CHAPTER 1

The Rationale and Context for a Data-Driven School

ROADMAP

1. A story of systems-level problem solving and relationships in a data-driven school
2. The need for data-driven schools
3. Key tenets of a data-driven school
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   b. A comprehensive assessment system
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   c. Easy access to appropriate data for all staff
   d. The time and resources for all staff to examine these data
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The following story, based on our experiences as data leaders, highlights the importance of systems-level problem solving and relationships in building a data-driven school.

> Midway through the school year, third-grade teachers reported that office discipline referrals (ODRs) involving their students were significantly higher that year than would have been expected based on trends from past years and ODRs for other grades that year. After this problem was identified, it was brought to the school building leadership team for further discussion and analysis. The team included the principal, the assistant principal, general education teachers, special education teachers, and other related services personnel, such as the school social worker, school nurse, and school psychologist. The team agreed that the most

important first step was to review the ODR data to determine when the referrals were most often occurring and who was involved. They found that the incidents leading to the referrals most frequently occurred on the playground and that seven third-grade boys accounted for a significant percentage of the referrals.

To further analyze the problem, the team decided to interview the seven target students and their parents to find out more about the students. They discovered that all seven students lived in the same low-income housing project 1 mile from the school. Furthermore, the students and their parents told the team that, while the housing project did have a playground, the seven boys did not use the playground because they and their parents did not see it as safe. The team then observed the seven students on the playground at school and saw that they did not play during recess, but instead walked around the outside of the playground picking fights with other children. Based on this analysis of the problem, the team hypothesized that the problem seemed to occur because the seven students lacked the skills to engage in cooperative play at recess and/or needed more practice to effectively demonstrate the skills.

To address this problem, the team developed and implemented a two-part plan. First, they worked with the school's physical education teachers to identify and teach cooperative games to all third-grade students, including but not limited to the seven target students, during their regular physical education classes. Once the students had learned the cooperative games, members of the leadership team went out on the playground during the third-grade recess time and helped all third-grade students play the games. As the plan was implemented, the team continued to gather data on ODRs for all third-grade students, including the seven target students.

To evaluate the effectiveness of the plan, the team first examined changes in third-grade ODR data. They found that the percentage of referrals coming from third-grade students had declined significantly, including specifically a marked decline among the seven target students. It is important to note as well that the target students showed improved relationships with their teachers and increased student achievement despite the fact that neither of those were outcomes that had been a focus of the intervention plan.

Most educators are familiar with the steps involved in problem solving regarding individual student academic and behavior problems, as illustrated in Figure 1.1 (Batsche & Knoff, 1995; Knoff, 2002), but fewer of them have explicitly used the problem-solving model to address problems at the classroom, school, or district level.

The story above shows how the problem-solving model can be used to address a schoolwide problem. It particularly highlights the importance of the problem analysis step of this systems-level problem-solving model. By carefully analyzing the problem and answering the question "Why is the problem occurring?", the leadership team was able to narrow the focus of the problem to the playground and to seven target students. The team was also able to uncover the fact that the target students might not have the skills—or ability to consistently demonstrate the skills—necessary to behave appropriately on the playground.

Relationships were also critical to the story. Administrator–staff relationships were critical in forming the school building leadership team and ensuring its effectiveness. Staff–staff relationships were critical in allowing the team to feel comfortable sharing data and

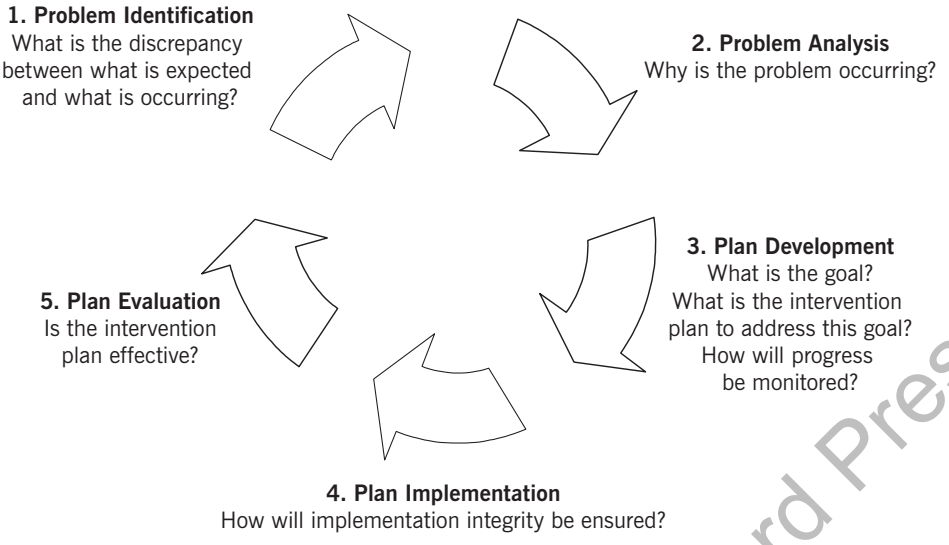

FIGURE 1.1. Problem-solving model. Reprinted with permission from St. Croix River Education District, Rush City, Minnesota.

collaborating with one another. Staff–student relationships were critical in helping the target students not only decrease their ODRs but also improve their achievement following the intervention. And staff–family relationships were critical in making the parents of the target students feel comfortable enough to share information about their children.

