

Chapter 8

Use of Data

Highlights of Findings

Districts — perhaps because of capacity factors — report that they are more likely than schools and teachers to analyze and use student performance data. According to most districts, accountability, assessment, and curriculum and instruction personnel examine and analyze student assessment data “to a great extent.” Conversely, many fewer districts report that teachers use data “to a great extent.” The disaggregation of data by various factors (such as gender and socioeconomic status) is also more like to occur at district levels than at school or classroom levels. One explanation is that technical capacity to analyze data appears greater at the district level. Many districts are, however, attempting to provide school-level personnel with greater professional development opportunities on how to use and analyze data more effectively.

Small districts have inadequate resources to analyze and evaluate data and to assist schools and teachers in using data to improve programs. District interviews suggest that larger districts have the expertise and technology necessary to conduct more sophisticated analyses of data.

According to districts, engaging in analysis of student assessment data to meet state and federal reporting requirements occurs more frequently than analyzing data to improve instruction. Most districts report using data to satisfy reporting requirements first and foremost, and to a slightly lesser degree to improve instruction, to identify students with special needs, and to gauge performance of student subgroups. The identification of teachers who need assistance was rarely cited as a purpose of data use and analysis.

School-level interviews confirmed that teachers are less likely than principals and district administrators to use and analyze student assessment data. While districts report that they are using and analyzing data more than personnel at the school and classroom level, interviews with principals indicate that they use and analyze data to a larger, yet varying, degree. Teachers, however, rarely mentioned using data at all. Thus it seems likely that the use of data has had little, if any, impact on instruction in most classrooms.

Key aspects of a strong accountability system are the assessment of whether goals have been met, the evaluation of progress, and the identification of areas for commendation or improvement. These functions require the collection and analysis of sound data about student achievement and school performance, and the dissemination of the results in ways that are understandable to all stakeholders in the educational system. Each piece of the process, however, presents challenges. A database system may need to be developed. Analysis must be conducted and then presented appropriately. Data must be accessible to all who will need to use it, and those using it must know or learn how to do so. In particular, districts and schools must have the capacity to use data to improve their educational programs, and teachers must be able to use data to inform their classroom instruction.

Unlike some other states, such as Texas, California does not currently have a statewide student data system. On the district survey, 50 percent of respondents said that a statewide student data system would help them to analyze student assessment data better. In the absence of such a statewide system, it has been left to each district to develop its own system for the collection and analysis of data.

For the purposes of this study, the overarching research question on the topic of data use was:

How are data from local accountability systems used?

Patterns of Data Use

My goal...is that all levels of the system, particularly teachers and administrators, understand the data they get that is provided centrally, know how to supplement it with meaningful data from the site, and know how to use that information on a regular basis to change instruction.

