WHAT THE RIGHT DATA CAN DO

FIND SOURCES THAT CAN HELP TAILOR LEARNING TO EACH EDUCATOR'S NEEDS

By Edie Holcomb

Learning Forward's Data standard advocates using data from a variety of sources and types — including student, educator, and system data — to plan, assess, and evaluate professional learning.

This presents several challenges, beginning with the emphasis on a variety of sources and types. The pressures of No Child Left Behind have focused American educators on academic student data from large-scale, high-stakes tests —usually connected to school improvement plans that must be developed where Adequate Yearly Progress is not met.

Rarely are those data connected directly to plans for professional learning.

A second area of challenge relates to what I knew and articulated forcefully about my students, but was slow to discover about my staff when I became a principal: They don't all need the same thing, and they don't all learn the same way.

This article describes other kinds and sources of data that contribute to sound planning of professional learning and ways to use those multiple data sources to customize professional learning.

TYPES OF DATA

Student
ACADEMIC: Large-scale, common, formative.
NONACADEMIC: Attendance, discipline.
PERCEPTUAL: Surveys, focus groups.

USING DATA FROM A VARIETY OF SOURCES AND TYPES

Student data

Three types of student data are useful for identifying professional learning needs: academic, nonacademic, and perceptual data.

Student academic data represent both the starting point and the bottom line. It's common practice to have an annual data retreat, look for peaks and valleys in the test scores, and identify skills and concepts that remain a challenge for many students. But time and money for professional learning are scarce, and it would be a mistake to determine their use directly from those findings. Priorities based on large-scale assessment data must be confirmed or questioned by more specific, real-time data gained from collaborative discussion of formative assessment results. Teachers in disciplines that do not have high-stakes tests are even more dependent on common assessments to identify the student learning needs that then prompt examination of possible teacher learning needs.

Nonacademic student data include attendance and behavior referrals. Examining absenteeism by time of day and year and by student groups may reveal trends that suggest needs for staff awareness and action. Categorizing

Educator
Preparation, experience, certification, participation, perceptual.

System
Professional learning records, school improvement plans.

discipline referrals by time and type and student group may surface patterns that raise questions about equity and cultural differences. These are areas of professional work that may also require new learning and collegial support.

Perceptual data: Another important source of student data is from their own voices and perceptions. Issues and clues for solutions related to school and classroom climate, learning styles, and classroom management can be identified through simple surveys and focus groups that address two basic questions:

- What is one thing that would make our school a better place?
- What is one thing the teachers could do to better help students learn?

In focus groups I conducted with 9th graders (Holcomb, 2012), participants gave the following responses: "Tell the [teachers] to use hands-on materials and projects and group activities." "The teacher should be active and be with the class." "Teach us the way we understand — use objects like blocks, basketballs, visuals, etc." Students on opposite sides of the continent gave the same two suggestions that help in math: Break it down step by step, going into detail, and ask students to go to the board to work problems so they know right away if they understand it. Both struggling students and successful students reinforced

the tenets of chunking instruction and providing immediate feedback (Marzano, 2007).

For struggling learners, the key to improving math teaching lies in the teacher's relationship with students. As one student said, "I am not always a good student or a bad student. I've been both. It depends on who is teaching me." Professional learning needs related to the learning environment and the importance of relationship building merit attention as empowering factors that impact student performance.

Educator data

Before rushing to decision on the adult action steps to address student learning needs, teachers and administrators must conduct a root cause analysis using a tool such as a fishbone diagram (Holcomb, 2007) to explore the reasons those student needs might be ongoing challenges. As an example, one district noted many factors that could be related to middle school students' difficulty with the more demanding mathematics standards. One factor was a possible lack of teacher content knowledge and confidence teaching these concepts — a theory that would only have surfaced in a climate of trust. Educator data on original certifications and teaching background revealed that almost all of the middle school math teachers had elementary experience, were li-

censed K-8, and had taken many classes on effective instruction but no master's level mathematics courses. A new math program, new math assessments, or introduction of whiteboard technology would not match their underlying needs. Math teachers needed to learn and understand more math.

The connection between teacher preparation for their current assignments and student success is both intuitive and well-documented. Charles Clotfelter, Helen Ladd, and Jacob Vigdor (2007) conducted a large-scale study of high school teachers in North Carolina. They found that when teachers are certified in their subject, have higher scores on licensing tests, have more than two years' experience, and are National Board-certified, the combined effects of these qualifications on student achievement exceed the effects of race and parent education.

Basic data about teacher preparation that should be available include the degrees a teacher has been awarded and state licenses that are current. Critical data about preparation also include majors and minors within those degrees. Teachers cannot teach what they don't know, and, as Richard Ingersoll (2008) reported, out-of-field teaching has a disproportionate effect on high-poverty schools. In core academic classes nationally, 17.2% of teachers in grades 7-12 and 42% of teachers in grades 5-8 were teaching out of field. For all grade levels combined, 27.1% of teachers in high-poverty schools were teaching out of field, compared to 13.9% in low-poverty schools.

Without knowing colleagues well, leaders may make assumptions that limit effectiveness or, worse, create conflict and confusion. Whenever a teacher changes schools, changes grade levels or course assignments, or encounters a newly adopted curriculum approach, information about education and experience is critical to providing appropriate support — neither assuming the teacher is already prepared nor automatically assigning the teacher to a one-size-fits-all orientation training.

