

EDUCATION DATA 101

A Briefing Book for Policymakers



When students, parents, educators, and policymakers have the right information to make decisions, students excel.

As a policymaker, you need information about the schools in your state. What programs are the most cost effective and work best for students? How can your state attract and retain great teachers? What information do parents need to ensure that their kids are on track to graduate? For answers to questions like these, you need high-quality data. Information is a critical tool to help inform your policy decisions. Likewise, everyone involved in a child's education needs timely, accurate data to provide insights and drive improvements for students.

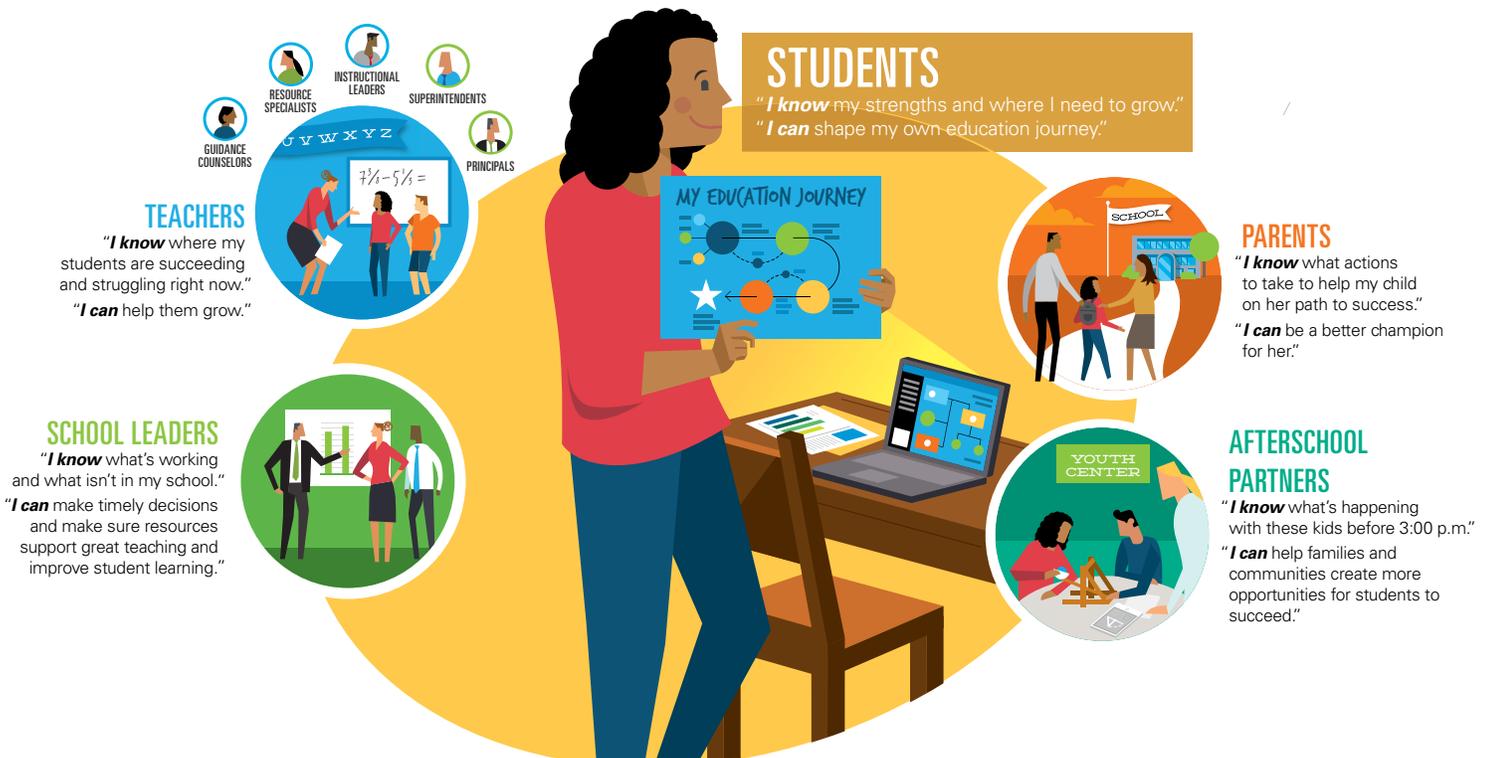
Data has become a critical part of education policy conversations in every state, and this briefing book is meant to bring you up to speed on the major topics you need to know about. We have selected eight of the most pressing topics and have provided the following for each:

