EVIDENCE

MAKING THE CASE FOR
DATA-DRIVEN DECISION-MAKING

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This is an effective and efficient way to ensure higher student achievement in our classrooms

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Data-driven decision-making can improve the efficacy of teaching. When teachers take student assessment data into account as they plan and deliver instruction, they are better able to respond to the needs of their students. They understand students' past strengths and weaknesses and can provide instruction that results in higher achievement.

Most educators have heard about data-driven decision-making, but very little professional development has been provided on this topic. Yet in this era of limited education resources, examining student data is more valuable than ever before. Here's why:

■ **Our student population has changed.** Most Sonoma County classrooms no longer have a homogeneous population of learners. Students are jumbled together regardless of language proficiency or special needs. Some students are well prepared for grade-level learning, but others don't have the academic skills needed for their grade placement. By examining student data, teachers can clarify individual skill levels and plan instruction to suit their heterogeneous classrooms.

■ **Our work in education has evolved.** The notion that students progress through school following standard curves of distribution for success and failure was widely accepted in the past. But in recent years, this idea has been challenged as we've learned to use curriculum measures that are standards-based and criterion-referenced. We've found that we can markedly increase student achievement by adjusting instructional variables—curriculum, instructional strategies, grouping, and time. Along the way, we've also discovered that daily/weekly progress checks can guide and inform our work, leading to more targeted instruction and greater student success.

■ **Technology has made data analysis easy and accessible.** Today's computer-based student information systems allow teachers to gather information, analyze it, and use it in new and powerful ways. Data can be sorted to show individual or group performance, then organized to highlight the information from different perspectives. Charts and graphs can illuminate trends. All of this information is useful to individual

teachers—or it can be studied by groups of educators working in professional learning communities (PLCs) or at staff meetings, where it becomes the basis for discussion, idea and resource sharing, and collaboration to improve teaching and learning.

So, if you are a teacher and want to begin using data to make instructional decisions, where do you start? Which data sources are most important and how could you use the information?

BEGIN THE YEAR KNOWING STUDENT STRENGTHS AND WEAKNESSES

At the start of the school year, California Standards Test (CST) results offer an efficient way to assess student preparedness for learning new grade-level standards. In each content area, students are placed in one of five performance bands—advanced, proficient, basic, below basic, and far below basic—based on STAR testing from the previous spring. If teachers sort the students on their new class rosters according to CST results, the resulting snapshot can be used to make key decisions regarding the first weeks of instruction.

For example, a class roster sorted by students' performance level in English-Language Arts immediately shows us:

- The number and identity of students at the advanced or proficient levels, indicating that they are ready for the new grade's content and will need little, if any, review.

- Which students are at the basic proficiency level. These students may have minor gaps in their content knowledge that require extra teaching time and review.

- Which students scored below basic or far below basic. These students may have significant learning deficits that could prevent them from mastering standards for the new grade level. They will need further diagnostic testing and intervention.

Sorting class lists by performance level helps teachers anticipate student needs and determine the best use of instructional time, allowing for more effective teaching from the very first day of school.

Cluster score reports, another facet of the CST, provide more detail about student strengths and weaknesses. For example, the cluster report for Grade 4 English-Language Arts highlights the specific skill areas of writing strategies, word analysis, written conventions, reading comprehension, and literary response. The report specifies how many questions in these strands each student answered correctly.

In the case of Grade 4 English-Language Arts, a teacher might discover that a large percentage of incoming students are not proficient in writing strategies, suggesting that improving student writing should become an instructional focus. Sorting the list to see which students scored especially low in this strand will prepare the teacher to respond to specific intervention and support needs.

The review and analysis of CST data has become an essential component of teacher preparation for the new school year. The information gleaned from CST reports can be combined with prior-year teacher recommendations and local assessments to guide decisions about initial student groupings, instructional pacing, and program development. This is much more efficient, and leads to better results, than spending weeks working with students only to find that they don't have the foundation skills we thought they had.

MONITOR ENGLISH LEARNER PROGRESS WITH CELDT AND CST DATA

Data from the California English Language Development Test (CELDT) can be extremely helpful in guiding and supporting programs for second-language learners. Teachers who learn to use CELDT results in conjunction with CST scores will find they are better

CST | CALIFORNIA STANDARDS TEST

- Results available annually in August as part of the STAR report
- Paper and electronic files are mailed to districts
- Student, school, and district reports are included
- SCOE can convert electronic files to Microsoft Excel for easier access

Grade 4 CST cluster scores by strand

	Writing Strategies	Word Analysis	Written Conventions
JACOB	14	17	18
SAMANTHA	10	17	14
DOMINIC	10	10	14
ARMANDO	9	15	7
VICTOR	7	14	13
CESAR	7	15	14
ALEJANDRO	6	10	11
MARQUEZ	6	10	7
JEAN	2	5	6

Sorted in descending order based on the number of questions correct in Writing Strategies. White boxes indicate below proficiency for that strand.

able to understand the academic needs of English learners and further their progress.

The CELDT data clarifies the status of students' developing English language skills by placing each English learner in one of five proficiency levels (beginning, early intermediate, intermediate, early advanced, and advanced) based on annual testing. Schools should generally plan for student CELDT scores to rise by one proficiency level each year. For example, students scoring at the beginning CELDT level during their first year in an American school should reach early intermediate the following year. At the same time, their performance on the CST English-Language Arts test should advance as shown below:

Year	CELDT	CST | ELA
1	Beginning	Far Below Basic or above
2	Early Intermediate	Below Basic or above
3	Intermediate	Basic or above
4	Early Advanced	Basic or above
5	Advanced	Proficient or above

Classroom teachers can reference lists of English learners sorted by CELDT level to determine students' ability to perform grade-level tasks. For example, students at the advanced and early advanced levels should be able to comprehend literal materials, although support may be necessary for tasks that involve inference and evaluation. Students at the intermediate, early intermediate, and beginning levels will have difficulty completing reading assignments and require additional strategies and resources to access grade-level content.

