

**Tracking Student Performance Strand
National Science Foundation Conference
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Tracking Student Performance Theme

This theme broadens the construct of student assessment beyond the current narrow focus on state minimal competency and standardized measures. It is critical that schools develop a system of multiple measures that informs and improves the teaching/learning process while simultaneously working to meet growing state accountability pressures. How do we know what students know and don't know and how has teaching impacted their knowledge?

Conference participants discussed and completed the following tracking student performance stem in work-alike groups and in the strand meetings:

A comprehensive assessment system that informs and improves the teaching and learning process is characterized by ...

Day One: Work-Alike Groups

Before breaking into their assigned strands, work-alike groups gathered to discuss each of the strand themes and summarized their thoughts with stem completions. The six different work-alike groups completed the tracking student performance stem as follows:

A comprehensive assessment system that informs and improves the teaching and learning process is characterized by ...

Work-Alike Group	Tracking Student Performance Stem Completion
Project director or other project administrator	... all stakeholders receiving, analyzing, interpreting, utilizing, and sharing data from multiple sources to make all critical decisions.
Project data collector (evaluator or researcher)	... the assessment of higher-order skills, generation of useful data to support instructional improvement, and demonstration and/or communication that students are meeting high expectations.
Higher education partner from either natural sciences or education	... clearly aligned instructional goals that provide valuable feedback to educators and students and support <i>student attainment</i> of real-world knowledge applications.

Instructional guide/implementer (project field operative working directly with teachers)	... a total buy-in by the teaching community, alternative methods of assessment, frequent assessments, and the ability to read and <i>use</i> the data to plan and improve teaching and learning.
Instructional leader (teacher, principal, curricula specialist or superintendent)	... data that is useful, disaggregated, reported in a timely manner, and accessible by all; alignment with the curricula; clear expectations and standards understood by all teachers; provision of data that can be used to improve classroom instruction and professional development; and a variety of ongoing assessments that are continuously improving.
Policymaker (legislator, superintendent, education service center representative)	... stakeholders understanding and buying into both the process and consequences of assessments at all levels in the education process, including the allocation of resources.

These stem completions were transferred from the work-alike group meetings to the tracking student performance strand meeting, where participants discussed the completions with the following questions in mind:

1. What matters? Identify critical attributes.
2. How do you measure those critical attributes?
3. How do you know the attributes lead to increased student performance and learning?

Day One: Tracking Student Performance Strand

Using the document “Building Tests to Support Instruction and Accountability” and pp. 8–14 in the book *Using data/getting results: A practical guide for school improvement in mathematics and science* (see “Tools and Resources for Tracking Student Performance” section), groups of three in the strand discussed what was missing in the stem completions. During whole-group discussion, strand participants—the majority of them evaluators—noted that the completions:

- Did not address equity issues. (“We don’t take the time to use data to understand poverty’s effects on learning.”)
- Assumed the assessment system was for assessing students only instead of students, teachers, principals, and schools.

A panel of five sophomore and junior students from Floresville High School [\[LINK TO http://www.floresville.isd.tenet.edu/high/\]](http://www.floresville.isd.tenet.edu/high/) in Floresville, Texas, (30 miles southeast of San Antonio) spoke to strand participants about how they feel their academic performances are being assessed and tracked. The students, mostly advanced placement classmates, made the following comments:

- Teachers need to get involved more in the teaching of their subjects rather than just assigning end-of-chapter tests that prompt students to find answers in the textbook.
- Students learn more in classes with teachers who assign projects and presentations, create hand-written tests, and do not use textbooks.
- Standardized tests need to cover a variety of topics. Most standardized tests just cover reading and mathematics—not all the subjects at which students may excel.
- Standardized test prompts are not challenging enough. They cater to the lowest denominator. Students like to learn from tests, e.g., one student said she discovered books she wanted to read because passages from these books were used in SAT prompts. Students want a “higher thinker” version of standardized tests.
- Students spend too much of their class time preparing for standardized tests. When the course is over, they don’t feel like they’ve learned what they need to know.
- Students want teachers to take more time to go back and explain to students what they might have gotten wrong on a test or assignment. Rubrics help students understand what they did wrong and what they should do to correct it, but rubrics are not very “personal.”
- Tests pinpoint what a student does not know rather than what a student does know. Hands-on tests assess student knowledge better.
- Students should have the opportunity to assess teachers.
- Not all schools offer the same courses or require the same of students in similar courses. (e.g., At one school, students may be required to read books over the summer for an English class, while at other schools, students are not required to complete this preparation and do not read as many books as the students in the first school.)