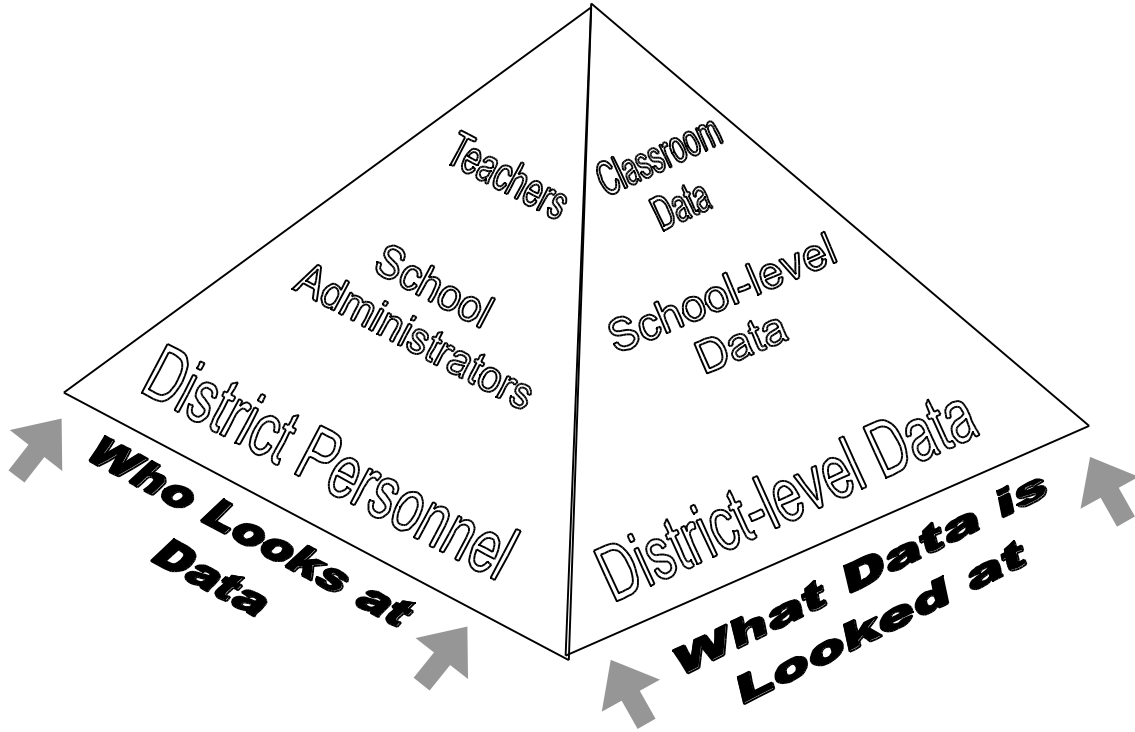
—District Administrator

More analysis of student assessment data occurs at the district level than at the classroom level.

Based on survey results and interviews, the analysis and use of student assessment data appears to take the form of a pyramid, with the most extensive use occurring among district-level personnel and the least extensive use occurring among teachers. (See Figure 8.1.)

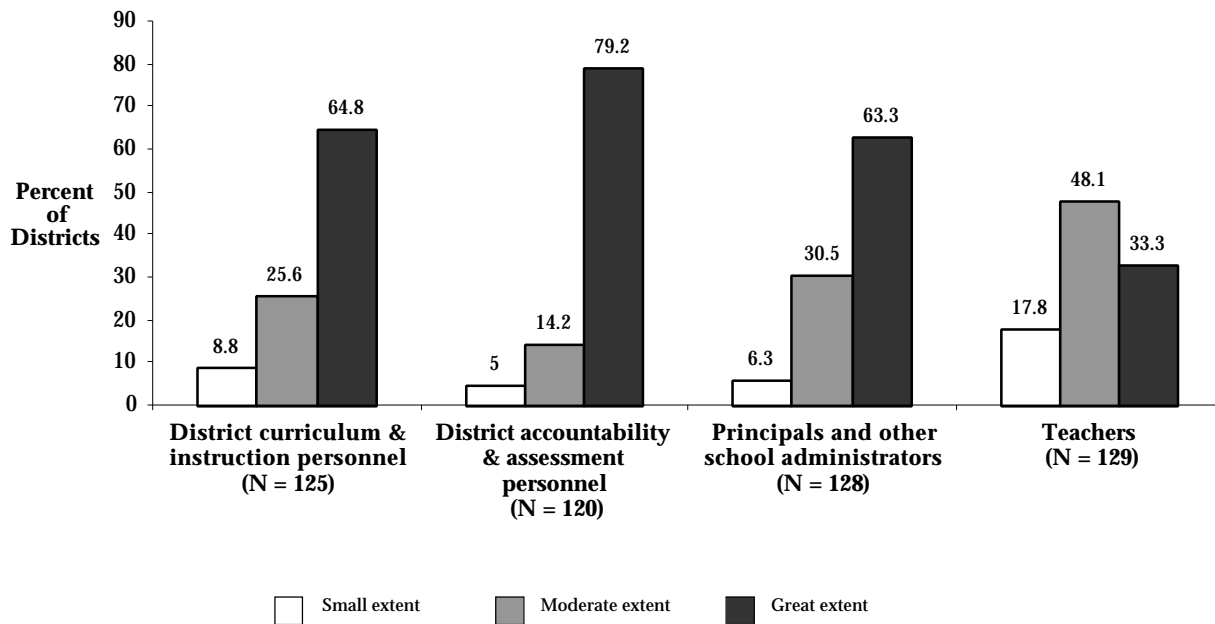
Figure 8.1

Pyramid of Use of Student Assessment Data



District accountability and assessment personnel make the most intensive use of data; 95 of 120 survey respondents (79.2%) indicated that these personnel examine and analyze student assessment data “to great extent.” The next most commonly cited groups who use data “to great extent” were district curriculum and instruction personnel, selected by 81 of 125 respondents (64.8%), and principals and other school administrators (generally speaking, throughout the district), selected by 81 of 128 respondents (63.3%). Only 33.3 percent of respondents, however, said that teachers in their district examine and analyze student assessment data “to great extent.” (See Figure 8.2.)

