



TEACHERS HARNESS THE POWER OF **ASSESSMENT**

COLLABORATIVE USE OF STUDENT DATA GAUGES PERFORMANCE AND GUIDES INSTRUCTION

By Phillip Herman, Peter Wardrip, Ashley Hall, and Amy Chimino

Improving systematic use of student data to inform the work of teachers, schools, and districts has become a hot topic in education reform. Learning Forward's Standards for Professional Learning stress better use of data, and particularly student performance data, within an integrated approach to improving practice.

While better use of data by schools and districts is critical to improving student outcomes, the most direct impact

comes from teachers using evidence of student thinking and understanding to improve instruction. However, systematically collecting, recording, analyzing, and reacting to this kind of data is challenging for teachers.

Two teachers who have harnessed this powerful practice are Ashley Hall and Amy Chimino (two of the authors of this article), both 4th-grade teachers in a not-for-profit charter system near Pittsburgh, Pa. Hall and Chimino have learned to use data formatively to influence what they do



Phillip Herman meets with Ashley Hall, center, and Amy Chimino on a project to use student performance data to improve instruction.

instructionally. Their students have been highly successful on measures of performance, and the teachers attribute student success, in part, to the ways that teachers assess learning and use the results from those assessments instructionally. They work collaboratively to develop routines that help them — and their students — gauge how well each student understands and can demonstrate mastery of learning standards. The routines include assessment, feedback, public use of data, reteaching, individualization of tasks, and progress monitoring.

Many of their practices serve as an example of what other teachers might do, alone or in teams, to use data more effectively to raise performance. These evidence-based practices are highly effective in these teachers' classrooms and may be transferred to other teaching contexts if appropriate professional learning supports are in place.

One specific practice — using information from summative assessments in formative ways — is worth highlighting for practitioners who want to use data more effectively in instruction.

GATHERING THE DATA

Propel McKeesport is a not-for-profit charter system near Pittsburgh, Pa. The school serves traditionally underserved students who are largely low-income (88% free or reduced lunch) and minority (72% African-American). Hall and Chimino shared the same 42 students during the 2010-11 school year.

On the end-of-year statewide exam, 100% of students were proficient or advanced in math and 86% were in English. These results are unusual in the state, particularly given the demographics of the classrooms. Furthermore, these students made considerable progress within

the school year. On an August benchmark exam that is intended to predict the score on the end-of-year test, only 35% were proficient or advanced in math and 47% in English.

A primary source of actionable information about students is collected from what the teachers call the Monday assessment. Monday assessments are paper-based, mostly multiple-choice assessments of math and reading that probe student understanding of the required state learning standards. In form, it is meant to mimic the end-of-year standardized exam. Administered each Monday throughout the school year, the assessment includes about 24 to 26 questions in each domain and requires about 1½ to two hours to administer for each subject. Thus, much of each Monday is taken up administering and scoring the assessments. The teachers choose most questions from released items from Pennsylvania state tests or from other states' released items that match the learning standards the teachers want to assess that week. The chosen items represent varying levels of challenge.

To tailor the content of the assessments to the needs of the classroom, the items fall into three categories:

- **Some items test students on new content before the teacher has introduced the learning standards in class.** Teachers use results on these items as a pretest to understand what students know about new content to prepare for upcoming instruction.
- **Other items assess standards that have been covered previously in class.** These items cycle in and out of the Monday assessments over time to check that the students learned and continue to demonstrate mastery of

Propel McKeesport

McKeesport, Pa.

Grades: **K-8**

Enrollment: **387**

Staff: **24 teachers**

Racial/ethnic mix:

White:	22%
Black:	72%
Hispanic:	2%
Asian/Pacific Islander:	0%
Native American:	0%
Other:	3%

Limited English proficient: **0%**

Languages spoken: **English**

Free/reduced lunch: **88%**

Special education: **12%**

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the tested standards. Results on these items help determine whether concepts need to be reviewed as a classroom activity or if identified students need to review specific content.

- **Finally, there are items for concepts that students have recently struggled with on earlier Monday assessments.** Results from these items help the teachers understand where students are on a learning progression in mastering those challenging standards.

Although the teachers use multiple-choice items that are mostly from standardized exams, they use the results formatively to impact their practice. To help make multiple-choice items more informative about students' understanding of standards, the teachers require students to provide a written explanation of their answers for each item. This explanation may include why they chose a particular answer and/or the steps they took to solve the problem. These explanations typically are one

or two sentences and may also include numerical symbols. A key element of the teachers' practice is to have students explain or justify their reasoning, in writing or orally. The explanations serve two purposes: They support student self-regulation by helping students monitor their own understanding and serve as important sources of data for the teachers. Multiple-choice formats may not provide enough diagnostic information for teachers, so the explanations make the multiple-choice items more diagnostic.

In general, Monday assessments represent a context for the teachers' professional learning.

For example, when asked what the teachers think when a student gets a multiple-choice item correct but the explanation is wrong, one of the teachers responded, "It means they guessed."

A recognized challenge for teachers using assessment information productively is the timeliness of the data. Standardized test data often cannot be used formatively because results come back weeks or months after administration. To address this challenge, these teachers score the Monday assessment almost immediately. They score the multiple-choice items, read the explanations, and record results, including whether the explanation was correct, so that students get the results as quickly as possible.

