



The Need for Formative Assessment in Education

Educators have come to understand that effective instruction requires periodic, standards-based assessment to determine what students have learned and what they still need to learn in order to meet learning goals and standards. Such information plays a critical role in planning how and what to teach at every level—district, school, and classroom.

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Real learning. Real results.™

“Results help us evaluate current instructional practices and make decisions about suggesting professional development to specific sites based on the data.”

Mark Sontag, curriculum coordinator of math and science, Irvine ISD, Irvine, California

note:

All of these formative assessment purposes are served through PLATO® Assessment, one of the six modules of the PLATO Teaching and Learning Enterprise.¹

¹ The PLATO® Teaching & Learning Enterprise is currently in beta release. PLATO Learning is targeting the 2005-06 school year for the release of this product.

Educators have come to understand that effective instruction requires periodic, standards-based assessment to determine what students have learned and what they still need to learn in order to meet learning goals and standards. Such information plays a critical role in planning how and what to teach at every level—district, school, and classroom.

District

At the district level, formative assessment of student performance can be used to:

- Monitor student progress relative to curriculum goals and standards and/or the approved instructional sequence, and then plan appropriate school improvement strategies;
- Provide disaggregated data for comparison and instructional planning related to the Adequate Yearly Progress requirements of the No Child Left Behind Act and to other critical assessments;
- Identify the needs and challenges of specific schools, grade levels, and demographic groups; and
- Track trends in student learning from year to year.

School

At the school level, formative assessments can be used to:

- Track student progress through the approved curriculum and against state and provincial standards;
- Identify the needs and challenges of specific classes, grade levels, and demographic groups;
- Create profiles of individual student learners, and identify students with specific needs, and plan instructional sequences that meet their needs;
- Identify leaders among the teaching faculty and areas where sharing instructional plans and strategies may help to provide additional support for individual teachers; and
- Analyze disaggregated data for comparison and instructional planning related to the Adequate Yearly Progress requirements of the No Child Left Behind Act and to other critical assessments.

Classroom

Classroom-level assessments can be used to:

- Evaluate student knowledge and skills before beginning an instructional unit or semester, with results used to determine areas of special emphasis and focus;

- Identify strengths and weaknesses of individual students;
- Evaluate student learning following a specific learning activity or set of activities; and
- Evaluate student knowledge and skills toward the end of an instructional unit or semester, with results used to measure what students have learned and determine what areas may need further work.

What Is PLATO Assessment?

PLATO Assessment encompasses the assessment solution formerly known as PLATO® eduTest Assessment—today’s leading online assessment system, scoring over 12 million tests since 1996—and other PLATO Learning assessment technologies.²

PLATO Assessment combines an array of fixed benchmark tests geared to state standards and national assessments; an item bank of over 180,000 test items; and a range of test creation, assignment, and reporting options to provide a powerful formative assessment system for districts, schools, and classroom teachers.

PLATO Assessment is designed to function as a powerful tool in its own right, available through separate purchase, and as an integral part of the PLATO Teaching and Learning Enterprise.

PLATO Assessment Resources

- Item bank with over 180,000 test items in math, reading/language arts, science, and social studies for grades 2–11
 - Searchable by state and provincial standards and by keywords
 - In multiple choice, true-false, grid response, and automatically scored essay formats
- Fixed Benchmark Tests, featuring sets of two to three ready-to-use comparable tests, based on state standards for more than 20 states
- The PLATO National Plus NAEP tests, featuring sets of three ready-to-use comparable tests, covering grades 2–8 for mathematics and language arts. These tests are based on NAEP standards and also reference TIMSS, NCTM, NCTE, and IRA standards and documents.
- Fixed Benchmark Tests, featuring sets of two ready-to-use comparable tests, geared to Stanford 9, ITBS, and Terra Nova

² Features like Create-A-Test, aggregate reporting, and scanning that have been used by PLATO eduTest Assessment customers the past 8 years will be fully integrated into the PLATO Assessment module of the PLATO Teaching and Learning Enterprise in the 2005-06 school year.

