data use
- A plan for monitoring the implementation of the use of quality data to drive instruction

MAKING CONNECTIONS
TO OTHER CSFS

- Improve Academic Performance
- **Increase the Use of Quality Data to Drive Instruction**
- Increase Leadership Effectiveness
- Increase Parent and Community Involvement
- Increase Learning Time
- Improve School Climate
- Increase Teacher Quality

As you go through the Resource Planning Guides, you will notice that the CSFs interact. Learning time, teacher quality, and leadership effectiveness all increase when the organization increases the use of quality data to drive instruction. These factors are critical for improving academic performance, and, as a result, school climate improves. Discuss examples that show how each factor affects the others. For example, how might increasing the use of quality data to drive instruction increase learning time?

NOTES

Page numbers corresponding to the citations are forthcoming

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