



## **Teacher Licensing Assessments: Assessments of Content Knowledge and Teaching Ability**

### **Assessments of Candidate Content Knowledge**

The most common exam of teacher content knowledge used in U.S. states (40) is ETS' Praxis, which actually consists of three separate exams: the Praxis Core, a test of literacy and general academic knowledge; the Praxis II Subject Tests, a set of 90 different tests corresponding to different subjects for specialist teachers; and the Praxis Content Knowledge for Teaching Assessment, which measures subject-specific content knowledge, with a focus on specialized content knowledge used in elementary school teaching. States that use Praxis for teacher licensing do not necessarily purchase all of these assessments and the Praxis Content Knowledge for Teaching Assessment is relatively new.

Praxis cut scores are set at the state level, and pass rates are generally very high, leading to widespread consensus that the exam is insufficiently rigorous. In Maryland, the 2016 pass rate was 98%.

It is our understanding that at its last State Board of Education meeting, Maryland will require, as of July 2018, individuals pursuing elementary school teaching (K-6) to take the Praxis Content Knowledge for Teaching Assessment. That assessment is described below, followed by options other states have adopted high school teacher licensing.

#### *Praxis Elementary Exam: Applied Content Knowledge for Teaching*

The Praxis Elementary Exam: Applied Content Knowledge for Teaching is a computer-based exam that covers four subjects: Reading/Language Arts, Math, Social Studies, and Science. It consists of selected-response and constructed response questions.

The exam is designed to assess teachers' understanding of content they will need to teach elementary school students, as well as pedagogical content knowledge they will need to teach that information to elementary school students. The Reading/Language Arts and Mathematics tests are aligned to the Common Core State Standards, while the Science test is aligned to the Next Generation Science Standards. The broad topics and question types covered in each of the four subjects are outlined below.

The Reading/Language Arts subtest lasts 90 minutes and consists of 55 numeric entry and selected-response questions and two constructed response questions. Topics include:

- Phonological awareness and phonics
- Fluency in literacy development



- Vocabulary development, such as root words and context clues
- The role of comprehension and metacognition in literacy development
- Basic elements of fiction vs. nonfiction
- Basic elements of poetry and drama
- Uses of figurative language
- Use of pedagogical tools and resources in language arts
- Components of written language
- Types and traits of pieces of writing
- Stages of the writing process
- Sentence types and structures
- Organization of writing
- Aspects of speaking: purpose, audience, tone
- Aspects of viewing: evaluating images, interpreting message
- Aspects of listening: following directions, responding to speaker
- Role of speaking, viewing, listening in language acquisition for English language learners

The Mathematics subtest lasts 85 minutes and consists of 48 selected response and numeric entry questions and 2 constructed response questions. Topics covered include:

- Mathematics processes and problem solving
- Basic number systems
- Four basic operations
- Basic number theory
- Word problems
- Numerical patterns
- Basic algebraic methods
- Associative, commutative, distributive properties
- Additive & multiplicative inverses
- Special properties of zero and one
- Equalities and inequalities
- Properties and attributes and geometric figures
- Transformations
- Units of measurement
- Visual display of quantitative data
- Simple probability
- Basic descriptive statistics



The Social Studies subtest lasts 50 minutes and consists of 55 selected response questions. Topics covered are based on “typical social studies coursework in a bachelor’s degree in education” and include:

- World and regional geography
- Interaction of physical and human systems
- Classical civilizations
- 20<sup>th</sup>-century world history
- Cross cultural comparisons
- U.S. History, from European exploration to the space age
- Forms of government
- Key documents and speeches in U.S. history
- Citizenship and democracy
- Key terms and basic concepts of economics
- Understanding of social studies as inquiry and research processes

The Science subtest lasts 60 minutes and consists of 47 selected response questions. Topics covered include:

- Earth science
- Structure and function of living systems
- Reproduction and heredity
- Change over time in living things
- Physical and chemical properties and structure of matter
- Forces and motions
- Forms of energy
- Simple machines
- Personal health and nutrition
- Science as inquiry and scientific processes

Taking all four subtests costs \$210. Individual subtests costs \$79 for Reading/Language Arts and Math, and \$60 for Science and Social Studies.