This story exemplifies the goal of this book. We believe that schools can solve many problems, both academic and behavioral, for both individual students and groups of students, by collecting meaningful and useful data, and having school teams use the problem-solving process to analyze the data and create workable plans to address the problem. Each step of the systems-level problem-solving model illustrated in the story is discussed in greater detail in Chapters 2–4. The importance of relationships and making connections at all levels within the school community in building a data-driven school, as demonstrated in the story, is the focus of Chapter 9.

The problem-solving model (Batsche & Knoff, 1995; Knoff, 2002) is a useful framework for guiding the process of using data to continually inform decision making. What we strive to present in this book is the idea that this same model is effective at all levels of the organization. At the district and school levels, the types of data may be slightly different, or they may be aggregations of data from those used at the individual level, but the questions to be asked and the decision-making process to walk through can be parallel to those used at the classroom and individual levels. In Table 1.1, we present the different types of data that might be accessed, the roles involved, and the processes that lead to data-based decision making at the district, school, grade, classroom, and individual levels, across both academic and behavioral data.

In order to help connect Table 1.1 to the problem-solving model and cue the reader to what level of the organization we are discussing, throughout the book we provide a visual of the problem-solving model with different levels of the organization at its center. See Figures 1.2 and 1.3 (on p. 14) for examples.

TABLE 1.1. A Consistent Data-Based Decision-Making Process at All Levels of the Organization, with Different Roles, Processes, and Data Used to Implement the Same Problem-Solving Model

Who's involved	What happens	Data used
	District-level planning	
District leadership teams • District leaders • Principals • Teacher representatives • Specialist representatives	Planning for strategic direction • Identify districtwide areas of need and resource focus (i.e., specific academic/behavioral areas) • Identify schools needing additional support and resources • Identify performance inequities through data disaggregation • Evaluate effectiveness of districtwide core curricula and supplemental intervention programs	Key performance indicator data • State assessments • Academic screening • Behavior screening and referrals • Student engagement assessments • Fidelity of implementation data • Resource allocation equity data
	School-level planning	
School improvement teams • District leader representative • Principal • Teacher representatives • Specialist representatives	Developing and implementing school improvement plans • Tier 1 priorities for focus • Resource allocation needs • Goal-setting and action steps for implementation • Focus of PLCs/data teams Evaluating fidelity of implementation of core curricula and supplemental intervention programs Planning for schoolwide PBIS program • School rules • Token economy • Reinforcement of positive behavior Evaluating fidelity of implementation of PBIS program	Key performance indicator data • Academic screening • Behavior screening and referrals • Student engagement assessments • Fidelity of implementation data • Resource allocation equity data School improvement data • Goal attainment • Fidelity of planned action steps
	Grade-level, class-level, and student-level planning	
	Tier 1	
Grade-level teams • Principal • Teachers • Specialists	Planning for core instruction • Whole-class instruction • Small-group differentiation	• Universal screening (benchmark testing) results • State test results
Grade-level teams • Principal • Teachers • Specialists	Implementing schoolwide PBIS program • Fidelity • Evaluation of impact and where additional supports may be needed	• ODRs • Behavior screeners • Classroom-level data

(continued)

TABLE 1.1. *(continued)*

Who's involved	What happens	Data used
	Tier 2	
Grade-level teams • Principal • Teachers • Specialists	Planning for supplemental academic interventions • Identification of deficient students • Assignment of students to intervention groups • Identification of supplemental interventions Evaluation of efficacy of supplemental academic interventions • Evaluation of fidelity of interventions • Evaluation of students' response to intervention	• Universal screening (benchmark testing) results • Progress monitoring data • Intervention fidelity data
Grade-level teams • Principal • Teachers • Specialists	Planning for supportive behavioral and emotional interventions • Identification of students needing support • Assignment of students to support groups • Identification of supplemental individual interventions Evaluation of efficacy of behavioral and emotional interventions • Evaluation of fidelity of interventions • Evaluation of students' response to intervention	• ODRs • Behavior screeners • Classroom-level data • Intervention fidelity data
	Tier 3	
Grade-level teams • Principal • Teachers • Specialists	Planning for intensive academic interventions • Identification of students making insufficient progress in supplemental interventions • Identification of intensive interventions Evaluation of efficacy of intensive academic interventions • Evaluation of fidelity of interventions • Evaluation of students' response to intervention	• Drill-down assessment data • Progress monitoring data • Intervention fidelity data
Grade-level teams • Principal • Teachers • Specialists	Planning for intensive behavioral and emotional interventions • Identification of students making insufficient progress in supportive interventions • Identification of individualized interventions Evaluation of efficacy of behavioral and emotional interventions • Evaluation of fidelity of interventions • Evaluation of students' response to intervention	• Data from functional behavioral assessments • Progress monitoring data • Intervention fidelity data