- a basic overview of the topic
- why it matters
- the "state of play" on the latest progress states and others have made in that area
- recommendations to take action in your state
- additional resources to help build your understanding of data topics and policies

For help bringing these ideas to life, see the Data Quality Campaign's (DQC) *Four Policy Priorities to Make Data Work for Students*, a set of recommendations for policymakers to transform data from a tool of compliance to one that empowers people and fuels continuous improvement. And please let DQC know if there are additional topics we may cover or other ways we can help you make data work for students: info@dataqualitycampaign.org.

8 things to know about data in education:

1. Student data helps improve student achievement.
2. State longitudinal data systems help answer questions and drive improvement.
3. Data linkages provide the fullest picture of student and school outcomes.
4. Student data must be kept private and secure.
5. State report cards provide the public information about student and school performance.
6. Data empowers teachers and parents with information to better support learning.
7. Educator preparation programs need data to improve teacher training and quality.
8. Teachers must be equipped with the skills to understand and use data effectively.



1. Student data helps improve student achievement.

Student data helps teachers, parents, and policymakers answer questions and take action to support student success.



What Is Student Data?

- Student data is more than test scores. It includes information such as attendance, grades, student growth, outcomes, enrollment, and more.
- Schools, districts, and states collect student data and use it to make decisions about instruction, interventions, policy development, and resource allocation.
- The majority of student data is stored at the school and district levels. A limited amount is reported to states, which use and share it in anonymous and aggregate forms.



Why Does Student Data Matter?

- Student data provides teachers a more complete picture of the strengths and weaknesses of each child in their classroom; with this information teachers can improve and tailor instruction to fit students' needs.
- Student data empowers families with information so that they can be partners in their student's learning, supporting learning at home and making informed choices about schools and programs.
- School and system leaders can use data to identify the needs and trends of broader student populations to make more informed decisions around professional development and school support.
- Aggregate data about student and school success helps inform policymakers as they shape policy and allocate scarce resources.
- Multiple data points presented together can provide the fullest picture of student outcomes, making parents, teachers, and leaders better able to support student success.



State of Play

- Every school, district, and state collects information about students. Most of this information stays at the local level.
- Every state has a system to collect information about K–12 students over time, and many states have linked that data with other information, such as student progress in postsecondary institutions.
- State and federal laws drive data collection.



Take Action

- **Learn about the data your state collects** and how it is used.
- **Start with your questions**—determine your state's education priorities and explore how data helps meet them.
- Consider policies that **get data into the hands of teachers and parents** so that they can use it to support student success.



Learn More

What Is Student Data? This infographic and video show the types of data that can come together—guided by requirements like privacy and security—to form a full picture of student learning.

Time to Act: Making Data Work for Students This foundational report introduces DQC's Four Policy Priorities to Make Data Work for Students, which include a set of recommendations for state policymakers to ensure that data is accessible, useful, and secure.

Time to Act 2017: Put Data in the Hands of People This national landscape summary covers states' efforts to date on DQC's Four Policy Priorities and provides recommendations for further state action.

2. State longitudinal data systems help answer questions and drive improvement.

State longitudinal data systems link data over time, offering the ability to observe trends and answer questions about the why and how behind student outcomes and to drive continuous improvement from classroom instruction to policy development.



What Is a State Longitudinal Data System (SLDS)?

- An SLDS links state education data over time to provide a complete academic history for each student.
- A robust SLDS includes student-level data such as enrollment, attendance, test scores, and demographics that can be reported at the school, district, and state levels.
- One of the greatest benefits of an SLDS is that it can securely link K–12 data with prekindergarten, postsecondary, and workforce data to help policymakers understand the long-term trends and outcomes of students and systems. (See Section 3 on data linkages.)
- An SLDS is not just an IT project—building a quality SLDS requires leadership from educators and policymakers committed to using the power of data to meet individuals' needs.



Why Does an SLDS Matter?

- An SLDS helps policymakers and educators answer questions that districts alone cannot, such as *How are students from my middle school performing in high school? Which schools are producing the greatest amounts of student growth? How many students go on to succeed in college?*
- Longitudinal data, when reported at the aggregate level, shows system leaders and educators trends in student performance, which can help them determine what is working and design more targeted interventions and supports for students.
- The opportunity to observe trends in student learning and growth over time can help policymakers design and monitor the impact of policies and programs to reach the big-picture goal of college and career readiness for all students.
- As students move between schools and across districts their data within the SLDS is able to move with them, eliminating the administrative burden of transferring paper files.