Figure 8.2
 District Reporting of the Extent to Which Groups Examine and Analyze Student Assessment Data



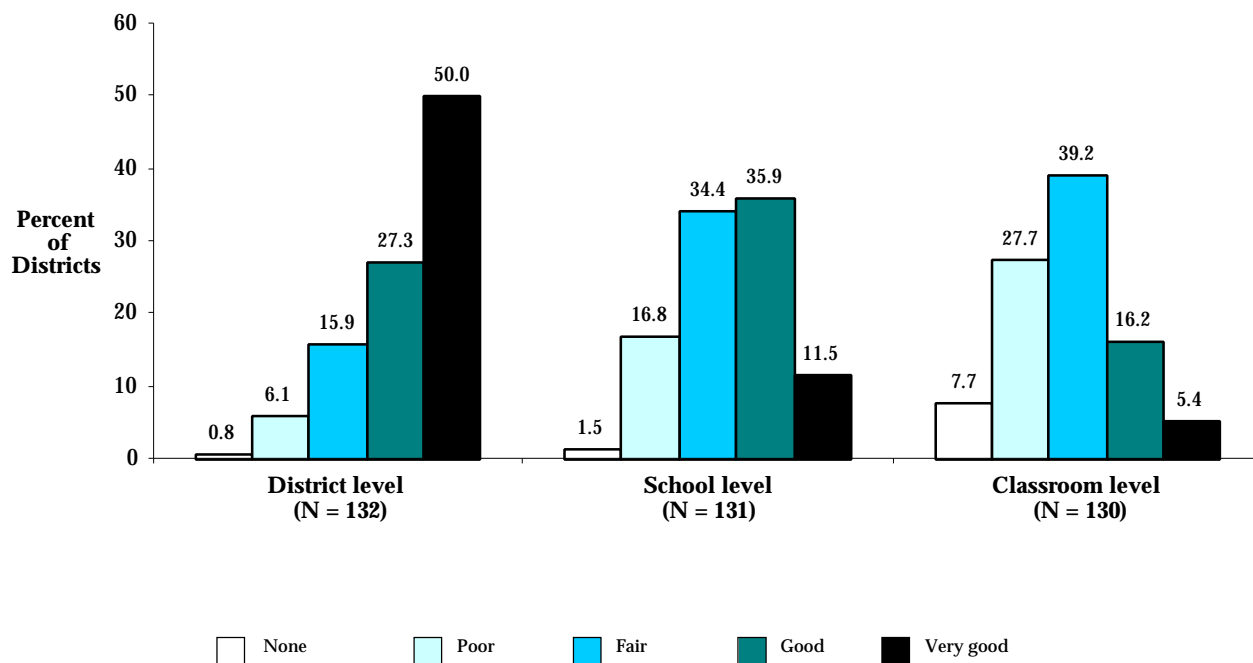
NOTE: Additionally, “Not at all” was marked once (0.8%) for the first, second, and fourth groups, and “Don’t know” was marked once (0.8%) for the second group.

Figure 8.2 also shows that in nearly 20 percent of surveyed districts, teachers examine and analyze student assessment data only “to small extent.”

This pattern of data use parallels survey respondents' ratings of the technical capacity for analysis of student assessment data at district, school, and classroom levels. (See Figure 8.3.) More than 75 percent of respondents rated the capacity to analyze data at the district level as "good" or "very good"; 47.4 percent rated capacity to analyze data at the school level as "good" or "very good"; and only 21.6 percent rated capacity to analyze data at the classroom level as "good" or "very good." Apparently, then, not only is teachers' use of data limited, as noted above, but the *capacity* to analyze data at the classroom level is limited as well.

