EDUCATIONAL LEADERSHIP

- Read Abstract

Turning on the Lights: What Pre-Assessments Can Do

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Effective pre-assessments can illuminate where students are now so that teachers can lead them to mastery.

Pre-assessment has a bad reputation. That's largely because pre-assessment is so often used only to compare pre- and post-unit results, thus serving as little more than a thief of instructional time and a discouraging exercise for students.

As Hattie (2012) reminds us, students' innate development and simple exposure to material will naturally cause some growth in a student's achievement over time, even if no instructional intervention takes place. The traditional use of pre- and post-assessments may measure that expected growth, but it does little to actually increase student learning. To harness the power of pre-assessment to improve student achievement, we must craft sound, efficient pre-assessment instruments and use those instruments thoughtfully to drive instruction.

Ground Rules for Effective Pre-Assessment

Pre-assessment is a way to gather evidence of students' readiness, interests, or learning profiles before beginning a lesson or unit and then using that evidence to plan instruction that will meet learners' needs. The advent of more rigorous national standards makes the intentional and thoughtful use of pre-assessment even more crucial as teachers seek to prioritize, focus, and differentiate instruction for the wide variety of student needs represented in increasingly diverse classrooms.

Useful Pre-Assessments

To enable teachers to design effective lessons differentiated for readiness, pre-assessments must be designed to reveal significant differences in the knowledge, skills, or conceptual understandings of students. In addition, the most useful pre-assessments

- Are administered shortly before the lesson or unit will be taught so that they provide the most up-to-date information about students' strengths and needs.
- Serve as an invitation to the coming learning experience, not a barrier.
- Pique students' interest in what they're about to study.

- Include just a few key questions.
- Are aligned with key lesson or unit goals—the facts, skills, and understandings that are essential for students to know. (Wiggins & McTighe, 2005)
- Gauge students' understanding in addition to their knowledge and skill.
- Are accessible to all students, rather than restricted to those with enriched backgrounds.
- Seek to discover what students *do* know instead of seeking to confirm what they *don't* know.
- Give students different and multiple ways to show what they know.
- Uncover potential connections between the student and the content.

A strong pre-assessment taps the well of the student's mind to draw out anything he or she might know, understand (or misunderstand), and be able to do relative to the upcoming unit. But a pre-assessment doesn't need to be long or complicated to achieve this goal. In fact, the best pre-assessments are often short and to the point. The questions should effectively wake up the students' minds and prod them to provide the teacher with information that can inform planning.

Less-Useful Pre-Assessments

A pre-assessment is useless unless it tells teachers what and how students are thinking. For this reason, multiple-choice and true-or-false items do not usually lend themselves well to pre-assessment unless students are prompted to explain, defend, or justify their choices. Similarly, giving students long lists of specific terms to define or highly complex tasks to complete often yields little valuable information.

What about using an end-of-chapter test from the textbook as a pre-assessment? This is problematic for at least two reasons. First, such tests are usually designed to gauge factual knowledge, not conceptual understanding (which is also why they might not make good summative assessments without substantial revision). Second, textbook assessments tend to rely on question formats that either don't capture students' reasoning or allow students to answer correctly simply by guessing. In other words, they're not helpful for informing instruction.

Designing a Pre-Assessment: Where to Start

Pre-assessment design begins with clearly articulating the goals of the unit or lessons—what all students should know, understand, and be able to do (Tomlinson & McTighe, 2006). Without that spotlight on key goals, pre-assessment design is truly a shot in the dark—as is all other instruction in the unit!

Next, consider any crucial pre requisites. What knowledge and skills must students already possess to meet the requirements of the unit without great struggle? For example, a pre-assessment for a unit on linear equations would probably include questions that ask students to add and subtract integers.

Then, as you design questions, make sure that the pre-assessment focuses on measuring student understandings rather than just knowledge and skills. Some teachers find it helpful when drafting a pre-assessment to code their unit goals and note next to each prospective pre-assessment question which goals that question would measure (see "Planning a Graphing Unit Pre-Assessment").

Finally, limit questions on the pre-assessment to those that have predictable instructional implications. Surveying students about narrow bands of dates, names, or definitions, for example, can squander valuable pre-assessment opportunities: Such foundational information will most likely be included in the unit lessons regardless of student answers on the pre-assessment. Further, students' factual knowledge—or lack thereof—does not provide enough information to guide decisions about how to challenge or support students' processing of the unit's more complex content.

A Case in Point

Last year, Ms. Harley's attempt to pre-assess her students before a unit on World War II left her frustrated. For efficiency, she used a multiple-choice format focused on key dates, figures, and events of the conflict. The results were unsurprising—a few students answered all the questions correctly, but most students either did not have or could not readily recall such detailed background knowledge. Ms. Harley was at loss as to how to design instruction that would meet these diverse student needs. She went ahead and taught the unit as usual.

This year, Ms. Harley's professional learning community focused on designing effective assessments, and Ms. Harley decided to give pre-assessment another shot. She realized that her unit goals had focused on discrete knowledge and isolated skills rather than on application and understanding, which in turn had led to pre-assessment items that did the same. Moreover, her multiple-choice format provided few clues about the reasoning behind students' choices.

Working with a colleague, Ms. Harley rearticulated her outcomes in terms of key knowledge, essential skills, *and* conceptual understanding (Wiggins & McTighe, 2005) and designed pre-assessment items that captured the essence of those goals (see "Pre-Assessment for a Unit on World War II"). This revised pre-assessment yielded far

more useful information than her previous attempt had done.