The student panel prompted the following reflections from strand participants:

- Students—not the adults—are the stakeholders. We need to listen to their opinions/voices more. Our decisions are for them at every level.
- Students are getting a wide variety of instruction. There should be excellent instruction for every classroom and every student.
- It's interesting that some students expect to learn from their tests/assessments.
- “Haves” are taking from the “have-nots.” Are the best teachers going to the suburban districts or high-tech jobs? Teachers are getting good training from “have-nots” and moving to “haves” for better salaries. Are the most qualified teachers teaching advanced placement courses?
- Standardized tests are not well aligned with curricula.

Dr. Okhee Lee, education professor at the University of Miami, concluded Thursday's strand session by summarizing the main themes that developed during the stem discussion and the student panel:

Student Panel

- Teachers' teaching and students' learning don't match, according to students. Leads to dropouts.
- This particular advanced placement student group doesn't expect all their student peer groups (special education, reduced-fee lunch, etc.) to prepare for calculus and college. They use “we” and “they” vocabulary: “They don't get school.” There is no sense of expectations for the different groups of students.

Stem Completions

- In many comprehensive assessment systems, we expect a lot more than what students are doing and expecting.
- These stems oversimplify a very complex system that needs to address issues like diversity, which brings up disaggregated data. “The devil is in the details.”

Tracking: Assessment and Instruction—Assessment has to come before instruction.

State Assessment

- There's usually no state assessment in elementary science, so you have to have to pull reading, writing, and mathematics into science teaching to get buy-in from schools.
- The nature of state assessment, as the students say, “is very boring.” It targets the minimum level.
- Those who design state assessment tests may not consider the diversity and character of the state. (e.g., Iowa test designers did not mention Everglades in Florida assessments.)

Classroom Assessment

- Classroom assessment guides instruction.
- Do students have opportunities to participate in hands-on, scenario-based problems?

- Assessment assumes some basic prerequisites are in place, but this may not be the case because of lack of resources.

Diversity (For whom are we designing these assessments?)

- Literacy has to be a part of science and math education because of non-English-speaking children.
- What do we mean by culture? People don't want to talk about it because it's a sticky issue.
- Assessments need to consider community and the incongruence between schools and homes.
- We need to consider different outcomes. We are losing students because of how we're handling culture and literacy.

Day Two: Tracking Student Performance Strand

During the next strand session, participants randomly divided into groups, narrowed down their priorities, and discussed what tools were available for tracking student performance beyond state assessment systems. Alignment, professional development, multiple assessments, and data disaggregation were major themes during this discussion.

Tools/Resources Available	Priority Areas for Measurement
Group One	
<ul style="list-style-type: none"> • Texas RSI attitudinal survey • Delta teacher-student protocol observation form (five-minute snapshots) • Oklahoma USP standards-based observation form for coaches in classrooms 	<ol style="list-style-type: none"> 1. Determine frequency of tests, who developed the tests, and to what the tests are tied 2. Monitor incremental changes that take place during change process
Group Two	
<ul style="list-style-type: none"> • Texas Public Education Information Management System (PEIMS) <ul style="list-style-type: none"> ○ Local/state assessment tool that includes teacher appraisal info along with other data ○ AS400, an IBM-based data analysis application/“push system” • Nancy Love book <i>Designing Professional Development for Teachers of Science & Mathematics</i> [???LINK TO http://www.addall.com/Browse/Detail/0803966628.html] 	<ul style="list-style-type: none"> • Determine whether teacher assessment is in line with district and state standards • Tie professional development and student performance with implementation at classroom level
Group Three	
<ul style="list-style-type: none"> • Data on graduation rates, colleges attended, advanced placement scholars, college test takers and results • CTB, Stanford 9 offer social and demographic data • Terra Nova <i>Connections</i> handbooks allow teachers to use their own data to make instruction decisions • Northwest Evaluation Association Achievement Level Tests (locator test) • Joellen Killion book <i>Assessing Impact: Evaluating Staff Development</i> [LINK TO http://secure.podi.com/] 	<ul style="list-style-type: none"> • Identify independent and controlled variables • Be more precise in using data to set more realistic goals for student achievement