Figure 8.3

District Ratings of the Technical Capacity at Three Levels within the District to Analyze Student Assessment Data



NOTE: Additionally, 5 respondents (3.8%) marked "Don't know" for the Classroom level.

Responses to survey questions about the disaggregation of student assessment data also followed the same pattern. (See Figure 8.4.) Disaggregation of data (by several different categories such as gender, race/ethnicity, and LEP) occurs most frequently at the district level, slightly less often at the school level, and substantially less often at the classroom level. For example, many respondents reported that their districts disaggregate data by gender at the district level (76.2%) and at the school level (70%). Far fewer districts reported that they disaggregate data by gender at the classroom level (38.5%). Nearly 28 percent of respondents reported that their districts do not disaggregate data by *any* categories at the classroom level, compared to only 3.8 percent and 3.1 percent of respondents reporting no disaggregation at district level and school level, respectively.

Figure 8.4

District Reporting of Categories and Levels by Which They Disaggregate Student Assessment Data
(Percent of districts)
(N = 130)

	Gender	Race/ethnicity	SES (i.e., free, red. lunch)	Title I	LEP	Special Ed	Gifted & Talented	Migrant Status	None
a. District level	76.2	80.8	61.5	84.5	92.3	91.5	86.2	41.9	3.8
b. School level	70.0	76.9	54.6	80.6	90.0	88.5	82.3	37.2	3.1
c. Classroom level	38.5	36.2	23.1	45.4	52.3	47.7	41.5	17.7	27.7

The categories for which the highest number of districts disaggregate data are those for which such disaggregation is required for state and federal reporting: Title I, LEP, Special Education, and Gifted and Talented.¹ Disaggregation by gender, race/ethnicity, and socioeconomic status (e.g., free and reduced lunch) — categories that to date have been less heavily emphasized in reporting — occurs among fewer districts.

Large districts have greater capacity for use and analysis of data than do smaller districts.

District interviews suggest that district capacity to use and analyze data may be a function of the size of the district. Large districts seem to have adequate data collection and analysis capacity at the district level. In one large district that was visited, for example, the district

¹ An exception appears to be migrant status, which districts are required to report on for the Student Achievement School Report, but for which only 41.9 percent of survey respondents reported district-level disaggregation. This may be a function of many districts having negligible migrant populations.

office gathers and reviews extensive data. They collect data about where each student is on each standard, as measured by standardized test scores, grades, teacher assessments, and a writing rubric. Data are broken down by classroom and disaggregated by factors such as gender, race, school, and LEP.

The accountability manager in another large district spoke similarly of disaggregating school-level data by gender, ethnicity, special education, gifted and talented, and socioeconomic status across all of the measures in their accountability system. She also mentioned that the district does “some additional work with the SAT-9 data” beyond what the test publisher provides. Currently the district is working on the establishment of a user-friendly system that will enable schools to access data electronically. In fact, not only will schools be able to access the data, they will be able to manipulate it, enter their own site data, ask questions, make comparisons, etc. — all whenever they want to. The district has a staff member who is working full time on programming the new system to enable schools to perform such analyses.

Smaller districts, however, indicated that they do not have enough staff for large-scale data analysis, and some feel overwhelmed by the demands on them. District personnel from one medium-sized district who were interviewed commented that, although they collect much data, they don’t feel that they have the time or staff to analyze it properly or to make use of it to improve their program. On the survey, only 6 percent of districts reported that they needed no additional resources and assistance in the analysis and use of data. Over 60 percent of districts cited needs for professional development, better technology, and more staff with evaluation or statistical background. (This will be discussed further in Chapter 11, “Challenges and Assistance.”)

Districts are trying to foster greater and more effective use of data at the school level.

Even in districts that do have substantial data analysis capacity at the district-level, several administrators who were interviewed expressed concerns that school-level capacity is uneven, at best. In one large district, for example, an administrator explained that the district Research and Evaluation office organizes data on several different measures and reports it back to each school. This administrator, however, said he wasn’t sure “how systematically” school sites used the data.

