

Making Instructional Decisions Based on Data: What, How, and Why

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One of my weaknesses has always been documenting a student's progress, because I always found it such an overwhelming task. I would assess students, hand in the scores to an administrator, and then file them away. I literally would assess here and there, never use the results, and concentrate on whole-group instruction. Individual needs based on assessment were never taken into consideration. (Calderon [a kindergarten teacher] cited in Reilly, 2007, p. 770)

If you can relate to Calderon's sense of disenchantment with respect to documenting students' progress in your classroom or school and then not using the information, you are not alone. In our teaching experiences over more than two decades, we have often heard comments such as these from many of the PreK–12 teachers, literacy specialists, and principals in classroom and school settings with whom we have worked. We often found and continue to find that, although these educators spend significant amounts of time collecting assessment data, they do not take time or perhaps know how to organize and use data consistently and efficiently in instructional decision making. When asked, most teachers often admit, like Calderon, that documentation of student literacy progress is one of their weaknesses because it can be an overwhelming and time-consuming task. Other teachers say that they simply lack the knowledge and skills to develop a system for assessing and documenting students' progress.

The challenges that go along with data-based decision making are even more apparent in the current context of increased accountability as seen in local, state, and federal policies. At a time when teachers and administrators are pressed to demonstrate students' literacy growth, collecting, organizing, analyzing, and using data for instructional and curriculum

improvement is a new way of working for many educators. How should assessment data be examined to improve instruction and curriculum and thereby advance students' reading and writing performance? In this column, we offer a promising framework that can support school teams (i.e., teachers, literacy coaches, data managers, and principals) in making sense of various types of data for instructional planning. Instruction that is data based and goal driven sets the stage for continuous reading and writing improvement.

Research on the Intersection of Literacy Assessment and Instruction

Literature on the influence of literacy assessment on instruction focuses on the relationship between assessment and instruction rather than on whether one does or should drive the other. In one extensive study aimed at determining how assessment influences instruction within four particular schools, Stephens and her colleagues (Stephens et al., 1995) found that "the salient relationship was not between assessment and instruction per se. Granted, the two were related, but their relationship was moderated by the decision-making model of the district." (p. 494). The implication here is that assessment and instruction issues are embedded within broader power structures within particular schools and that both are influenced greatly by the decision-making model operating within those schools.

Shea, Murray, and Harlin (2005) noted that school-wide committees or teams typically have a wide-angle view of student achievement: The information

they examine often comes from various sources and diverse perspectives. They suggested that school-wide teams analyze aggregated or disaggregated assessment data focused on curriculum and instruction for whole classrooms, small groups, or individual learners. After reporting students' current level of achievement, they then can make recommendations pertaining to school-wide, grade-level, or individualized instruction. However, it is important to keep in mind that "as important as these recommendations are, they should not mark the end of a committee's work. At future meetings, members must review progress made as a result of their recommendations and modify them when appropriate." (p. 148). In other words, the systematic use of data to make instructional decisions requires leadership, training, and the development of a culture of data-driven decision making and accountability.

The analytical framework described in the following section was inspired by the *Standards for the Assessment of Reading and Writing* developed and published collaboratively by The National Council of Teachers of English and the International Reading Association Joint Task Force on Assessment (1994). This valuable report provides a set of 11 standards aimed at guiding the decisions schools make about assessing the teaching of reading and writing. These standards express the conviction Joint Task Force members had that involving the entire school community is essential if assessment is truly to foster student and teacher learning. The report offers guidelines for assessment strategies that reflect the complex interactions among teachers, learners, and communities; that ensure fair and equitable treatment of all students; and that foster thoughtful literacy learning and teaching.

Introducing the Data Analysis Framework for Instructional Decision Making

The Data Analysis Framework for Instructional Decision Making is a practical tool that provides school teams with a structure and process for organizing, analyzing, and using multiple sources and types of data for instructional decision making. Three major categories of data that are considered for improving reading and writing instruction include (1)

professional development data, (2) classroom data, and (3) reading performance data.