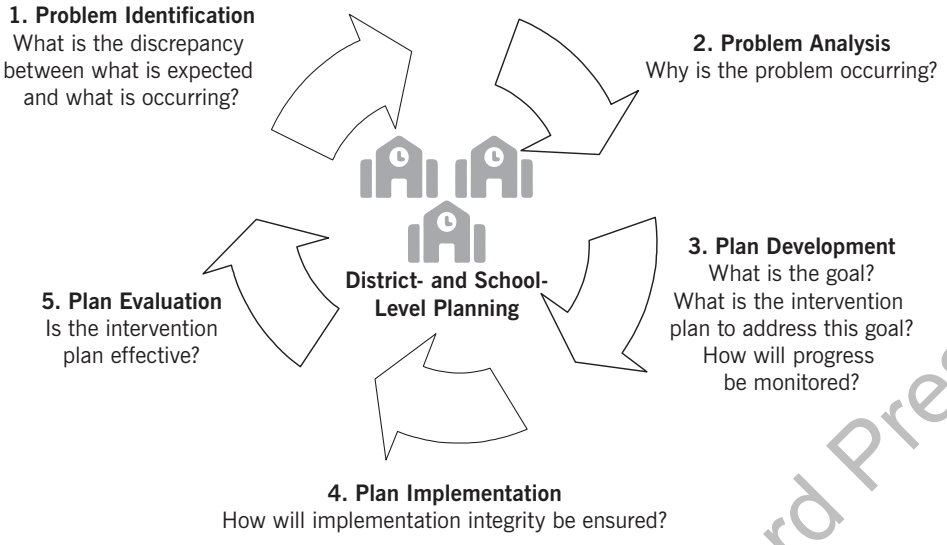

FIGURE 1.2. Using the problem-solving model for district- and school-level planning.

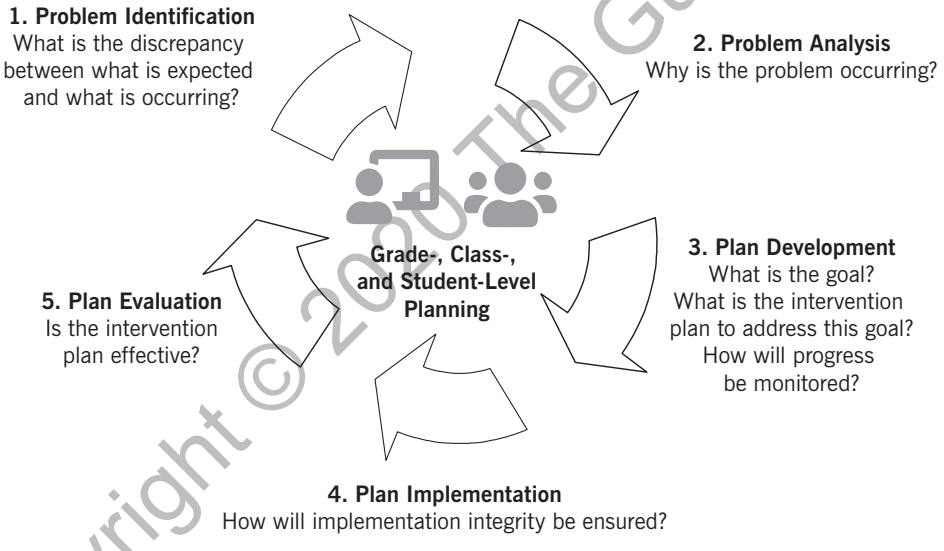

FIGURE 1.3. Using the problem-solving model for grade-, class-, and student-level planning.

THE NEED FOR DATA-DRIVEN SCHOOLS

Federal legislative, policy, and societal changes since the turn of the 21st century have contributed to increased attention on the importance of building a data-driven school like the one described in the opening anecdote. For example, the No Child Left Behind Act (NCLB; 2001), as well as the most recent reauthorization of the Elementary and Secondary Education Act (ESEA), renamed the Every Student Succeeds Act (ESSA; 2015), have highlighted the importance of schools assessing and meeting the needs of all students, including those from special population subgroups, such as minority students and students receiving

free/reduced-price lunch and special education services. The Individuals with Disabilities Education Improvement Act of 2004 (IDEIA; 2004) stressed the need to implement and use data to monitor the response of at-risk students to research-based interventions. Data-driven personnel evaluation models across the country have added a focus in recent years on assessing the impact that individual teachers have on the academic growth and school engagement that their students demonstrate.