An administrator in another large district said that some district schools “are very sophisticated users of data” but others are less so:

We have been reading the write-ups that schools just submitted [for CCR], and found that many of our schools don’t know how to talk about [data]. We thought they did — we told them. They don’t know the language to use in talking. They get “percent” mixed up with “percentile” mixed

up with “percent at or above” mixed up with “percent right”; they don’t know how to talk about it. Which, obviously, if they can’t articulate it, means there’s a knowledge base that still needs to be built. And I need to be able to help them talk about it, because if they can talk about it accurately, they can use it better.

She then went on to say that one of her “major goals for the next year is to build that capacity.” Other districts, too, indicate that they are making efforts to build capacity of school-level personnel to use data. On the survey, 94.6 percent of districts reported that they provide support or opportunities for school administrators to get professional development in how to analyze and use student assessment data, and 91.5 percent said that they provide such support for teachers.

The survey did not collect information on the nature and extent of such support and opportunities, but interviews provided a glimpse into what some districts are doing. In one district, for instance, principals receive some training in the interpretation and use of data at the annual principals’ institute. Additional training is being considered.

Other districts attempt to provide professional development for teachers as well as for principals. In one such district, the Assistant to the Superintendent stated that one of the district’s main goals for this year is to teach principals and teachers how to read their data; in fact, she said, teaching data skills is one of the main focuses for professional development. The Director of Research and Evaluation in this district also mentioned that some professional development opportunities on data analysis are provided to teachers, and he said that his office tries to make data reports as easy as possible to understand. This year he has received a lot more requests from teachers for classroom data than in the past, perhaps as a result of the increased emphasis on the SAT-9.

In yet another district, where teachers receive disaggregated data for their classrooms, some training is provided on how to analyze the data (although according to the administrator who was interviewed, skill levels are inconsistent). At the elementary level, training is provided to the school principal and administrators, who are supposed to pass it on to the teachers. A number of teachers are also selected to be trainers; these teachers are trained and then sent back to their school to train others.

Teachers interviewed in this district did not mention receiving professional development in the use of data, but one principal mentioned that the district provides principals with technical assistance in how to use data. He said that principals have three or four meetings per year just to go over test results with district staff and to discuss how to best utilize the data. However, one of the other principals who was interviewed in this district admitted that she has trouble working with and understanding the data. Although she thought that having and understanding the data was important, she felt that she was “not very good at it.”

District-Level Purposes of Data Use

Districts use assessment data first and foremost to satisfy reporting requirements.

Survey results suggest that satisfying reporting requirements constitutes the most frequent use of district-level data, as Figure 8.5 shows. When presented with a number of possible reasons why a district might collect and analyze student assessment data and asked to rate the extent of use of data for each one, districts emphasized “to satisfy state and federal reporting requirements” far more than any other listed purpose. Indeed, 74.6 percent of respondents indicated that their district uses data for this purpose “to great extent,” and another 22.3 percent of respondents marked use of data for this purpose “to moderate extent.”

Figure 8.5

District Reporting of Reasons the District Collects and Analyzes Student Assessment Data
(N = 130)

	District does not use data for this purpose at all	District uses data for this purpose to small extent	District uses data for this purpose to moderate extent	District uses data for this purpose to great extent
a. To satisfy state and federal reporting requirements	0	3.1	22.3	74.6
b. To design new district-wide programs for schools	2.4	29.1	45.7	22.8
c. To improve instruction in all district schools	0.8	12.3	41.5	45.4
d. To rate or rank district schools	48.4	17.5	14.3	19.8
e. To identify schools that need assistance	15.1	23.0	29.4	32.5
f. To help schools identify individual students who need assistance	3.1	14.1	35.2	47.7
g. To identify teachers who need assistance	46.8	33.3	14.3	5.6
h. To identify factors that influence student achievement	12.4	19.4	43.4	24.8
i. To gauge the performance of student subgroups across district schools.	6.4	14.4	40.8	38.4

Similarly, required reporting appeared to be the driver for disaggregation of data, as discussed in the previous section.

Many districts report that they also use data to improve instruction, to identify students needing assistance, and to gauge the performance of subgroups.

As Figure 8.5 shows, other reasons why a district might collect and analyze student assessment data that were rated highly on the survey (i.e., many districts reported using data for these purposes to “moderate” or “great” extent) included:

- “To improve instruction in all district schools” (86.9 percent of respondents);
- “To help schools identify individual students who need assistance (82.9 percent of respondents); and
- “To gauge the performance of student subgroups across district schools (79.2 percent of respondents).