1. Professional development data may consist of evaluation or feedback surveys and coaches' logs of how they spend their time and the types of activities they engage in to assist classroom teachers.
2. Classroom data may consist of teacher surveys of instructional practices, such as U.S. Elementary Reading Instruction (Bauman, Hoffman, Duffy-Hester, & Moon Ro, 2000), and The Language Arts Curriculum Survey (center for Policy Research, n.d.), which surveys teachers on the time they spend on reading components and the cognitive demand of learning tasks. Informal data on reading instruction may consist of teachers' daily lesson plans or weekly schedules that include instructional time frames, content taught, and organizational grouping (i.e., individual, small-group, or whole-group instruction). Working together, literacy coaches and teachers may use observational data collected from tools such as the Early Language and Literacy Classroom Observation Toolkit (Smith & Dickinson, 2004) and Classroom Environment Profile (Wolfersberger, Reutzel, Sudweeks, & Fawson, 2004). Coaches' documentation of informal observations conducted systematically and regularly (e.g., Bean, 2004, pp. 106–111) may also provide valuable sources of classroom data.
3. Reading performance data, arguably the most important aspect of instructional decision making, may include standardized tests, criterion-referenced tests, informal classroom assessments, and student-work samples.

Taken together, these sources provide a rich data set for school teams to use in setting goals and devising action steps to improve literacy instruction within classrooms, across grade levels, and throughout schools.

Using the Framework

The Data Analysis Framework for Instructional Decision Making consists of guiding questions to assist school literacy team members in analyzing data, discussing the patterns and relationships within those data, and constructing interpretations that they can

Figure 1
Worksheet for School Teams Using Data Analysis Framework for Instructional Decision Making

Professional development data

1. What patterns do you observe in the professional development data?
2. How do you explain the patterns you see in the data?

Classroom data

1. What are some instructional strengths?
2. What aspects of instruction show a need for improvement?
3. What content and strategies are emphasized in the instruction?
4. What content and strategies are not emphasized?
5. How do you explain the patterns you see in the data?

Student data

1. What patterns do you observe in the student data at the school level, grade level, and classroom level?
 - a. Where is growth demonstrated?
 - b. Is the growth equal across grades?
 - c. Is the growth equal for all students?
 - d. What are specific areas of strength?
 - e. What are specific areas that need improvement?
2. How do you explain the patterns you see in the data?

Put It All Together

1. What connections can you make between professional development data, classroom data, and student data?
2. What are the strengths and needs?
3. What do the patterns mean for you in your role (e.g., literacy coach, principal, data manager, teacher)?
4. What are the implications for change as you see them in your role?
5. Overall, based on the analysis and findings, what are the professional development and school improvement goals?
6. What action steps will you take to meet the goals?
7. How will you communicate the improvement plan to other school personnel and stakeholders?

then translate into goals and action steps to improve reading and writing achievement (see Figure 1).

General procedures that may guide implementation of the Data Analysis Framework for Instructional Decision Making consist of the following five steps:

1. Organize the data set so that members of the literacy team can partner in analyzing different portions of the data set. Partnering allows for more than one set of eyes on the same data and provokes substantive discussion of individual observations.
2. Select a recorder for the team. The recorder takes notes on the team's discussion of the observations during step 4.
3. Partners analyze their data and each person jots down observations on his or her worksheet.

4. After sufficient time for partners to carefully analyze their data, the team "puts it all together" in a discussion of their findings (patterns in data) and interpretations (what the patterns show in terms of strengths and needs) and then devises professional development and school improvement goals and action steps.

5. The team plans when and how they will communicate the formative plan to other school personnel and stakeholders and monitors the implementation of their plan.

The example provided in Figure 2 illustrates the results of a school literacy team's use of the Data Analysis Framework for Instructional Decision Making. The school team example of a Put It All

Figure 2
Example of a School Literacy Team’s Put It All Together From the Data Analysis Framework for Instructional Decision Making

Put It All Together

What connections can you make between professional development data, classroom data, and student data?