All of this has occurred within the context of increased discussion of "big data" and the emerging field of "data science" (Davenport & Patil, 2012). To this point, these discussions have taken place primarily within the business realm. It is therefore not surprising that while the job description and proposed training for data scientists includes an emphasis on technical and statistical expertise and the ability to clearly communicate results to others, it does not appear to address the importance of ongoing systems consultation and problem solving. The data scientist is portrayed as an expert. While we, of course, agree that leaders within data-driven schools need to already have, or be able to develop, expertise in data analysis, we also believe it is equally important, if not more important, that they have expertise in collaborating with other educators to build the skills of these educators in data analysis and help them connect data to changes in instruction and more positive outcomes for students. We see the "data scientist" within schools (referred to in this book as a "data leader") not as self-sufficient but as the facilitator of and catalyst for the creation of a data-driven school.

This book is intended as a guide for these leaders in understanding the systems-level problem-solving process that can serve as the engine of a data-driven school, the data-analysis teaming process that can provide the school with a roadmap for moving forward, and the technology tools and relationships that can help foster future data leaders and build the capacity for creating such a school.

While the need for data-driven schools has become more of a focus in recent years due to the factors described above, it is by no means a new concept. Tiered problem solving and data-driven decision making within schools has a long history in education, dating back at least to the 1970s. Neither will the need for data-driven schools disappear as legislation, policy, or society changes, especially if data-driven schools are presented not as a new initiative with a potentially controversial name and/or associated baggage but as an integrated "way of doing business." We have all had this experience with systems-change efforts in schools in which we have worked. These schools have been successful in fostering effective focused collaboration among staff because they avoided "overfocusing" on the name of the framework involved (e.g., PLCs, instructional support teams) and instead stressed the key tenets of the framework as critical elements of the way the school would be doing business from now on.

KEY TENETS OF A DATA-DRIVEN SCHOOL

In that spirit, we next briefly review the key tenets of a data-driven school that serve as the overarching framework for this book—namely: (1) strong leadership with buy-in from key stakeholders, (2) a comprehensive assessment system, (3) easy access to appropriate data for all staff, (4) the time and resources for all staff to examine these data, and (5) clear connec-

tions between data and potential interventions at the district, school, and classroom levels. We believe that following these key tenets is critical in building and sustaining a school culture that embraces and utilizes—rather than pushes out or discredits—data as part of the school's efforts to improve student outcomes. When schools push out and discredit data, it has been our experience that this occurs most often because of a lack of understanding of the data, insufficient belief in the value of the data (e.g., "What you are measuring doesn't matter to me or my students"), and/or fear about how the data will be used (e.g., to evaluate individual teacher performance and determine that teachers "are not doing their job"). To combat these instincts and create a truly data-driven culture within schools, schools must work to develop an atmosphere in which staff trust that (1) they will be provided with the training and support to access and interpret the data they need, (2) while data will be considered, so will teacher observations and professional expertise, (3) all staff "own" all students, and (4) data will be used to identify needs and provide support to staff and students, not to evaluate individual teachers.

Strong Leadership with Buy-In from Key Stakeholders

Administrative support is critical because school and district leaders, like principals and superintendents, are the key decision makers in school districts—they also hold the purse strings. Administrators make the final decisions about the allocation of financial and human capital resources that are essential to the success of initiatives within a data-driven school. That being said, they do not need to be the ones who initiate the transition to a data-driven school. That impetus can come from other data leaders within the school—including general or special education teachers or related services personnel (e.g., school psychologists). If the movement toward creating a data-driven school is to gather momentum and ultimately garner success, however, administrators must be brought on board.

Not only must the initiator of the data-driven movement—if not an administrator—have the support of administration but this initiator also must be able to cultivate the additional buy-in of other key stakeholders. In 2010, Derek Sivers, an American entrepreneur best known for being the founder and former president of CD Baby, an online CD store for independent musicians, delivered a TED Talk entitled "How to Start a Movement" (*www.ted.com/talks/derek_sivers_how_to_start_a_movement*), during which he showed a video depicting a young man dancing awkwardly, but enthusiastically, in a park to music being blasted from a stereo boom box. As Sivers described the potential connection between this video and effective leadership strategies, one by one other young people in the park began joining the initial dancer. One of the key messages demonstrated in this video and explained by Sivers is the importance of "first followers." Sivers stresses that these first followers—in this case, the first people to join the initial dancer—transform the "lone nut" into a "movement."

Not all followers are created equal in a potential data-driven school, however. Malcolm Gladwell (2000), in the popular book *The Tipping Point*, highlights this in a unique and memorable way by describing the essential roles of "connectors," "mavens," and "salespeople" in facilitating systems change. *Connectors* know a lot of people. If they get inspired by a systems change, that inspiration is likely to spread quickly given their numerous connections to others within the system. *Mavens* are not only knowledgeable but are eager to talk

to others about what they know. If they begin to learn about a change effort, they will share what they are learning with others, helping to educate the system on the key components of the initiative. Finally, Gladwell highlights the need for *salespeople* as well, people who have the skills to persuade others when they are unconvinced of what they are hearing from connectors or mavens.