Interviews provided somewhat more depth about how use districts use data for these purposes. In one small district, for example, the administrator who was interviewed said that he found immense gains in mathematics scores at the 3rd, 6th, and 9th grade levels. In an effort to improve instruction throughout the district, he then went and asked the teachers if they could pinpoint what they were doing differently and if it could be generalized.

The importance of gauging the performance of student subgroups figured even more prominently in district interviews. Disaggregation of data was mentioned by nearly every person who was interviewed. While attention to subgroup performance might be expected for the large, diverse districts where most interviews occurred, even the smallest district, with fewer than 2,000 students, has been making an increased effort to analyze disaggregated data for subgroups, according to the district’s Director of Special Projects.

Interviews also highlighted the interrelationships between various possible uses of data, such as between improving instruction and gauging the performance of student subgroups. For example, one administrator from a large district commented:

I would like to...centrally take data across schools, just like we would like schools to do with data across kids, and find out from that data, so, what is it about reading [for example] we’re not doing well across the district? Which kids, schools, populations is it that aren’t doing well? Which ones are doing it well that we can learn from, particularly schools that are performing particularly well with populations that have traditionally been challenging? We have some examples of schools in our district that have huge numbers of very poor English learners that jump out with very successful student achievement results. So, what can we learn from them that might be replicable? Because the schools say, “Well you know, their kids don’t look like mine.” So we need to find who’s doing it with kids that look like yours so we can say, “...What can we learn?”

Areas requiring perhaps more sophisticated data analysis were rated somewhat lower, cited by 60–70 percent of respondents:

- “To design new district-wide programs for schools” (68.5 percent of respondents);
- “To identify factors that influence student achievement” (68.2 percent of respondents); and
- “To identify schools that need assistance” (61.9 percent of respondents).

The least frequently cited uses of data by districts were the identification of teachers needing assistance and the rating or ranking of district schools.

On the survey, as shown in Figure 8.5, the lowest-rated reasons for district use of data were “to identify teachers who need assistance” and “to rate or rank district schools.” In fact, 46.8 percent of districts said that they do not use student assessment data to identify teachers who need assistance *at all*, and 48.4 percent of districts said that they do not use this data to rate or rank district schools *at all*. On a later survey item, only 28.6 percent of districts said that they use an index or formula to rate the performance of schools in the district. Teacher contracts may prohibit districts from using student data in judging teacher performance, but the infrequent use of student data to rate or rank schools within a district is somewhat of a surprise. In order to hold all schools accountable, districts would seem to need to know which schools were doing a good job and which were not.

School-Level Purposes of Data Use

According to districts, schools use data to identify areas for improvement but not to make decisions about individual teachers.

As discussed earlier in this chapter, many districts are attempting to foster a higher level of data use and analysis at the school level beyond what schools already are doing. The district survey investigated current *school-level* use of student data by listing a number of possible reasons why a *school* might collect and analyze student assessment data, and asking (district) respondents to “rate the extent to which schools in your district (generally speaking, across a majority of schools) use student assessment data for each of these purposes.” (See Figure 8.6.) The top three reasons cited were:

- “To diagnose areas where students are in need of instructional support” (83.5 percent rated schools’ use of data as “moderate” or “great”);
- “To identify areas for school improvement” (81.8 percent); and
- “To identify which students do not meet grade level standards” (78 percent).

Figure 8.6

**District Reporting of Reasons Their Schools Collect and Analyze Student Assessment Data
(N = 127)**

	Schools do not use data for this purpose at all	Schools use data for this purpose to small extent	Schools use data for this purpose to moderate extent	Schools use data for this purpose to great extent
a. To diagnose areas where students are in need of instructional support.	1.6	15.0	40.2	43.3
b. For placement of students (e.g., into certain courses, support services, or educational programs)	6.3	17.5	42.1	34.1
c. For evaluation of individual students (e.g., for promotion to the next grade level or for graduation)	7.1	25.4	42.1	25.4
d. To identify which students do not meet grade level standards	5.5	16.5	32.3	45.7
e. To guide curriculum and instruction on an ongoing basis	3.2	24.8	43.2	28.8
f. To identify areas for school improvement	2.4	15.9	41.3	40.5
g. To better target school resources	9.5	29.4	36.5	24.6
h. To gauge the performance of student subgroups within the school.	6.5	26.8	41.5	25.2
i. To identify teachers who need assistance	47.2	31.2	18.4	3.2
j. To For evaluation of individual teachers	78.2	12.9	7.3	1.6