State of Play

- While an SLDS is a state-driven effort, as of 2017 the federal government has supported 47 states with more than \$650 million to build an SLDS consistent with the 10 Essential Elements of Statewide Longitudinal Data Systems, DQC's roadmap for a high-quality SLDS.
- Demonstrating the value of longitudinal data, as of 2014 policymakers in 41 states have made financial investments in their SLDS.
- An SLDS has the most impact when it answers questions beyond K–12; as of 2014, 43 states link K–12 and postsecondary data.
- As of 2014, 42 states provide teachers access to longitudinal data they can use to inform instruction, such as on-track indicators and student growth data.



Take Action

- **Find out about your state's SLDS;** the current state of prekindergarten, postsecondary, or workforce linkages; and how the data is being used in the service of students.
- **Communicate** to stakeholders the value of longitudinal data to student success.
- **Demand the data for yourself**—policymakers need longitudinal data to make informed decisions to support the students in your state.

Using **longitudinal data** is like being able to watch a video of student progress over time rather than in a series of snapshots.



Learn More

Traveling Through Time: The Forum Guide to Longitudinal Data Systems (National Center for Education Statistics)

This resource outlines the fundamentals of SLDS development and discusses the value that an SLDS can bring to a state's education system.

The 10 Essential Elements of Statewide Longitudinal Data Systems

The 10 Essential Elements were developed by DQC in 2005 to provide a roadmap for states as they built systems to collect, store, and use longitudinal data to improve student achievement.

Data Systems That Work This DQC resource page outlines the potential of effective data systems and underscores the role that policymakers must play to create the conditions for high-quality data systems.

Data Can Help Every Student Excel This infographic and video from DQC show what is possible when those closest to students, such as parents, teachers, and partners, are empowered with data to make decisions and take action in service of student learning.

3. Data linkages provide the fullest picture of student and school outcomes.

Securely linking education data between systems, such as K–12, postsecondary, and the workforce, ensures that educators and policymakers have a comprehensive picture of school and student outcomes that can inform state decisionmaking and resource allocation.



What Are Data Linkages?

- A data linkage is a technical mechanism that connects different data systems, enabling the state to securely share information across state agencies.
- States use different models to link their data systems to ensure that state and local leaders have rich pictures of different pathways to success in their state.
- Effective P–20/W linkages require a strong data governance body that is tasked to ensure coordination, data privacy and security, and accountability across state agencies.
- Data linkages are a part of a high-quality state longitudinal data system.



Why Do Linkages Matter?

- P–20/W data systems can provide a fuller picture of student progress and pathways through the education system and into the workforce. With linked data, feedback loops can be established between these systems to inform state and system leaders of changes needed to drive continuous improvement.
- Absent P–20/W linkages, data often sits in silos within state agencies, creating inefficiencies and preventing policymakers from fully understanding students' pathways through the P–20/W system.
- Data linkages enable leaders to answer important questions, such as *What is the relationship between high school courses and college success? Is our state's education system producing career-ready graduates with knowledge aligned to the employer needs in my state? Are all children entering school kindergarten ready?*



State of Play

- As of 2017, only 17 states and the District of Columbia have built a full P–20/W system linking early childhood, K–12, postsecondary, and workforce data. Thirty-three states have established a cross-agency data governance body with authority over how data is collected and used.
- Linked data is most valuable when the data informs decisions. For example, most states use linked data to produce high school feedback reports, which provide school leaders with information about whether their graduates enrolled, persisted, or needed remediation in postsecondary education.



Take Action

- **Learn what data is (and is not) linked** in your state and how the information is being used.
- **Ensure that policy leaders are in charge** of this work and are present on your state's data governing body.
- **Develop strong privacy and security policies** while ensuring that they do not unnecessarily limit data linkages and use.

P–20/W refers to state-level data systems that include linked data from prekindergarten, K–12, postsecondary, and the workforce.



Learn More

Roadmap for K–12 and Postsecondary Data Linkages This roadmap outlines recommendations for states to securely link limited K–12 and postsecondary data to ensure quality implementation and determine how best to support students' transition into college.