MAKING SENSE OF THE DATA

The teachers record Monday assessment data using three units of analysis:

- First, the performance of each student is recorded as a percentage of test items correctly answered. For example, a student who scored 12 out of 24 earns a score of 50%.
- Second, the performance of the class is recorded with respect to performance category: below basic, basic, proficient, or advanced, which again mimics levels of the end-of-year standardized exam.
- Finally, each student's performance is recorded with respect

to certain concepts on the test. This notifies the teachers of standards with which individual students are struggling, as well as standards with which most of the class is still struggling. For example, students might start to show a good understanding of straightforward rounding questions, but a rounding word problem on the assessment may show that the students need more practice with the skill of rounding in varying contexts. The assessment data indicate how broad and how deep the understanding of rounding is when new problem contexts are introduced deliberately on the Monday assessment.

Students learn about their performance on the Monday assessment in two stages. Individual assessments are scored and returned to students the same day, showing them which test items they answered correctly and their overall percentage of correct answers. On Tuesday, a white board in the classroom prominently displays test performance results for the class in several categories. Class performance itemizes the percentage of students who have scored at each performance category. In addition, the students' mean score for the assessment is listed. This mean score is graphed on the white board, showing how the class as a whole has performed for the previous weeks. The posted results often spark discussions about performance and goal setting for the following week. The teachers ask students to verbalize attributions that support the connection between effort and outcome and to make explicit attributions about why they performed as they did.

PROFESSIONAL LEARNING FROM DATA

Collecting and analyzing data about students' understanding of important learning standards provides these teachers with rich professional learning opportunities as they strive to improve their effectiveness. Monday assessments give systematic markers of student progress and understanding. Students' successes and struggles offer suggestions for which topics need to be reviewed and re-emphasized. As the teachers monitor student progress, the data also allow for reflection on the impact of their instructional plans. As patterns of student accomplishment, as well as misunderstanding, become evident from Monday assessment data, both teachers are able to reflect on and critique the value of their lesson plans, the feedback they provide, the learning supports they design, the rhetoric they use, and the messages they transmit to students and parents.

Monday assessments also support discussions about each teacher's instructional activities because it is a common routine in both of their classes. They commonly discuss students' achievement, progress, and strategies to target improvement. For example, the teachers can identify general patterns of performance in students across reading and math. If a student has poor patterns of performance on both assessments that deviate from the student's typical pattern, they can seek to understand larger issues influencing the student's performance and may

collect data to support these working hypotheses about student performance. In addition, this common instructional routine also enables them to compare each other's strategies for analyzing the data, which sometimes provides new ways to discern the progress of their students.

In general, Monday assessments represent a context for the teachers' professional learning. The teachers are standards-driven in their approach to instruction. They have developed routines, including Monday assessments, that provide the right balance between wanting to know about individual students and whole-class progress. These Monday assessments provide enough detail for these teachers to act on instructionally. At the same time, the Monday assessment practice, though it takes effort to collect, record, and analyze data, is practical in classrooms. Monday assessments represent what these two teachers have learned about using assessment information to impact in substantive ways what they do in class. Based on students' understanding of standards, these teachers react and strive for more effective approaches to support student growth.

ORGANIZATIONAL SUPPORT

This article focuses primarily on these teachers' practices in relative isolation from their school contexts, but it is important to describe how their context supports their practices. The school supports the teachers' professional learning from data in four important ways:

- **These two teachers share the same students.** Therefore, each student's performance can be compared and discussed. Importantly, individualized plans for improvement are shared across teachers so each student can benefit from that shared effort. The messages students receive about how to improve in math are often congruent with how they can improve in English.
- **The teachers have a common planning time every day.** This allows for time in their day to plan and reflect together on the progress of their students.
- **Once a month, the two teachers meet with the principal and instructional coaches in status meetings.** The purpose of these meetings is to discuss the performance of the class as a whole, as well as to identify specific students to target for improvement. The teachers bring their Monday assessment data to these meetings as evidence for students' needs and achievements.
- **The school as a whole encourages the use of student data as an organizational norm.** One of the powerful practices that characterizes instruction in the school is that the "continuous use of data shapes and guides instruction."

WHAT WE HAVE LEARNED

There are several lessons to be gleaned from these teachers' practices. These lessons are consistent with the broader research literature of data use in schools but provide more detail and a

richer context of success than much of that literature.

1. **Student data that most directly influences instruction comes from instruction.** While teachers find value in a variety of data, such as standardized tests, attendance reports, and reports from teachers, information about students generated from their classroom experiences provide the clearest indicator for what to do next instructionally to make classrooms more reactive to student needs.
2. **Sharing data publicly with students is important.** At the class level, sharing data about progress with students demonstrates expectations. Plus, discussing data with students supports student self-regulation, an important developmental priority for these teachers.
3. **Actionable data is timely.** Though it takes a time commitment to score the assessments each Monday, that information is timely enough for teachers and students to use. The teachers usually use the information from the previous Monday assessment to influence what they teach and stress the following week. The delay, if there is any, is only a few days or a week. This is important for any effort to use data formatively.
4. **Using student data is individual and social.** By using data from a common instructional activity, teachers learn about the analysis, interpretations, and decisions their colleagues make to support student learning.
5. **Student data must speak to the learning goals.** Teachers can be overwhelmed by the amount of data students generate in and out of class. The data they gather from Monday assessments reflect their instructional priorities, progress toward the standards, and support for student self-regulation of learning.

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