Interestingly, only 28.8 percent of districts said that schools use student assessment data “to guide curriculum and instruction on an ongoing basis” to a “great extent.” However, 43.2 percent did say that schools use data for this purpose to a “moderate extent.” Written survey comments also suggested that data are used by schools. In response to a general, open-ended question about accountability, several districts made comments about the use of data in guiding curriculum and instruction:

Most staff are in tune with accountability and are beginning to use data to drive instructional decisions.

The accountability system has increased site level analysis of student performance as related to students’ instructional needs.

Policies and practices are more clearly focused and data is more effectively being used to guide decision making and instruction.

Assessments are used to make instructional decisions in the classroom and are used as a basis for intervention programs and staff development.

Some interviews also addressed district efforts to help schools use data to inform and improve classroom instruction. As one district administrator commented:

[Using data] is really helping schools to understand, so what is it about reading [for example] kids don't do well, and which kids is it that aren't doing it well? It's getting into identifying within a content area, and then also, is it all students, is it some students? If it's only some, which students is it? So that we can then match the kids up to the instructional changes.

This same person, however, pointed out that where the improvement of instruction is concerned, an understanding of how to use and interpret data will be meaningless if it is not accompanied by an understanding of what to do differently in the classroom to address shortcomings indicated by the data:

The piece that is the biggest chasm that we haven't bridged yet is, once they begin to learn what the data tell them, how do they figure out what to do, making the connection to instruction? "Okay, I've learned that it's this about reading my kids don't do well, what do I do?" And that's where the...professional development from the instructional side has to come in — expand teachers' total box of strategies to know what to do other than more of the same of what [they've] already been doing...The instructional piece has to match the assessment and data piece.

In other words, professional development on the use of data is not enough; professional development on improving instruction is also critical.

Survey respondents reported that schools, like districts, tend not to use student data in making decisions about teachers. 47.2 percent of respondents reported that schools in their districts do not use student assessment data “to identify teachers who need assistance” *at all*, and 78.2 percent of districts stated that schools do not use this data “for evaluation of individual teachers” *at all*. The latter is not surprising, however, given that some bargaining agreements prohibit the use of student assessment data in the evaluation of teachers. One district administrator, for example, commented in an interview that the district is “not allowed” to use data for evaluation purposes.²

² As documented by Bradley (1999), California is far from alone among states in avoiding the use of student achievement data in the evaluation of teachers. Apparently, this is an issue that other states, too, have found tricky; only a few states come even close to linking teacher evaluations with student performance. In Tennessee, principals may use student test results to recommend professional development for teachers, but not to evaluate them; the system is meant as a positive, diagnostic tool rather than as a punitive instrument. In Texas, a system that began in 1997–98 requires that districts evaluate teachers partly based on the student performance at the teachers' schools as a whole — but not in their individual classrooms. In Colorado, student performance is part of teacher evaluations as defined by local districts. Finally, Minnesota offers monetary rewards to Advanced Placement (AP) teachers for students who score well on AP exams.

Principals who were interviewed indicated that a substantial amount of data analysis takes place at the school level.

Based on the interviews conducted with principals, school-level use of student assessment data appeared strong (perhaps surprisingly so) in almost every district visited. This is all the more impressive in that the interview protocol did not contain an explicit question about use of data; rather, principals discussed use of data in the context of other questions. The use of data is, likely, a further reflection of the power exerted by the SAT-9 and other assessments. (See Chapter 7.)

Nevertheless, school-level use and analysis of data was still somewhat variable across districts and across schools within a district. Some districts did seem to stand out as models of data analysis and use.