<p>acb/showdetl.cfm?&DID=12&Product_ID=1545&CATID=18] and presentations (800-727-7288) show how to individualize staff development (Concerns-Based Adoption Model or CBAM)</p> <ul style="list-style-type: none"> • Walk-throughs focusing on implementation of staff development • Kentucky and New Mexico have experience in using data to set student achievement goals 	<ul style="list-style-type: none"> • Bring action research into classroom to influence instruction • Evaluate the components of professional development, community, and business
<p>Group Four</p>	
<ul style="list-style-type: none"> • Teacher committee-developed local criterion referenced tests (Mississippi, Arkansas) Formative⇒Standards • Group-developed pacing guides (Mississippi, Arkansas) • Presentation of district tests a year prior to state tests to be prepared (Jackson, Mississippi) 	<ul style="list-style-type: none"> • Use mentor programs to follow up • Align teacher and student assessment, assignments to standards • Align benchmarks to scope of sequence • Align middle school and high school algebra
<p>Group Five</p>	
<ul style="list-style-type: none"> • Enrollment and pass rates in mathematics and science for trend tracking 	<ul style="list-style-type: none"> • Create effective assessments that inform student progress • Use data with administrators and teachers to inform them about instruction • Communicate the expectations and differences for use of state standardized tests vs. end-of-course exams
<p>Group Six</p>	
<ul style="list-style-type: none"> • Math checklist portfolio and system to track content standards 	<ul style="list-style-type: none"> • Assess students

<p>at different levels—not necessarily grade levels (BIA—Bureau of Indian Affairs—schools in New Mexico)</p> <ul style="list-style-type: none"> • Circle of Wisdom funding for evaluation of effectiveness of progress in community-based education • Annenberg Project defines information that needs to be collected and skills that need to be assessed (Santa Fe Indian School) 	<p>in a culturally appropriate manner</p>
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After this discussion, strand participants broke into groups to focus on linking professional development and student achievement, science assessment, cultural context of attribution, and the Corpus Christi guests’ efforts with their Standards in Practice program, vertical teams, and walk-throughs. The groups shared their thoughts afterwards during whole-group discussion.

Professional Development Breakout

- Use evaluation instruments more effectively.
- When communicating the impact of professional development on student achievement, use sound bytes or nuggets of information to make data easier to understand for policymakers and others.
- When assessing professional development, consider the instability of systems (high turnover) and insufficient salaries to work through problems.
- Do not let districts fall into quick-fix programs on topics like how to take tests. They cost a lot of money and do not yield long-lasting results.
- Brett Springston, principal at Spring Woods High School [**LINK TO <http://swhs.spring-branch.isd.tenet.edu/>**] in Houston, Texas, received a national staff development award from the U.S. Department of Education for his teacher evaluation program completed by students.
 - Students trained in elements on a teacher-evaluation checklist go from room to room and evaluate teachers.
 - The students, who have a range of GPAs, come together to report their findings: “Don’t let us sleep, don’t put us in rows, and don’t sit behind desk.”

Science Assessment Breakout

- Inquiry-based science **curriculum** + inquiry-based science **instruction** = inquiry-based science **assessment**
 - This is time-consuming and expensive for each student.
 - Computer simulations would help, but many schools do not have enough computers.
- NSF rubrics measures can be used to capture and track student performance.
- Texas soon will have assessments on biology, chemistry, and physics, but they are not performance-based.

- There are no quick fixes in this strand, but there are a lot of people who want to work on this.

Cultural Context of Attribution

- We need to determine how to present indigenous culture elements to NSF in a way that would be beneficial to the reform that is already taking place.
- We should examine cultural interventions and their alignment with state standards—how do we demonstrate effects of intervention?
 - Navajo students who participated in a 21-day math and science camp are excelling at a faster rate than Navajo students who did not participate. The camp teaches math and science from an indigenous perspective.
- Use alternate assessments, as allowed by drivers 5 and 6, to take into consideration culture—but are we just lowering standards for diverse students?
 - Navajo schools in New Mexico have created their own sample called NORM to use in assessments and rule out bias. This population tends to get lost in the distribution of scores. The BIA system isn't helping because students who do well are shipped off to boarding schools, and students don't want to leave their reservations, so they don't strive in school.
 - In Louisiana, agrarian parents don't promote education because it will allow their children to leave home
- We should remember that culture is always a factor in standardized tests (snowfall questions don't work well in South Texas).

Corpus Christi Guests: Standards in Practice Program, Vertical Teams, and Walk-Throughs

Standards in Practice (SIP) Program (Taken from Ruth Mitchell, *The Education Trust*, 1997)

- This model uses scoring as a tool to focus attention on the quality of classroom assignments and their direct connection with standards.
- If the below steps are followed carefully, the SIP model will result in rigorous assignments and scoring guides that will enable students to recognize and reach for high standards.
 1. We all complete the assignment or task.
 2. We analyze the demands of the assignment or task.
 3. We identify the standards that apply to this assignment.
 4. We generate a rough scoring guide from the standards and the assignment.
 5. We score the student work using the guide.
 6. We ask: *Will this work meet the standards? If not, what are we going to do about it?* We then plan action at the classroom, school, district, and state levels to ensure that all students meet the standards.