Our data overall show that the professional development has helped to improve classroom instructional practices, and the student data shows stronger achievement. Coaching logs showed that the coaches’ are spending a large amount of time providing professional development in five areas (fluency, phonics, phonemic awareness, comprehension, and vocabulary) and not as much time on individual coaching. The teacher surveys showed strong use of research-based strategies presented at professional development, which may be related to higher Early Language and Literacy Classroom Observation (ELLCO) scores in approaches to curriculum integration, reading instruction, and presence of books. ELLCO scores for oral language facilitation are lower than other areas, and students scoring at or above grade level are not making good gains. This suggests a need for differentiated instruction. Our student data showed improvement over two years, and TerraNova results showed growth in two of three grade levels.

What are the strengths and needs?

Strengths:

Better alignment of curriculum to state indicators (based on Language Arts Curriculum Survey). The disaggregated data show growth for students scoring in the at-risk and some-risk categories. Teachers are using data.

Needs:

Improve instruction for students scoring at or above grade level. First-grade scores dropped at third benchmark so we need to look more closely at first-grade instruction.

What do the patterns mean for you in your role (e.g., literacy coach, principal, teacher, data manager)?

Literacy coach:

Based on my coaching log data, I need to spend more time in classrooms, work more with teachers on differentiating instruction, and follow up with teachers after progress monitoring.

Principal:

I need to more frequently observe classroom instruction and provide feedback.

First-grade teacher:

I should identify specific areas of need for students reading below grade-level expectations and work with the coach to differentiate instruction in areas of need.

Data manager:

I need to stress progress monitoring for students reading at or above grade level more often.

What are the implications for change as you see them in your role?

We need to utilize our data to better plan instruction. We need to streamline interventions and make sure to address needs of students reading at or above grade level. Coaches need to spend more time in classrooms and conduct teaching demonstrations.

Overall, based on the analysis and findings, what are the professional development and school improvement goals?

Professional development goals:

1. Continue to analyze and use data
 - include data at beginning of professional development
 - take time to analyze data
2. Increase differentiated instruction
 - work with teachers to plan for small groups and target needs for instruction
 - continue to examine the content of reading instruction using data and identify specifics within the five areas to target—what we want students to know and be able to do
 - assist teachers with ways to monitor student performance and analyze student work

(continued)

Figure 2

Example of a School Literacy Team's Put It All Together From the Data Analysis Framework for Instructional Decision Making (continued)

School goals:

1. Improve data use at classroom and school levels
 - schedule grade-level meetings for teachers to analyze data regularly
 - principal follows up with literacy coach on classroom instructional needs
 - principal schedules regular observations of instruction and provides feedback to teachers
2. Align curriculum, instructional resources, and instruction with student needs
 - use intervention specialists more with first grade
 - examine what's working in our intervention model and make changes as needed
 - examine the core reading program to see how it addresses what we need to teach more effectively

How will you communicate the plan to other school personnel and stakeholders?

At the opening-of-school meeting—principal, literacy coaches, and teachers share in a presentation of findings from the data analysis and communicate broad, school goals. Teachers on the school literacy team meet with grade-level colleagues to refine goals and develop two action steps. The grade-level facilitator records specific goals and action steps.

At the follow-up meeting of the school literacy team, the grade-level facilitators share plans and post them in the professional development classroom. All teachers post respective grade-level goals in classrooms in student-centered language. At regular meetings throughout the year, the school literacy team assesses progress in meeting the goals and monitors or adjusts the action steps accordingly.

Together is a composite created from authentic samples of a literacy team's work. The literacy team members included the school-based literacy coach, principal, data manager, and grade level teacher representatives in an elementary school.

Applications

The Data Analysis Framework for Instructional Decision Making may be applied in a variety of preK–12 educational settings. It can be easily modified to include other types of data collected outside of literacy including mathematics, science, or other subject areas. Its team approach allows for different educator groups to collaborate—teachers within and across grade levels and district-wide school improvement teams. The Data Analysis Framework for Instructional Decision Making is easily adapted to small or large teams who may modify the questions to suit local purposes and contexts. As with other collaborative processes, the utility of the framework is best judged by those who use it for its intended purpose—to support a systematic and thorough analy-

sis of multiple sources of data to improve student learning and achievement.

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