“The [PLATO] eduTest assessment played a key role in our strategy for improving student performance, providing teachers, administrators and students with real-time, critical information on academic progress”

Manuel B. Rodriguez, superintendent, Roswell Independent School District, Roswell, New Mexico

PLATO Assessment Capabilities

- **Reports for district and school decision-makers that**
 - Identify areas of strength and need at the school and classroom level
 - Show progress from one test to the next
 - Provide aggregate data on responses to individual assessment items
 - Present multiple statistical measures of central tendency for student performance on Fixed Benchmark Tests
 - Summarize performance of individual students
- **Classroom reports that provide the same information as district and school-level reports, at the level of the classroom and individual student**
- **Creation of custom tests in a variety of ways:**
 - Edit/customize existing PLATO tests
 - Move existing paper tests to an online format for test administration and reporting
 - Build a test from scratch by using PLATO Assessment test building tools and selecting items from the database and/or creating original test items
- **Creation of original test items in three formats: multiple choice, true-false, and grid response**
- **Flexible test administration options: online test administration, paper-based tests with online entry sheet, or paper-based tests with scanning. All these choices deliver the same comprehensive reports with detailed information to guide instruction.**

PLATO Assessment Professional Development

Several types of professional development are provided to support educators' implementation of PLATO Assessment:

- **Introduction to the PLATO Assessment software:** Basic procedures
- **Curriculum and assessment integration:** Interpreting reports and using assessment data to inform instruction
- **Test creation:** Editing/customizing PLATO tests, moving paper tests to online format, and/or building a test from scratch
- **Online support:** Tutorials and quick reference cards related to PLATO Assessment procedures

The following sections describe some of the major ways PLATO Assessment can be used to support the needs of district decision makers, school leaders, and classroom teachers.

Uses by District and School Decision-Makers

Periodic Tracking of Student Progress

PLATO Assessment provides resources and capabilities that let schools and districts test and re-test periodically to check how students are doing in comparison with the standard curriculum sequence, state standards, and/or other important instructional frameworks.

Administrators can use these assessment results to identify specific schools, grade levels, classrooms, curriculum content areas, and topics that need additional support, and then provide that support in the form of focused professional development, instructional resources, supplementary staffing, etc.

- **PLATO Fixed Benchmark Tests** based on state standards are available for more than 20 states. These can be used in several ways:
 - Each test pack includes two to three comparable ready-to-use tests that can be administered near the beginning of the year, at the semester break, and later in the year, or at other times as appropriate.
 - Districts and schools can copy the PLATO Fixed Benchmark Tests, then use PLATO Assessment's Create-A-Test feature to add, delete, or re-sequence assessment topics and items to more closely match the local curriculum sequence.
 - Specific content topics of the PLATO Fixed Benchmark Tests can be administered every 6–9 weeks to measure student progress. This is done by copying a test, then using PLATO Create-A-Test to delete all but the desired topics.
- Using **PLATO Create-A-Test**, districts and schools can build tests that are aligned to state and provincial standards and/or to the standard curriculum sequence, selecting relevant items from the test item database. If desired, districts and schools can also create their own test items and include them in tests. These assessments can be used in the same ways as PLATO Fixed Benchmark Tests.
- The **PLATO Fixed Benchmark Tests** based on NAEP, Stanford 9, ITBS, and Terra Nova can be used in the same ways as PLATO tests that are based on state standards.

“One of the purposes of the tests [is] to ensure equity across classrooms within the district for all students. By mandating the use of these benchmarks, the district is able to make a statement about the importance of one standard compared to another and also ensure that all students have the opportunity to learn all the standards within these curricular areas.”

Mark Sontag, curriculum coordinator of math and science, Irvine ISD, Irvine, California

“PLATO . . . ongoing formative assessments, teacher-created tests, and periodic benchmark exams . . . help identify areas that needed to be addressed so the school [can] initiate and sustain adequate yearly growth.”