Mathematics Vertical Teams

- Corpus Christi ISD uses the Advanced Placement Program Mathematics Vertical Teams Toolkit, developed by the College Board and the Charles A. Dana Center at

The University of Texas at Austin, to support the alignment of mathematics curricula in grades K–8 and the “Algebra for All by Grade 8” program.

- The objective for the “Algebra for All by Grade 8” program states that all students will take algebra by the end of eighth grade and mathematically adept students will have completed geometry.
- The primary goal of the vertical team strategy is to enhance all students’ achievement by increasing communication and cooperation among the members of the team about the mathematics program at their schools. The kit can be ordered from College Board Publications at (800) 323-7155.

Literacy-Focused Walk-Throughs

- The purpose of walk-throughs is to inform instruction.
- With their walk-throughs, Corpus Christi strand guests focus on literacy in content areas, such as math and science.
 - Teachers are exposed to rubric.
 - Evaluation team members (up to six people) enter classrooms and look for key points. This takes about 10 minutes.
 - The evaluation team members meet to check for consistency among their reviews.
 - The school follows up with effective staff development. This produces a community of learners in the school.
- Elements of more accountable, literacy-focused schools include:
 - Data used to diagnose student reading levels and to measure progress (e.g., Gates-MacGinitie (G-M), STAR, TAAS, periodic writing prompts);
 - A climate of professional learning about reading and literacy, with principals as leaders of instruction improvements;
 - Leadership teams that direct instructional improvement;
 - Intensive staff development, support and encouragement to improve literacy instruction provided by staff developers, master reading teachers, principals, and assistant principals;
 - Professional development for principals, assistant principals/master reading teachers, and staff developers in literacy content (CRISS), instruction, and coaching;
 - Literacy instruction across each school including reading/writing workshops and infusing reading comprehension and writing strategies in content classes;
 - School-wide agreement on writing, including format and rubrics for different types of writing;
 - Additional interventions for students who perform in the lowest quartile in the G-M assessment (e.g., after-school programs);
 - More contact with parents on student progress; and
 - Formal relationships with other schools that have a literacy focus.

Tools and Resources for Tracking Student Performance

Everyone in the strand received the following:

1. Busick K., Ferguson C., Kusimo P., Ritter M.G., Solano-Flores G., and Trumbull E. (2000). *Making assessment work for everyone: How to build on student strength*. San Francisco, CA: West Ed.
2. The Commission on Instructionally Supportive Assessment. (2001). *Building tests to support instruction and accountability: A guide for policymakers*.
3. Love, N. (2002). *Using data/getting results: A practical guide for school improvement in mathematics and science*. Norwood, MA: Christopher-Gordon Publishers.
4. Kilpatrick J., Swafford J., and Findell B., eds. (2001). *Adding it up: Helping children learn mathematics*. Washington D.C.: National Academy Press.
5. Lee, O. and Fradd, S.H. (1998). Science for all, including students from non-English-language backgrounds. *Educational Researcher*, 27, 12-21.
6. Stenmark J.K., ed. (1991). *Mathematics assessment: Myths, models, good questions, and practical suggestions*. Reston, VA: National Council of Teachers of Mathematics.

Five sample copies of the following were available for review:

1. Doran R., Chan F., and Tamir P. (1998). *Science educator's guide to assessment*. Arlington, VA: National Science Teachers Association.
2. Educators in Connecticut's Pomperaug Regional School District 15. *A teacher's guide to performance-based learning and assessment*. (1996). Alexandria, VA: Association for Supervision and Curricula Development.
3. Office of Educational Research and Improvement (OERI). (1999). *TIMSS resources*.
4. Regional Educational Laboratories. *A toolkit for professional developers: Alternative assessment (1995-1998)*. Portland, OR: NWREL.

Strand guests provided the following resources for strand participants:

Rosaena Garza, director for academics, Corpus Christi ISD in Corpus Christi, Texas
Laura Adams, school services consultant for mathematics, Corpus Christi ISD

1. A standards-based report card
2. Standards in Practice—aligning teacher assignments to standards
3. Algebra for All by Grade 8—using for five years, all students take algebra before high school, use an assessment to determine where to place students
4. Vertical teaming—Dana Center Mathematics Toolkit
5. More Accountable Schools—three middle schools, focus on literacy in content areas, focus on math and science