CELDT reports can also specify the "perform-ance level difference," which compares two years of language testing and gives teachers progress information at a quick glance. In cases where no growth is indicated from one year to the next,

English learners sorted by CELDT level

	CELDT	CST | ELA	CST | Math
LESLIE	Early Intermediate	Far Below Basic	Far Below Basic
AGUSTIN	Early Intermediate	Far Below Basic	Below Basic
JUAN	Early Intermediate	Below Basic	Proficient
FABRIZIO	Early Intermediate	Below Basic	Basic
LUIS	Intermediate	Below Basic	Proficient
JACQUELYN	Intermediate	Basic	Basic
FRANCISCO	Intermediate	Far Below Basic	Below Basic
PAOLA	Early Advanced	Basic	Basic
MELISSA	Early Advanced	Proficient	Basic
ELIZABETH	Advanced	Proficient	Proficient

Combining CELDT and CST data allows teachers to see if language development is matched by increased content learning. Via the chart above, we learn that:

- Leslie is early intermediate on the CELDT, but far below basic on the CSTs. Her teachers should provide more scaffolding and get support from an EL specialist to increase her academic development.

- Juan, early intermediate on the CELDT, scored below basic in language arts, but is doing well in mathematics. What strategies and materials used in math led to Juan's success? Would some of the same ideas work in language arts?

- Elizabeth is advanced in language development and proficient in both language arts and math. She may be ready for reclassification.

USE FORMATIVE ASSESSMENTS TO GAUGE LEARNING AND ADJUST TEACHING

One of the most effective ways to manage classroom learning is through the use of formative assessments. These assessments are different from the state tests because they allow educators to gauge student understanding during instruction and can guide the in-process adjustment of teaching. Formative assessments help educators respond to the central questions of teaching that Richard and Rebecca DuFour framed: What am I going to teach? How will I know that students have learned it? What will I do for those who struggle or fail? What will I do for students who have already mastered the content?

CELDT | CALIFORNIA ENGLISH LANGUAGE DEVELOPMENT TEST

- Results available annually in late December/early January
- Paper and electronic files are mailed to districts
- Student, school, and district reports are included
- SCOE can convert electronic files to Microsoft Excel and merge with CSTs

educators must ask why progress has not occurred. What changes in curriculum, instructional strategies, grouping, and/or time could help the student? Case-by-case review should be done for any student who has not met expected performance based on their years in U.S. schools. What programs and resources can the school apply to help?

Formative assessments can be developed by teachers or purchased from a publisher. They generally concentrate on a limited content area—for example, standards being taught within a 6-8 week period. Results can be integrated into student data systems like Edusoft, thus utilizing computer power to synthesize information. The resulting data is used to design the next six weeks of instruction.

In one example, a pre-test is designed to reveal student strengths and weaknesses in relation to the math standards that will be taught. The electronic report generated can be manipulated to help analyze student errors, thereby indicating what students already know and what the teacher should concentrate on teaching. The teacher can anticipate misunderstandings and develop strategies and materials in response to the realities of the classroom. In this instance, the teacher learned that the Number Sense standard 1.0 was a strength for most students in the class, but Mathematical Reasoning 3.2 was a weakness. This knowledge drove instructional planning for the lessons ahead.

Another formative assessment being widely used in Sonoma County is the Dynamic Indicators of Basic Early Literacy Skills (DIBELS). Fifteen local schools are participating in a Response to Intervention pilot that uses DIBELS to monitor and guide individualized reading instruction in grades K-6. These schools recognize that students experiencing reading difficulties should have their progress monitored more frequently than students who are making acceptable progress. For example, students at high risk for reading failure receive intensive intervention and are assessed every other week, while students of less risk undergo progress monitoring monthly. Students who are successfully reading at grade level are assessed using DIBELS just three times during the school year.

Three questions drive instruction when using formative assessments for progress monitoring:

- Is the core curriculum and instruction working for most students?
- Which students need additional resources in order to be successful?
- Are our interventions effective?

Reports generated through DIBELS provide the evidence that allows teachers to answer these questions. By inputting results from formative assessments into the system, a variety of data displays can be generated: bar charts calibrating the frequency of correct word usage, class

LEARN 'HOW TO' ONLINE

We've developed a series of videos to accompany this issue of the Bulletin and posted them on the SCOE website. The videos show how the results from CST, CELDT, and formative assessments can be used and interpreted by teachers and what implications they might have in the classroom. You can find the videos online at **www.scoe.org/publications**. ◆

charts with status summaries and instructional recommendations, individual student progress monitoring charts, and more. Teachers can use this information to target instruction to needs, form intervention groupings, monitor student achievement, and ensure that all students reach benchmark goals.

SCOE is actively supporting the application of data-driven decision-making in Sonoma County schools. Accessing the data, converting it into usable formats, and learning to use today's computer-based student information systems are just one piece of the puzzle. The real challenge for teachers is the decision-making that comes with the analysis of the data and the implications inherent in the numbers. What changes in instruction should result from the information we extract from the data? How should this evidence of student learning inform classroom practice?

For many teachers, this lends a new twist to lesson planning and adds yet one more task to an already full plate. But the research shows, and teachers practicing data-based decision-making agree, that this is an effective and efficient way to ensure higher student achievement in our classrooms. ◆

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