We have seen firsthand the importance of paying attention to these special roles of potential stakeholders when an elementary school at which one of us (Hyson) worked was adopting the PLC school reform model. The school's principal at the time recognized that any proposed school reform effort was in danger of being rejected by the school's veteran staff, since they had already been through many other unsuccessful reform efforts over the years. As a result, he intentionally invited a fifth-grade teacher with over 20 years of experience who was well-known and respected by other veteran staff in the building to be a part of the select team of staff that would be involved in intensive initial training in the model, including traveling to Lincolnshire, Illinois, to visit Adlai E. Stevenson High School, where PLC innovator Richard DuFour had been principal and superintendent. If this teacher bought into the potential benefit of PLCs, because she was a key connector, the movement would be much more likely to gain increased momentum among others in the school.

Similarly, we realized through our experience as data coaches with large school districts or cooperatives that a "lone nut" approach to helping schools transform into data-driven schools had little chance of being successful. Instead, we found it more effective to identify cohorts of educators within the schools most likely to take on leadership roles in this effort (i.e., principals, school psychologists, and district assessment coordinators/research and evaluation directors) and conduct a series of face-to-face and virtual communications with these cohorts to cultivate their commitment to and understanding of the key components of the process. These cohorts of individuals were well connected like the fifth-grade teacher in the previous example. Just as important, they were also more likely because of their data-driven roles within their schools to be willing and able to have conversations with others about what they were learning through these face-to-face and virtual communications, thus serving as mavens within Gladwell's (2000) framework as well.

A Comprehensive Assessment System

Another key tenet of a data-driven school that is discussed throughout this book is a comprehensive assessment system. This system must include assessment data for multiple unique purposes:

1. *Screening,* in which all students in a school are assessed using a benchmark formative assessment tool linked to the outcome(s) that the school is working toward (e.g., general outcome measures [GOMs], computer adaptive tests, or common classroom tests of learning standards identified by grade level or content area) to determine whether general education instruction is meeting the needs of all students and to identify which students may need supplemental support to be successful.
2. *Diagnostic,* in which data are used to identify which specific skill or behavior deficits may be getting in the way for students not meeting standards.
3. *Progress monitoring,* in which the growth of students not meeting standards is

tracked using GOMs or skill-specific mastery monitoring tools to see whether they are closing the gap toward standards.

4. *Outcomes,* in which data are used to assess the degree to which students have learned what they have been taught during a predetermined period (e.g., annual state accountability tests, classroom unit tests).

It should be noted that when we use the term *diagnostic* above, we mean the process of conducting a fine-grained analysis of the student's academic or behavioral skills, which is essential to designing interventions that effectively target the student's deficiencies. The term *diagnostic* here does not mean the process of either determining a student's disability category (e.g., specific learning disability [SLD]) or analyzing a student's basic psychological processes (e.g., visual–motor functioning, auditory processing), because these types of assessment have not been empirically validated for the purpose of identifying effective interventions (Burns, 2016). Our approach here favors approaches based on a skills-by-treatment interaction rather than an aptitude-by-treatment interaction.

In a series of interviews conducted with school psychologists across Minnesota, Hyson (2006, 2007a, 2007b) confirmed that this comprehensive assessment system was seen by most interviewees as being a critical building block of a data-driven school. There is a difference, however, between seeing a comprehensive assessment system as a critical building block and implementing it with reliability and validity.

Ensuring the reliability of a comprehensive assessment system is particularly important because assessments must be administered with fidelity if results from those assessments are to be used to make instructional decisions within a data-driven school. Efforts to safeguard the reliability of the system must start with providing sufficient training to those administering or proctoring assessments within the system, as well as to those completing any necessary data entry tasks associated with the assessments. This training should include periodic initial trainings for new staff or staff changing roles, as well as refresher trainings and fidelity checks to guard against drift following an initial training.

Administrators' support is critical to the success of these efforts. Not only must principals and superintendents provide sufficient time for these trainings to occur but if the assessments involve technology, they must also commit to providing the infrastructure and support within the school or district necessary to limit challenges associated with the technology requirements and ensure an efficient and effective response to challenges if they do occur. Finally, within a comprehensive assessment system, assessments should only be used for the purposes for which they are reliable. For example, when differences among individual progress monitoring data points or outcome assessment test strands are being analyzed, data leaders within data-driven schools should remain aware of the error associated with these scores and be careful not to overinterpret small differences. Chapter 9 highlights the need for data leaders to possess and/or develop the data literacy skills necessary for taking a leadership role in these efforts.

The assessments used within a school's comprehensive assessment system must demonstrate adequate validity as well. One of the most critical forms of validity to evaluate within a comprehensive assessment system is criterion validity or the degree to which scores from one assessment are associated with scores on another assessment (typically this other assessment is seen as the "gold-standard" criterion and/or measures some critical outcome). For

example, data-driven school personnel should ask themselves: "Are the screening assessments we're using related to the outcomes that our school views as important (e.g., state accountability test results)?" Chapter 2 discusses this issue in greater detail within the context of explaining the process for setting and using targets predicting from screening assessments to outcome assessments. As outlined in Chapter 2, data leaders and practitioners find most useful those screening assessments that research demonstrates to be highly correlated with these outcomes (e.g., reading curriculum-based measures [CBMs]; computerized adaptive tests, such as the NWEA Measures of Academic Progress [MAP] test).