Responses to the first question provided examples from students' lives, movies, books, television shows, and so on that Ms. Harley could use to hook her students into understanding the relationship between the end of World War I and the beginning of World War II. For example, one student described a time when he was grounded because of a conflict with his sister, which in turn caused another conflict with fellow students he needed to meet with outside of school to complete a group project. Other students cited instances of intertwining conflicts from popular book series such as *The Hunger Games*, Harry Potter, and *Twilight*.

Responses to the first and second questions together offered insight into students' conceptual understanding of the interconnected nature of conflict and gave Ms. Harley some ideas for how to support and challenge students' thinking about the historical and present-day implications of that interconnection. For example, student responses that described the harsh penalties that the victorious Capitol imposed on the defeated outlying districts in *The Hunger Games* supplied analogies for a class discussion about the Treaty of Versailles' contribution to Germany's role in World War II.

The third and fourth questions revealed what students already knew—or thought they knew—about World War II. Ms. Harley discovered multiple misconceptions that she would need to address, as well as a few areas that she could spend less time on than she had originally planned. For instance, many students expressed or implied a belief that the United States was involved in the war from the outset and was prompted by press coverage that informed the U.S. public of the Nazis' heinous acts. Ms. Harley used an online interactive exhibit on the role of the press in covering events of the Holocaust to challenge these ideas. She prompted students then and throughout the unit to confront and reflect on their initial understanding and how their perspectives had changed in light of historical evidence.

The final question asked students to read a historical document, President Truman's unsent letter to *Chicago Sun-Times* columnist Irv Kupcinet, dated August 5, 1963 (see http://media.nara.gov/media/images/29/4/29-0325a.gif) and to draw and support conclusions from this document. This question provided a way to discern students' readiness to tackle the sources they would digest during the unit. Students' responses showed a range of depth and understanding, which suggested to Ms. Harley that she might need to differentiate through tiered sets of questions for analyzing source texts of various levels of complexity.

Equipped with these pre-assessment results, Ms. Harley felt that she was beginning the unit with her eyes more widely open to the obstacles that she and her students might encounter, as well as a clearer sense of how to surmount those obstacles.

Looking Inside Students' Minds

Fortunately for teachers, no student—regardless of background or experience—approaches a concept, topic, or skill "empty" (Jensen, 2005). Every student's brain is teeming with things they already know; things they understand; things they *think* they understand (which may actually be misconceptions); things they're interested in; and things they're *not* interested in. Pre-assessment enables the teacher to look inside students' minds and ask, "What's going on in there?" Without pre-assessment, it can be all too easy to make false assumptions about what students do and don't understand on the basis of preconceived impressions or months-old standardized test results.

Pre-assessment is a time-saver, too. It can tip off the teacher to potential trouble spots in a planned unit of study and help the teacher direct the focus of a unit more precisely on what's most essential for students to learn or master, given what they already know or don't know. Student responses on pre-assessments can provide ideas for lessons and activities. Individual or collective responses often make for intriguing lesson hooks or reflection prompts.

By revealing where each student is beginning, pre-assessment can uncover places in the unit where different students may need different instruction to make progress. However, because pre-assessment cannot predict student growth over time, it cannot and should not be used as a measure to place students in learning groups for the duration of a unit. Readiness changes constantly as learning goals change, as students gain knowledge and skill, and as the teacher responds to patterns in student needs (Tomlinson, 2003). So during the unit itself, teachers must regularly check in to see how students' learning is progressing, where they are stuck, and what support they need to take the next step. In other words, pre-assessment is a starting point, not a definitive sorting tool.

Education experts Hilda Taba and Deborah Elkins (1966) warned, "Teaching in the dark is questionable practice." At its best, pre-assessment can turn on the lights. It can illuminate student thinking, interests, learning preferences, experiences, and even the content itself. Armed with the most current classroom-level data about student understanding and skills, teachers can make proactive, timely decisions about the instruction that will enable learners to achieve mastery. Pre-assessment isn't just a catalyst for differentiation—it's a launching point for more effective teaching and learning in general.

Planning a Graphing Unit Pre-Assessment

Goals of the Instructional Unit

Understanding Goals

- U1: Graphs are visual representations that depict relationships between data points.
- U2: To be useful, a graph must communicate information clearly.
- U3: Different types of graphs are "good for" communicating different information about data AND for communicating the same information to different audiences.

Knowledge Goals

- K1: Parts and purposes of different kinds of graphs (bar graph, line graph, circle graph), and types of vertical and horizontal bar graphs (side-by-side, stacked).
- K2: Benefits and limitations of different kinds of graphs.

Skill Goals

- S1: Create and interpret data using different kinds of graphs.
- S2: Evaluate the benefits and limitations of using different kinds of graphs in presenting (given a data set).

Pre-Assessment Prompts

1. Use the graph paper provided to create two different kinds of graphs that represent the data in the table. (There are many possibilities!) Be sure to label all the parts of each graph so that someone else can understand what the graph shows. (K1, U1, U2, U3, S1)
2. What are the names of the two kinds of graphs you used? (K1)
3. Why did you choose to use each graph? With whom would you share them? (K2, U1, U3, S2)
4. Write a question that someone could answer using each of your graphs. (K1, K2, U3, S2)

Pre-Assessment for a Unit on World War II

1. Describe a situation in which *one* conflict caused *another* conflict to arise. You can use an example from real life, literature, or media.
2. What conflicts fueled World War II?
3. What key people, events, and ideas were central to the war?
4. Who "won," who "lost," and what happened as a result?
5. Examine President Harry Truman's letter to a journalist written almost two decades after his presidency. What can you infer about why Truman wrote this letter? What does the letter reveal about why Truman decided to drop the bomb and how he felt about it? Use evidence from the text to support your answers.

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