New teacher evaluation systems that replace "satisfactory or not" ratings with four-point rubrics describe paths for growth through ascending levels of performance. Compiling voluntary, anonymous data from teachers' self-assessments can help leadership teams spot common needs for schoolwide professional learning. Individualized professional learning can be designed when the principal and teacher collaborate to select areas of focus and identify the resources and support the teacher will need.

As with student data, educator data should include both objective and perceptual sources. For example, after the first full year of implementation of a new program or practice, questions drawn from the Concerns-Based Adoption Model Stages of Concern (Hall & Hord, 2001) can identify whether next steps should continue to focus on basic orientation and preparation, management of time and materials, or accommodations to student needs. Gathering this data in one school district revealed common needs across the district by grade level, but these differed from one grade level to the next — leading logically to differentiated professional learning.

System data

A bigger challenge may be availability of system data. Districts can typically describe dates and venues such as inservice days, workshops, and stipends or salary increases for graduate work. When asked for data about participation, they may have total numbers who attended, and, for a given training initiative, they may produce attendance lists. It is unusual to have such information compiled teacher by teacher as a record of continuous learning. Yet these data are critical for diagnosing needs and planning support. Perhaps training was provided for all staff in 2008-09. Are all those staff still in place? Who has joined the staff since that training? Did they gain the knowledge somewhere else or is it a missing piece? Have their teaching assignments changed? Did they receive follow-up and feedback?

In large districts, school improvement plans also provide system data. Synthesizing professional development plans outlined by individual schools can help central office leaders conserve resources by coordinating common efforts at scale. This information can also help the system avoid overplanning districtwide initiatives that compete for the same time, energy, and funds.

USING DATA TO CUSTOMIZE PROFESSIONAL LEARNING

Examination of those data should result in a list of who needs what by individual or group/team. Every staff member in the school should be included. An additional column might indicate preferred or possible learning modes, such as online course, book study, or peer observations. That information can then be used to customize planning for professional learning.

Four aspects of professional learning should be differentiated: what, how much, what kind, and where and when:

What: The topics of professional development will change as student performance data identify skills of greatest need and teacher preparation data identify gaps in education and experience to meet those needs. Some teachers are already experts and don't need more professional development, except to learn how to develop others.

How much: The amount or degree of professional development varies by experiential factors such as how long it's been, if ever, since a teacher taught that content and how much the academic rigor of the relevant standards may have changed in the meantime.

What kind: The type or level of professional development needed depends on whether the knowledge or skill is new and the teacher needs to start with the introductory theory, research, and examples, or whether the concepts are familiar and it's time to engage in practice with feedback through peer observation or coaching.

Professional learning for implementation must include the levels of follow-through necessary to result in classroom application. Overview-level training during the rush of August is useful to create momentum and signal the focus of the year but won't ensure that students throughout the school benefit from

the new strategies. Professional development must be ongoing and include multiple exposures with content-specific examples and practice with feedback through arrangements such as use of video, coaching, or professional learning communities.

Marzano (2010) asserts that "school systems can develop expert teachers if they are willing to devise comprehensive models of effective teaching and provide time for teachers to engage in deliberate practice relative to the skills articulated in the comprehensive model" (p. 3). A five-year study conducted in California (Bush, 1984) examined data on the impact of various approaches to professional development, based on whether teachers used the new teaching practices. Researchers found that when teachers were given only a description of new instructional skills, 10% used the skills in the classroom. When modeling, practice, and feedback were added to the training, teachers' implementation of the teaching practices increased by 2% to 3% each time. When coaching was added to the staff development, however, 95% of the teachers implemented the new skills in their classrooms.

Where and when: Decisions about the most effective setting and timing will emerge once the need and goal have been established through the earlier discussions. Educator data can assist in customized planning by identifying:

- Who are our resident experts?
- Who needs basic training versus advanced review?
- In what areas do we need external assistance and support?
- How will we maximize use of our opportunities (for example, district events, internal experts, time, and money)?
- What will we not do this year to make space for customized collaborative learning?

Based on the data and consideration of the four aspects described above, planners of professional learning should:

- **Identify all the possible venues** for professional learning. The possible venues include all opportunities (times and places) that are already available — for example, staff meetings, common planning times, grade/department meetings, early/late dismissals.
- **Decide which of the possible times and places** best fit the purpose of introducing new knowledge (training) and which opportunities make it possible to coordinate practice with feedback and coaching. For example, a 20-minute segment of a staff meeting can accommodate a minilesson or video clip of a concept or teaching behavior. But for real-time coaching to occur, students should be in session, and the coach or observer should be available.
- **Doublecheck the overall professional development plan** for the year to ensure that adequate time is dedicated to practice with feedback.

CONTINUOUS CYCLES OF IMPROVEMENT

Stephanie Hirsh (2009) says that Learning Forward's theory of change "stands on the assumption that students achieve more when teams of educators within a school and across a district engage in continuous cycles of improvement that focus their attention on their learning needs, as defined by student learning needs, refining their practice and accessing district and external assistance providers to support their efforts (p. 5)."

By using student, educator, and system data that provide critical information to customize planning, every educator is learning — not just attending the same events as everyone else. As professional learning stimulates even more effective instruction and interaction, increases in student success will follow and the vision of high achievement for all will be in view.

WAYS TO DIFFERENTIATE

- What.
- How much.
- What kind.
- Where and when.
- Who presents and coaches.

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