Guaranteeing the "face validity" or acceptability of assessments within a comprehensive assessment system is equally essential. Staff and students must believe that assessments within a school's comprehensive assessment system are valid and can and will be used to help teachers teach and students learn. If students believe assessments are face valid, they will more consistently put forth their best efforts, making it more likely that the results will reflect their true ability or achievement. If teachers believe assessments are face valid, they will be more likely to communicate that belief consciously or subconsciously to their students, and if they are involved in assessment administration, they will be more likely to administer the assessment with fidelity, making it more likely again that results will reflect students' true ability or achievement. Convincing teachers of the face validity of reading CBMs is particularly challenging from our experience. One-minute measures of reading fluency are often used to screen or monitor student growth in reading. These CBMs are not meant to comprehensively measure reading achievement but instead to provide a quick and easy marker of student risk and/or progress. Teachers taught that assessments should directly measure what they teach may have difficulty seeing these assessments as face valid without the support and guidance of a data leader.

In our consultations with school districts concerning this building block, we have found the "Identifying Gaps in Your Comprehensive Assessment System" activity (Appendix 1) to be beneficial in helping consultees to identify—and address—potential gaps within their assessment systems.

Prior to the activity, it is critical to overview the four purposes of data within a comprehensive assessment system listed above to ensure that those completing the activity share the same operational definitions of the terms used. The facilitator then shares a copy of the activity handout with each participant. Each participant or small group is asked to start by writing in each of the four quadrants within the table the names of assessment tools that the school *administers* to address that purpose within a comprehensive assessment system, whether it be screening, diagnosis, progress monitoring, or outcomes-related decisions. It is critical to clarify for participants that one assessment administered in the school may be listed in more than one quadrant if it is used for multiple purposes. For example, the annual state accountability test might be used for both diagnosis of specific skill strengths and weaknesses and for outcomes-related decisions about whether students met the standards.

As a follow-up, participants are also asked to circle the names of assessments that are actually being *used* to make instructional decisions. This part of the activity can be enlightening, as it can uncover those assessments that are being given, but the results of which sit in a cabinet or on a server without having any impact on changing the way in which teachers teach the students who took the assessments. However, it is important to caution participants against assuming that those assessments that are being administered but not

used should simply be eliminated. If the results are not being used because staff have yet to be trained and/or provided with the time and resources to examine the results, we recommend that those steps be taken before considering eliminating the assessment. If, on the other hand, staff have been trained in using the results and provided with the time and resources to examine and connect the results with instructional decisions, and the school has determined that the results cannot be effectively used to change instruction, then it may be appropriate to stop giving the assessment.

Easy Access to Appropriate Data for All Staff

In addition to having strong leadership and buy-in and a comprehensive assessment system, a third key tenet of a data-driven school is that all appropriate school staff must have easy access to data gathered through this comprehensive assessment system. Technology tools used to access the data need to be user-friendly and require just a few clicks for the everyday consumer to get to the most important and frequently used reports. The school cannot be reliant on one or even a few data experts to create and interpret these reports. While this book certainly promotes the importance of data leaders, they must, in essence, be continuously working themselves out of a job by building the capacity of all staff to create and interpret reports themselves. For this to happen, however, the data included in reports have to be relevant to the questions that are important to teachers and administrators. If not, staff will not access them, and they will not serve their ultimate purpose of spurring change in classroom instruction. Finally, technology tools should ideally provide users with an integrated "one-stop-shopping" experience, including data addressing all four purposes of assessment within a comprehensive assessment system in one place. Teachers and administrators are busy people. The more websites they need to go to and the more passwords they need to remember, the less likely they will be to come back. All of these issues must be balanced against the critical importance of maintaining data privacy and confidentiality. The Family Educational Rights and Privacy Act (FERPA; 1974) requires that only individuals with a "legitimate educational interest" in a student should have access to the student's performance data. As schools move from the traditional educational model in which individual teachers work in isolation with their classrooms of students to models in which teams of staff engage in focused collaboration across classrooms, grade levels, and content areas, administrators and data leaders need to engage staff in ongoing conversations about what these changes mean for continued appropriate access to student data. The use of technology tools for data management is discussed in detail in Chapter 8.

The Time and Resources for All Staff to Examine the Data

To communicate the integral importance of this focused collaboration and to avoid the previously described DRIP school culture, school staff must be provided with the time and resources necessary to examine the comprehensive assessment system data they access. This is the fourth key tenet of a data-driven school. PLC proponents consistently argue that a non-negotiable step in providing this time and these resources to staff is that the time be provided *within the school day.* Inviting teachers to meet with their colleagues to access, interpret, and use data to drive instruction solely before or after school communicates the

message that this activity is an add-on. Scheduling these meetings during the workday, on the other hand, says that focused collaboration is an integral part of teachers' jobs and just as important as student contact.