Roadmap for Early Childhood and K–12 Data Linkages This roadmap outlines recommendations for states to securely link limited early childhood and K–12 data to help states ask and answer questions about whether policies and programs help children successfully transition from early childhood to the classroom.

Pivotal Role of Policymakers as Leaders of P–20/Workforce Data Governance This guide outlines actions policymakers can take to effectively develop and lead P–20/W data governance and ensure that data systems meet stakeholder needs.

4. Student data must be kept private and secure.

Safeguarding data—and building trust in how it is used—is an essential part of effectively using education data to support student learning.



What Is Student Data Privacy?

- Safeguarding students' information is about ensuring that individual student data is being collected for meaningful purposes and kept confidential, secure, and private. This can be done through both technical solutions such as secure systems and role-based access and nontechnical solutions such as training for those with access to students' information.
- To safeguard students' personal information, policies and practices must be in place at the state and local levels to provide guardrails for the protection of student data and ensure that systems are secure.
- The public, especially parents, must have a clear understanding of what data is collected, how it is used, who has access to it, and how it is protected.



Why Does Protecting Student Data Privacy Matter?

- Education data is used every day by teachers, parents, and state leaders to make decisions in support of student success. That information must be safeguarded and used only to help students.
- With high-quality policies and practices in place governing data protection and use, state leaders can more confidently rely on data to guide critical decisionmaking.
- Public trust in the privacy and security of data collected by schools, districts, and states is necessary for maintaining support for using data in service of student learning.



State of Play

- The Family Educational Rights and Privacy Act (FERPA) is the foundational federal law that protects the privacy of students' education data and provides families rights to review their children's information.
- State legislators have acted to build on the foundation of FERPA. Since 2013, 41 states and the District of Columbia have enacted 94 student data privacy laws.
- 18 states have passed laws that require publicly reporting inventories of what data is collected so that parents and the public understand what student information is being used.



Take Action

- Determine whether policies, laws, and practices in your state **promote robust governance and provide protection for students' information.**
- Support policies and allocate resources that **equip those with access to students' personal information, such as teachers, with training** to effectively and ethically use, protect, and secure students' information.
- **Communicate with the public** about the value of data and how states and districts protect the data they collect.



Learn More

Education Data Legislation Review:

2017 State Activity This report provides a review and analysis of all introduced legislation related to student data privacy in 2017.

Roadmap to Safeguarding Student

Data This brief provides specific, practical recommendations for state education agencies as they prioritize the safeguarding of student data and continuously review and update their data privacy policies and practices to address changes in technology.

A Stoplight for Student Data Use

This tool summarizes some of the main provisions of FERPA and related regulations and identifies when students' personally identifiable information may be securely shared under the law.

Key Elements for Strengthening State Laws and Policies Pertaining to Student Data Use, Privacy, and Security:

Guidance for State Policymakers

(Education Counsel) This resource contains guidance for state policymakers around safeguarding student data.

5. State report cards provide the public information about student and school performance.

Parents and the public want and deserve information about how their students and schools are doing. State report cards present an opportunity to provide the public a clear picture of student and school success that is easy to find and understand.



What Is a State Report Card?

- States are required by federal law to produce a report card to help the public understand how students and schools are performing each year.
- Report cards provide information on the types of students that schools and districts educate (e.g., Latino, special education), how well those students are doing academically, how often students come to school, the school's financial resources, and what types of qualifications teachers have.
- Report cards include information about the measures included in a state's education accountability system alongside other contextual information about students and schools.



Why Do Quality State Report Cards Matter?

- Everyone deserves to know how the public schools in their communities are doing.
- When information is difficult to find or understand, parents must cobble together information from different sources. This can breed mistrust between families and the education system serving their children.
- State report cards are an opportunity to communicate with parents and the public about state priorities and education goals.
- State report cards are also an opportunity to present a clear picture of student and school performance in a one-stop format that states are uniquely positioned to produce and provide.
- At their best, state report cards should answer questions and inform action. Quality report cards help parents make decisions about their child's education and help state and local leaders allocate scarce resources.