Penny Lloyd Baldrige, assistant superintendent of curriculum and instruction, Carteret County Public Schools, North Carolina

Planning for Adequate Yearly Progress

Schools and districts across the U.S. are working hard to meet the Adequate Yearly Progress requirements of the No Child Left Behind Act (NCLB). PLATO Assessment and PLATO® Data Management and Analysis, used in combination, provide resources that can assist not only in analyzing student assessment data but also in planning instruction that will lead to improved learning for targeted student populations, as required by NCLB. This process works as follows.

- Data from high-stakes assessments are imported into **PLATO Data Management and Analytics**, which provides powerful capabilities for data analysis, aggregation and disaggregation, reporting in a variety of formats, and comparison with previous years’ data. For example, school and district decision makers can:
 - Create demographic reports based on subgroups and identify the achievement gaps by group on the latest high-stakes test results;
 - Run report queries to compare the current assessment data with previous years’ data, by subgroups, to see if group-specific achievement gaps have changed over time;
 - Compare performance of a specific category of students over multiple years—for example, 4th graders in 2003, 2004, and 2005, to see if exiting 4th graders in 2005 are performing better than exiting 4th graders in 2003; and
 - Track a specific group of students and their performance over time—for example, 4th graders in 2003, 5th graders in 2004, 6th graders in 2005.
- **PLATO Fixed Benchmark Tests**, related to state standards, are administered several times a year. Alternatively, schools or districts may create their own assessments, using **PLATO Assessment Create-A-Test**, which focus on key content and skills from the state and provincial standards and/or the approved curriculum sequence.
- Using PLATO Data Management and Analytics, school and/or district decision makers perform analyses of the PLATO formative assessment data, similar to the analyses that were performed for the high-stakes assessments. This provides multiple sets of assessment data over the course of the school year that can supplement the single set of data provided by the high-stakes assessment.
- Data from both sets of assessments are analyzed together to note patterns and trends. For example, decision makers may:
 - Determine whether specific gaps between groups are narrowing, broadening, or remaining stable;
 - Identify changes in specific content and skill areas that are particularly challenging for specific groups; and

- Track results to see whether specific instructional initiatives with targeted groups are having the desired impact.
- Based on the analysis, school and/or district decision-makers can adjust instruction on an ongoing basis in response to changing student needs

Supplementing Data from Other Assessments

In addition to high-stakes assessments directly related to NCLB’s Adequate Yearly Progress requirements, many schools and districts use other assessments to measure how students are doing—for example, state-level tests at the high school level, in some cases linked to graduation requirements. PLATO Assessment can be used to supplement information from these assessments and tailor instruction accordingly, in a manner similar to that described above for Adequate Yearly Progress.

- In some cases, existing **PLATO Fixed Benchmark Tests** may map to the content covered on the specific assessment used in the school or district. For example, some of the PLATO Fixed Benchmark Tests map to objectives covered on NAEP, Stanford 9, ITBS, and Terra Nova.
- Using **PLATO Assessment’s Create-A-Test** feature, districts and schools can build tests that are aligned to standards and content topics covered on the specific assessment used in the school or district.
- Using **PLATO Data Management and Analytics**, schools and districts can analyze and compare data from the formative tests created using PLATO Assessment with data from the other assessments, on the school, class, and individual student level. Trends can be identified, including progress in specific skill areas, areas of ongoing need, and relative effectiveness of instruction across multiple years. Based on this information, school and district leaders can take appropriate action—such as adjusting the curriculum sequence, supplying additional instructional resources, providing professional development in specific areas, and adding instructional support for specific student populations—to improve student learning.

Uses by Teachers

Classwide Assessment and Planning

PLATO Assessment provides resources and tools to guide instructional planning in the classroom on an ongoing basis throughout the school year. Based on assessment results, teachers can focus their efforts on areas that are particularly challenging to the class, evaluate the success of their instruction, and modify their plans to account for the changing class profile of student learning over the course of the year.

“The reports help me understand exactly where teachers are assessing, and I can see the progression of students throughout the year. With this data, I can make sure that our teachers are meeting the needs of students and ensure that our school meets the requirements of our improvement plan by monitoring progress of each subgroup of learners.”