In one district, three out of four principals interviewed discussed use of data at considerable length, including such details as how the data are disaggregated and how principals are supported in using the data. All three principals said that they receive assessment data from the district; these data are reported by classroom as well as for the school as a whole and are disaggregated by a number of factors. One of the principals reported that the district superintendent had specifically told schools to address the performance of minority students, so she looks particularly at these data. She also said that she sits down with each teacher individually and goes over class scores, looking at the current status and thinking about how to make improvements. Another principal, similarly, stated that teachers look at their class data to determine their students' strengths and weaknesses, and they also evaluate their previous year's class to find clues to what they need to "beef up." The third principal mentioned that he had used test data to engineer curriculum changes within the school.

Principals in other districts as well discussed the ways their schools use data. For example, a principal in one district stated that disaggregating data helps to identify who is making gains; a principal at a different school in this district stressed the importance of reviewing results of the SAT-9 and using analysis for planning. He mentioned that he had taught school staff how to create Excel graphs of student performance results, and he reported that the staff learned a great deal by working with their own data and creating their own visual records of where students excel and where they need much work. A teacher at this school confirmed that school staff members spend a great deal of time looking at scores from the SAT-9 and from another assessment used in the district.

In a third district, three principals were interviewed, and all of them mentioned use of data. An elementary principal discussed how the school had looked at the test score data, identified areas needing improvement, and set goals for improvement in these areas. Although she said that these goals were ambitious and might not be attainable in one year, at least the scores should not go *down* in these areas. A middle school principal in this

district talked about how use of data had been limited in the past but was beginning to improve:

Even though through observations I have an opinion about which teachers do the best job, I really have never had any data that would show me whether or not they're really consistently getting better results... We were never able to get data by teacher until this year. We're supposed to get the scores that come in in June by this year's teacher, and then by next year's teacher, so that next year's teachers can use that for their analysis of their kids and what they do, and this year's teachers can take a look at how effective their [practice] is.

The third principal in this district, also of a middle school, reported that schools in the district had “spent an afternoon” analyzing last year’s SAT-9 scores. A teacher in this school indicated that the math department had used test score data to focus instruction. Every year, she said, “We have a goal that we want to meet for the kids; we want to raise their percentile in [a] particular area.” This year, their goal was to raise achievement in fractions and decimals.

Principals in each of the other five districts visited mentioned some use of data as well. (See box.) However, except in the few examples presented above, principals’ reports of teachers working with data were seldom corroborated in interviews with the teachers themselves. Indeed, teachers rarely mentioned using data at all. Although many did say that they use test scores as an indicator to gauge their effectiveness, most of them were referring to their own classroom assessments, rather than to the SAT-9 or district assessments. One principal even acknowledged outright that teachers do not trust or use the data and feel that low scores are not their responsibility. And an administrator in a different district said that although the teachers in the district do look at their classroom data, his experience has been that when their results are not good, they blame the measurement techniques.

Cross-District Snapshot: School Use of Data

The following remarks about the use of data were made by administrators (four principals and one assistant principal) in five different districts:

Results from the SAT-9 are shared with teachers. In departments, teachers take school results and identify weaknesses and strengths, then create an action plan to help students improve.

We break down the results of the SAT-9 for the strengths and weaknesses of our students and use that to come up with curriculum to stress the following year. We try to develop their weaknesses into strengths... I meet with each [teacher] and go over test scores and come up with what their teaching strengths are, what areas their students did well in, and what were weaknesses.

(continues)

Cross-District Snapshot — continued

I would like to do what we did for writing and continue it with math — data collection, disaggregating data, data analysis — even if it is not a PQR year. We disaggregated writing data according to gender, ethnicity, LEP, etc. It was very informative.

The teachers did a lot of grade-level work analyzing the scores on the standardized tests to determine the student weaknesses. Then the following year they focused on those areas. It had a profound effect on the way the kids did.

We have spent the year doing a thorough analysis of our achievement data...We are committed to using achievement data to drive instructional and budgetary decisions.

In the Next Chapter

As we have seen in this chapter, using student assessment data generated by the accountability system presents significant problems: expertise is lacking, particularly at the school and classroom levels, and even districts were limited in their use of data to drive the accountability system. One factor that can positively influence the use of data is the presence of consequences and incentives, tied to student achievement, as part of an accountability system. This topic is taken up in the next chapter.