WestEd

Science Assessment Development Laboratory for the National Board for Professional Teaching Standards

What Is the NBPTS?

A central challenge in school reform is enabling the teaching profession to attract the highest caliber novices and retain the very best veterans. To help accomplish this goal, a coalition of teachers, administrators, politicians and education reform advocates founded the National Board for Professional Teaching Standards in 1987. Its mission has been to create a first for teachers–a national certification program that recognizes the most accomplished teachers across the country within their respective content areas and grade levels. Unlike licensure, which aims to ensure minimum competence, National Board certification will identify and acknowledge the most talented of the teaching corps.

Why National Board Certification for Teachers?

Members of the National Board, most of whom are classroom teachers, believe that creating a credible way to reward and recognize outstanding teachers will benefit the entire profession. Board certified teachers will be standard bearers of excellence who personify the teacher as educational decision maker, instructional strategist and mentor. In the National Board's view, accomplished teachers must not only know their subject and how to convey it to students, but also be able to utilize a range of other teaching strategies: systematic thinking, the ability to learn from experience and seek advice, the ability and willingness to draw on research when making difficult decisions, the ability to use multiple instructional methods, and ultimately the talent for recognizing students' individual differences and the ability to treat all students equitably.

How Do We Measure Complex Skills?

Before certification can be instituted, a credible means of identifying and assessing excellence must be developed. To that end, the National Board has embarked on a two part development process: first, an extensive effort to establish rigorous teaching standards in a number of different fields and, second, the creation of a series of assessments to measure how well teachers perform under these national standards. Traditional tests, such as multiple choice exams and checklist-style observations, are not credible when used to identify accomplished teaching; these tests reflect an unenlightened, simplistic notion of the art of teaching. To develop an entirely new testing system, the National Board is contracting with researchers to explore a range of assessments, including teaching portfolios, cognitive conceptual maps, videotaped sessions, computer problem-solving simulations and reflective essays.

What Is WestEd's Science Assessment Development Laboratory (ADL)?

WestEd (formerly Far West Laboratory), one of the nation's 10 regional educational laboratories, is working with the National Board to develop assessments in science. The science certificate will be subject specific: candidates must demonstrate in-depth knowledge in either physical science, life science, or earth and space science.

WestEd is currently developing and field testing new assessments for teachers working with students at the Adolescence/Young Adulthood (ages 14 to 18+) developmental level. It is anticipated that the Early Adolescent (ages 11 to 14) and the Middle Childhood (ages 7 to 12) science teacher certification will follow in subsequent years.

The specific characteristics of an accomplished science teacher, as described by the National Board's Standards Committee, will guide the assessment development. For example, the national science standards address teachers' understanding of students, their knowledge of science and how they establish a favorable context for learning.

WestEd is developing a two-part assessment system. First, teacher candidates will work collaboratively with their colleagues to assemble a structured portfolio of their work which may include, for example, a videotape of an investigation lesson, samples of student work, written materials used for a unit, evidence of collaboration with colleagues, and/or reflective essays. The second stage of evaluation involves teachers coming to an assessment center where they may be asked to do a variety of tasks, such as designing a hands-on investigation given a list of resources or using technology to demonstrate the depth and breadth of their knowledge of science.

Who is Eligible for Science Certification?

To stand for the Adolescence/Young Adulthood (AYA) National Board Certification in Science, candidates must meet minimum eligibility requirements including a baccalaureate degree and at least three years of classroom science teaching experience. In addition, candidates must currently be teaching at least one science class in the same field in which they wish to obtain certification (e.g., physical, life or Earth/space sciences). To qualify for the AYA developmental level, there must be at least eight students in the teacher's science class and at least 50% of the students must be 14—18+ years of age (no post-secondary classes).

Who Is Involved in the Development Process?

To meet this assessment development challenge, WestEd staff is working collaboratively with a talented and accomplished group of professionals. Included is a cadre of exemplary science teachers, nationally recognized university professors, educational researchers and measurement specialists. Further consultation is provided by a fairness in testing review group that will evaluate the assessment process with regard to diversity and fairness.

National professional organizations and scientists will also be working with WestEd to explore issues related to science content. Expert teachers are at the core of the entire development process. They are intimately involved in the design and pre-pilot testing of portfolio entries and assessment center exercises and scoring system (rubrics, criteria) and in pilot testing (December 1996—June 1998). The portfolio will be available to candidates during the 1997—98 school year and the assessment center exercises will be available in August 1998.

If you would like to know more about the development of this national science teacher assessment system or want to participate in development activities, contact:

Kristin Hershbell
WestEd
Los Altos Hills Office
12345 El Monte Road
Los Altos Hills, CA 94022-4599

Voice 415.949.8462
Fax 415.949.8482
Email: khershb@wested.org