Bill Honey, assistant principal,
Newport Elementary, Carteret
County Public Schools, North
Carolina

“Teachers who chose pre-testing as an option are modifying the amounts of time spent within an individual unit to reflect less time in those areas students already know well and additional time in those areas where students demonstrate [a] need.”

Mark Sontag, curriculum coordinator of math and science, Irvine ISD, Irvine, California

“I create a weekly assessment for the skill we are working on. The results tell me if I can move onto the next skill or need to spend more time on this one. It has saved me a lot of time by telling me exactly what students need to work on and has made my instruction more efficient and targeted.”

Tara Patterson, 3rd grade teacher, Carteret County Public Schools, North Carolina

- Teachers can access information on **assessments assigned at the district and school level** for their students. Results can be used to identify areas of strength and weakness for the class as a whole where students need additional help or additional challenges.
 - Assessments conducted toward the beginning of the school year or semester can help guide overall curriculum planning for the upcoming instructional period.
 - School or district assessments administered every 6–9 weeks can provide teachers with ongoing, up-to-date information about students’ progress through the approved instructional sequence.
 - Assessments conducted toward the end of an instructional unit or semester can help identify areas that need further work and review for the class as a whole.
 - Assessments conducted toward the end of the school year enable teachers to analyze what students have learned over the course of the year. Such information can help identify instructional needs of students who will be placed in special programs, such as summer school. It also provides a basis for planning at the beginning of the next school year, as teachers review their students’ performance from the end of the previous year.
- Teachers can use **PLATO Create-A-Test** to develop focused assessments that evaluate student knowledge and skills before, during, and after an instructional unit or semester, or following a specific learning activity or set of activities. This is done by building tests from the **PLATO Assessment test item database** that focus on specific instructional content.
- The **PLATO Assessment** classroom reports provide information that can help teachers focus instruction to meet the specific needs of the class. For example, aggregate data on responses to individual assessment items can help teachers analyze specific student misconceptions and identify which students are experiencing those misconceptions.

Tailoring Instruction to Individual Students

Teachers can use **PLATO Assessment** to identify individual students’ strengths and needs, so that instruction can be tailored to meet those needs. For example, teachers can provide additional activities for students to work on in the classroom and at home and suggest ways that parents can work with their child to reinforce learning.

- Teachers can access information on assessments assigned at the district and school level for their students. Results can be used to help determine specific areas where students need additional help or additional

challenges. Similar information can be gathered from more focused assessments created by the teacher—e.g., unit and semester tests.

- The PLATO Assessment classroom reports list students who do well (areas of strength) and poorly (areas of need), both on the assessment as a whole and on individual sections.
 - By noting which students are particularly challenged by specific objectives, teachers can use the assessments as a guide in grouping students with similar instructional needs.
- Multiple versions of the PLATO Fixed Benchmark Tests can be assigned two or three times during the school year, allowing teachers to measure student progress both globally and by specific skill or content topic.
 - Teachers can use PLATO Create-A-Test to develop assessments that focus on areas that have been identified as particularly challenging for individual students. Such assessments allow teachers to more actively monitor individual student progress where needed.
 - PLATO Assessment’s Student Profile summarizes all the assessment information about an individual student. The Student Profile can be used as a tool for individualized instructional planning, discussions with students and parents, conferences within the school, and other needs related to individual student performance.

Prescription into PLATO® Content

PLATO Assessment can be used in conjunction with PLATO Content to place students into instructional sequences that are tailored to their individual needs.

- **PLATO Fixed Tests** create individual learning paths of PLATO® courseware for students, based on their performance in the assessments. Students exempt out of sections of the courseware corresponding to areas where they did particularly well on the assessment. In the remaining areas, they can work at their own pace to complete the related courseware activities.

Conclusion

In all of the ways described here and more, PLATO Assessment provides a system of formative assessment resources and tools to help administrators and teachers—at the district, school, and individual classroom level—to plan and carry out instruction more effectively for improved student learning.

“I have special education students included in my mainstream classroom. Now I can ‘Create-A-Test’ to meet students at their individual skill level!”

Stephanie Mason, 4th grade teacher, Carteret County Public Schools, North Carolina



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