State of Play

- Every state produces an annual report card about school, district, and statewide performance, but the report cards are of varying quality and usefulness.
- The federal Every Student Succeeds Act requires that certain information be reported on a state report card, but states have the opportunity to provide additional data based on state and local needs.
- While report cards should be a key source of information, in many states, clunky formats, missing data, and technical jargon prevent the public from understanding the information available on report cards.
 - ◆ 42 states produce report cards in English only and provide no translation services.
 - ◆ 18 states do not disaggregate student performance by at least one legally required subgroup, which can hide achievement gaps and the students who need support.
 - ◆ The average state report card is written at a grade 15 reading level, making it difficult for all families to understand.



Take Action

- **Review your own state's report card** to see if it answers key questions using DQC's [scavenger hunt tool](#).
- **Engage stakeholders, including parents and teachers**, about what information they want to see on your state's report card and how it should be displayed.
- Work with fellow leaders (legislators, education board members, state education agency, the governor's office) to **improve the accessibility and usefulness of your report card**.



Learn More

Show Me the Data: DQC's analysis examines the information, accessibility, and usefulness of all 50 state report cards in helping the public ask and answer important questions about their schools and students.

A State Guide to Building Online School Report Cards (ExcelinEd) This resource, created in partnership with DQC, features a step-by-step process guide for creating a high-quality school report card.

Sample College and Career Readiness Indicators for a School Report Card (Achieve) This model report card outlines sample college and career readiness indicators that can be included within a state's school-level report card.

6. Data empowers teachers and parents with information to better support learning.

With access to the right information, those closest to students, especially teachers and parents, are positioned to make better decisions in support of their students' learning.



What Does Parent and Teacher Access to Data Look Like?

- Access to individual student data, including attendance, behavior, grades, progress, and assessment results, provides teachers and parents a holistic view of a child's learning.
- Parents need timely access to their child's current data as well as information on past performance presented with clear explanations on how to understand the data and what to do next.
- Teachers need timely access to data on their students' present performance and past progress, so they can use it to inform their practice and better support learning for each student.
- Access to data about student progress over time can supplement traditional report cards, helping parents and teachers identify long-term trends and patterns in student learning.
- When they are the highest quality, secure portals or dashboards allow parents and teachers to regularly log in and see students' up-to-date information including attendance, grades, current performance, and past progress.



Why Does Parent and Teacher Access to Data Matter?

- When parents and teachers have access to information about student performance, they can be more effective partners in their students' learning.
- Empowered with their child's data, parents can select the right programs and school for their child and help boost learning at home.
- When educators have access to timely information they can strategically intervene with students who may be falling behind *and* help those who are ready to learn ahead go further.
- With access to longitudinal data, teachers can get a sense of their students' education progress over time and tailor instruction to properly challenge and grow each student.
- Providing parents and teachers access to data that they find valuable and actionable helps build trust in student data.



State of Play

- States must support districts in providing parents and teachers data about student progress over time, side by side with day-to-day information; as of 2014 only 13 states ensure that teachers and parents have access to their students' longitudinal data.
- Only 36 percent of public school parents strongly agree that they have easy access to all of the information they need to make sure their child gets a great education.
- On average, teachers view data as "worth it" and report using it frequently in their practice, but 67 percent of teachers are not fully satisfied with the effectiveness of the data and tools they have access to on a regular basis.



Take Action

- **Determine what information your state makes available** to parents and teachers.
- Consider policies that **provide educators and parents with timely and accessible student information.**



Learn More

How Data Empowers Parents In this infographic and video see how accessible, relevant, and timely data empowers parents to make better decisions, provide better support, and be better advocates for their daughter Maria's learning success.

Ms. Bullen's Data-Rich Year In this infographic follow a teacher throughout the school year as she leverages a variety of data such as attendance, growth, assessment scores, and past performance to tailor instruction, guide conversations with parents, and improve her practice.

Data Backpacks: Portable Records and Learner Profiles (Digital Learning Now) This paper provides specific guidance regarding adoption of the Common Core State Standards and the shift to personal digital learning, and in particular it outlines the opportunity for a student data backpack.

7. Educator preparation programs need data to improve teacher training and quality.

To meet state goals for a high-quality teacher workforce, educator preparation programs need information from the state about their graduates so they can continuously improve how they train teacher candidates.



What Data Do Educator Preparation Programs (EPPs) Need?

- States collect information about teachers that is useful to EPPs, such as teacher licensure rates, school placement, and job performance in the classroom, but this information, which can help improve preparation, is not regularly shared with EPPs.
- EPPs are required to collect and report certain information to comply with state and federal law, but these data requirements are not always aligned with the information EPPs need to continuously improve.