Time during these meetings needs to be spent not on everyday logistical items but on systems-level data-driven decision making, including such tasks as:

1. Evaluating the effectiveness of instruction and identifying and assessing the impact of interventions designed to provide supplemental support;
2. Identifying students in need of this supplemental support; and
3. Monitoring the progress of these students in response to the support.

While staff should not be dependent on a single or small number of data leaders to produce and interpret reports for them, these data leaders should serve other important functions, including facilitating data-driven discussions, providing face-to-face and virtual training, and helping individual staff, teams, and schools or districts set and monitor their progress toward appropriate data-driven goals. More detailed discussion of data-analysis teaming at the district and school levels with respect to academic and behavioral issues can be found in Part II.

Clear Connections between Data and Potential Interventions at the District, School, and Classroom Levels

Finally, the fifth key tenet of a data-driven school is that administrators and data leaders clearly articulate the connections between data and potential interventions at the district, school, and classroom levels. Avoiding a DRIP culture involves not only providing time and resources for staff to access and interpret data but also for connecting those data with instruction and intervention.

In a data-driven school, in addition to providing staff with easy access to data, it is also critical to provide them with easy access to information about research-based interventions to address student needs identified through the data. Chapter 4 provides readers with recommendations regarding online clearinghouses, as well as frameworks, for identifying and monitoring the impact of data-driven interventions. In examining the data and attempting to use the data to identify interventions, data leaders and staff must remain aware of the potential limitations of the data. Assessments must be both reliable and valid for the purpose for which they are designed for data leaders to be confident in using them to identify data-driven interventions. To do so, data leaders must have, or be able to develop, assessment and intervention literacy skills. Chapter 9 of this book further addresses this need.

THE DATA-DRIVEN SCHOOL AND MTSS

Throughout this text, we conceptualize that the key features of a data-driven school are best implemented within an MTSS structure. Previously or synonymously identified as RTI models, MTSS has been widely promulgated as a quintessential data-driven, research-based structure for schools. While other sources provide more extensive treatments of

MTSS (Batsche et al., 2005; Brown-Chidsey & Steege, 2010; Burns & Gibbons, 2012), a brief summary follows.

An MTSS typically consists of three tiers of increasingly specific assessments and increasingly intensive interventions, and is intended to help school personnel meet both the academic and behavioral–emotional needs of all students. An MTSS is typically depicted graphically as a triangle (see Figure 1.4), with the width of the triangle indicating the number of students and the height indicating the increasing intensity of the supports provided. In Tier 1 of the MTSS, all students receive core instruction and classroom management that is based on research-based practices that have been shown to produce high levels of proficiency and low levels of discipline problems. Universal screening, as described previously, is conducted three times per year, and data-analysis teams meet on this schedule to review the results and to plan and evaluate core instruction and management tactics. These deliberations support the use of research-based practices, as well as the differentiation of instruction for learners who display a wide range of academic skills.

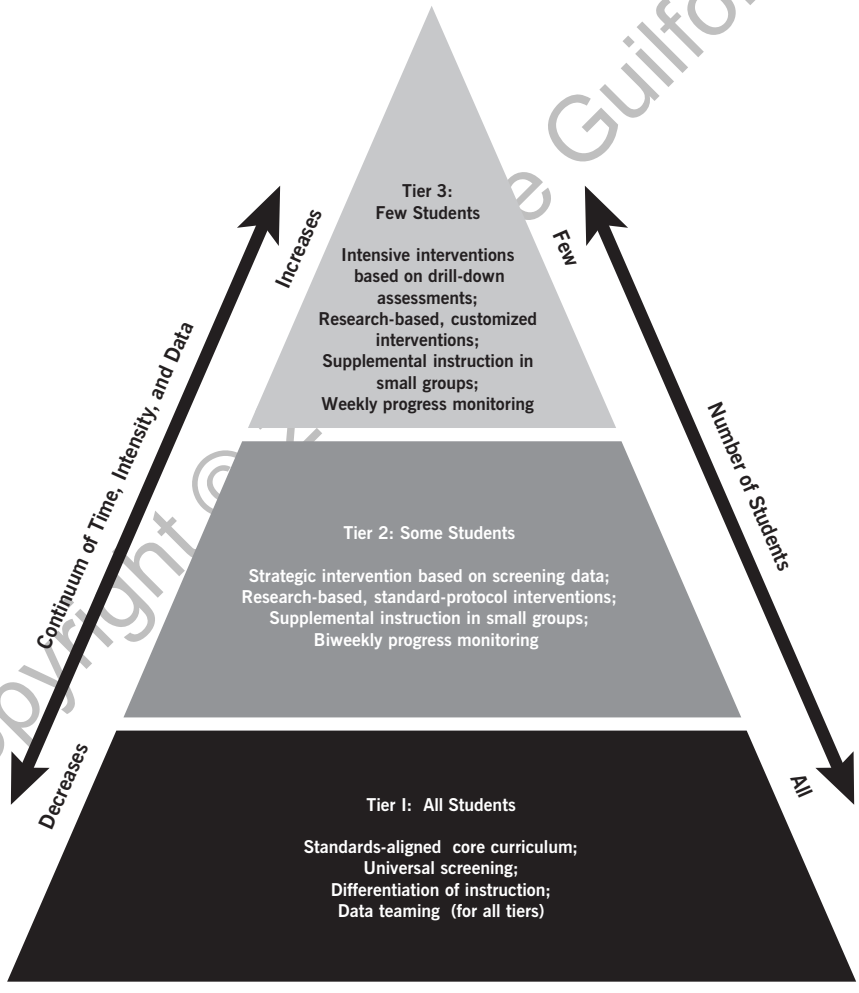

FIGURE 1.4. Graphic depiction of MTSS. Reprinted with permission from Kovaleski, VanDerHeyden, and Shapiro (2013). Copyright © 2013 The Guilford Press.

In Tier 2 of the MTSS, students who do not attain benchmark performance on the universal screeners and who are not projected to attain benchmark by the next administration are provided with group-based supplemental interventions during additional periods of the school day (while they are maintained in the core instructional program). Schools typically use "standard-protocol" intervention programs and group students according to common needs. Standard-protocol interventions are typically commercially available intervention packages that are based on research trials that have proven the effectiveness of the procedures to improve student performance. The concept here is that if these interventions are closely matched to students' assessed needs (through universal screening) and if the interventions are delivered with a high degree of fidelity (i.e., according to the procedures prescribed in the intervention directions), the majority of students receiving the intervention should make desired gains. The amount of progress made by students in Tier 2 is determined by analysis of progress monitoring data. For students in Tier 2, progress is typically monitored every other week. Examples of interventions used in Tier 2 are included in the extensive case studies described in Chapters 6 and 7.

Students who fail to make adequate progress during Tier 2 interventions are provided with additional and more intensive supports in Tier 3. In this tier, diagnostic (later also referred to as "drill-down") assessments are used to pinpoint specific skill deficiencies and to plan for more incisive interventions. Like Tier 2, students receiving Tier 3 interventions continue to participate fully in Tier 1 core instruction, and standard-protocol interventions typically serve as the base interventions for the identified students. However, in Tier 3, interventions are more precisely customized to match students' needs based on the assessment data. Although not legally a special education service, interventions at this point begin to approximate many of the hallmarks that have historically been associated with special education, including decreased teacher–student ratio, the amount of time allocated to the intervention outside of core instruction (both in amount of time per day and days per week), the level of explicitness of the instruction, and the number of opportunities for the student to respond. In addition, because students in this tier often display both academic deficiencies and behavior concerns, assessment and intervention in both domains frequently occurs. Students' progress in this tier is typically monitored weekly, although, as we discuss later in the book, how frequently progress is monitored should also be dependent on other factors, including the sensitivity of the progress monitoring tool to change.

It is anticipated that full implementation of an MTSS will result in high percentages of students demonstrating academic proficiency and appropriate behavior. Authors in this area frequently note that Tier 1 should be effective in and of itself for 80% of students, with 15% of students needing Tier 2 support and 5% needing Tier 3 services (Batsche et al., 2005). It is also expected that, as increasingly intensive interventions are provided in Tiers 2 and 3, students will accelerate their progress, with more students receiving Tier 2 interventions "returning" to Tier 1 and students in Tier 3 moving to Tier 2 (Shapiro & Clemens, 2009). It is also understood that students who fail to make acceptable progress through three tiers of intervention should be referred for a full and individual evaluation for eligibility for special education. Kovaleski, VanDerHeyden, and Shapiro (2013) provide detailed procedures on how data derived from students' response to intervention, as demonstrated through the tiers, can be used to inform the special education evaluation process.

KEY ISSUES

- The five-step problem-solving model can be used not only to address individual student problems but also schoolwide problems, like the one illustrated in the playground story.
- Administrator–staff, staff–student, and staff–family relationships are critical to effective use of the problem-solving model at the schoolwide level.
- While administrators do not need to initiate the transition to a data-driven school, their support is critical, since they are the key decision makers within schools.
- Leaders must also be able to recruit first followers, including those who can explain, make connections with, and sell the initiative to others.
- A comprehensive assessment system—including assessment data that address screening, diagnosis, progress monitoring, and outcomes-related decisions—is also a key component of a data-driven school. Completing the "Identifying Gaps in Your Comprehensive Assessment System" activity (Appendix 1) can help schools identify and address their assessment-related needs.
- Data-driven schools must not rely on individual data experts to provide data to staff, but instead ensure that all staff have independent access to the appropriate assessment data and the time and resources to help them interpret the data and make instructional decisions.
- Staff in data-driven schools must also have easy access to information about research-based interventions to address the student needs they identify so as to avoid a DRIP culture.
- These key tenets of a data-driven school are best implemented within an MTSS.