Why Does EPP Data Use Matter?

- Having a high-quality educator workforce is a priority for many states, and quality educator preparation is critical to meeting that goal.
- Data helps EPPs answer questions about how their graduates perform in the classroom, which EPPs can then use to improve how they prepare their graduates to meet the diverse needs of K–12 students.
- Without data about their graduates' placement and performance, EPPs are unable to change curriculum and instruction to best equip teacher candidates with the knowledge and skills to be effective first-year teachers.



State of Play

- Most states have the capacity to link teacher performance data with teacher preparation programs through the state's teacher–student data link, which links teachers to their students by course.
- As of 2014, 39 states share some type of data annually with in-state programs. Specifically,
 - ◆ only 22 states share classroom performance information (e.g., growth scores) that helps EPPs understand if their graduates are ready to meet K–12 student needs;
 - ◆ only 25 states share school placement information; and
 - ◆ only 25 states share employment information, which allows state leaders and EPPs to better understand K–12 workforce needs and whether programs are meeting them.



Take Action

- **Securely share teacher performance data** with the programs that prepare the teachers.
- **Publicly report relevant measures of EPP quality** such as aggregate measures of graduates' performance, licensure rates, job placement data, and job retention.
- **Conduct an education workforce needs assessment** to gain a more accurate picture of hiring needs.



Learn More

Using Data to Ensure That Teachers Are Learner Ready on Day One This policy primer emphasizes the need for data to improve EPPs and highlights the role states can play to ensure that the right information is available to drive continuous improvement.

Understanding Teacher Effectiveness: Providing Feedback to Teacher Preparation Programs This resource tracks state efforts to link and share with EPPs in accessible and actionable ways data on teachers' performance.

From Chaos to Coherence (Deans for Impact) This policy brief provides states with recommendations on how to maximize their relationship with EPPs and provide them with better data on the performance of their graduates.

Getting to Better Prep (TNTP) This report highlights the benefits of teacher preparation data systems and shares best practices from states already engaged in building and using these systems.

8. Teachers must be equipped with the skills to understand and use data effectively.

Teachers want and need data in their classrooms. To use data effectively, teachers must be equipped with the knowledge and skills to collect, interpret, and use student data.



What Is Data Literacy?

- Data literacy is the knowledge and skills educators need to use data to improve student learning as well as their own practice.
- Data use, along with content knowledge and pedagogical skills, is part of good teaching.
- Data literacy is about more than just assessment scores. While these scores are important, educators have access to a variety of information beyond assessments such as student growth, homework, and attendance and must understand how to use this information to inform their practice.



Why Does Educator Data Literacy Matter?

- Teachers need to use data to understand individual student strengths and needs, how to target class time, and how to select the best resources to help each student excel.
- Principals need to use data to make more informed decisions about schoolwide needs and resource allocation as well as to select professional development opportunities that best support teachers' needs.
- Data-literate educators and school leaders know the steps to take to protect student data and prevent misuse of student information.



State of Play

- Teachers need an introduction to data before they enter the classroom, but only 19 states include data literacy in teacher licensure policy.
- 21 percent of teachers say they lack needed training on how to use data to support teaching and learning.
- The federal Every Student Succeeds Act gives states and districts flexibility to use Title II funds to train teachers and leaders on how to use data and keep it secure.



Take Action

- Give districts and schools flexibility to **provide educators time to collaboratively look at data.**
- Update policies, such as licensure and teacher evaluation, to **include data literacy skills as a measure** of quality teaching.



Learn More

Teacher Data Literacy: It's About Time

This brief for state policymakers offers a proposed definition of data literacy along with recommendations on how to foster a data-literate teacher workforce.

Mr. Maya's Data-Rich Year In this infographic see how a school principal and his leadership team use data throughout a school year to enable teachers and students to set and meet education goals.

Ms. Bullen's Data-Rich Year In this infographic follow a teacher throughout the school year as she leverages a variety of data such as attendance, growth, assessment scores, and past performance to tailor instruction, guide conversations with parents, and improve her practice.



The Data Quality Campaign is a nonprofit policy and advocacy organization leading the effort to bring every part of the education community together to empower educators, families, and policymakers with quality information to make decisions that ensure that students excel. For more information, go to www.dataqualitycampaign.org and follow us on Facebook and Twitter (@EdDataCampaign).