*Massachusetts Test of Educator Licensure (MTEL) and Adaptations of MTEL in Other States*  
In Massachusetts, all candidates are required to take the MTEL for Literacy Skills, developed by the state in collaboration with Pearson, a state advisory of teachers, policymakers and assessment experts to ensure that the test was aligned to Massachusetts’ state standards and curriculum frameworks. MTEL is seen as a more rigorous alternative to the Praxis. Candidates are also required to take additional MTEL subject tests (from over 30 offered) depending on the subjects they will teach. Elementary school generalists may be required to take up to six tests, including special



education, English as a Second Language, math, general curriculum, literacy and writing, and foundations of reading, depending on the populations they serve. In the most recent administration for which data is available (winter 2016,) 86 percent of first-time test takers passed the required Literacy Skills test on the first try (only 62 percent of those attempting the test again after failing did so.) But the first-time pass rates for the special subject tests averaged to only 62 percent, and when candidates who fail the subject tests go back and retake them, only 41 percent pass. Therefore, while the literacy test is a relatively low bar (although still more rigorous than the Praxis,) the subject tests are demanding.

MTEL's test structure varies depending on the subject, but in general, each MTEL subject test is a 4-hour computer-based exam. Typically, there will be a mix of between 80-100 selected-response questions and 2-4 longer constructed response questions. Each MTEL test costs the test-taker \$139, with the state providing some waivers to candidates who apply and demonstrate financial need.

Because MTEL is well-regarded as a challenging and rigorous measure of candidates' content knowledge for teaching, other states have contracted with Pearson to conduct a similar test development process. Both the Florida Teacher Certification Examinations (FTCE) and the Minnesota Teacher Licensure Examinations (MTLE) reviewed the MTEL content outline against their state standards and then adopted or adapted individual questions when they found direct alignment. Items were then reviewed by state-based teachers and education preparation program faculty as part of a content validation study organized by Pearson. Pearson staff and state stakeholders drafted final questions based on the results of that study. Florida's FTCE tests look very similar to MTEL in format: they are each four-hour exams in multiple parts, with roughly 100 multiple choice questions and 2-4 longer constructed response questions. Minnesota's tests are shorter, at only about 2.5 hours, and typically omit the constructed response questions.

Massachusetts, Florida and Minnesota are under a five-year renewable contract with Pearson, and Pearson is responsible for the ongoing design refinement, data collection, administration and evaluation of the exams. Costs vary depending on the size of the state and the terms of the contract. Minnesota had a one-time \$85 million appropriation for test development, review and validation over two years (2010-2011). Florida has a recurring appropriation of \$13.78m annually over the five-year contract (\$69 million). FTCE costs \$200 per subject test for the test taker, while Minnesota's MTLE, which, as noted above, is shorter and omits constructed response question types, costs \$95 per subject test.



### **Assessments of Candidate Teaching Ability**

In general, while requiring candidates to take an assessment of content knowledge is common across the United States, requiring teachers to take an assessment of how well they actually teach – usually a portfolio-based assessment – is less common. That said, such exams are expanding rapidly. Only one assessment of this type, the edTPA developed at Stanford, is used widely. ETS recently introduced a new assessment of this type called PPAT which has been adopted in one state along with edTPA in that same state (Delaware). Recent studies have shown a strong association between completion of performance-based assessments, particularly portfolio-based assessments, and teachers’ learning outcomes and on-the-job performance.<sup>1</sup> Such promising results, along with the prevalence of assessments of teaching ability in top-performing countries, suggest that these tools can be an important part of a strong teacher licensing system.

Maryland does not require a test of teaching ability statewide. The state does require all candidates to complete a portfolio of teaching as part of their preparation program but does not specify what the portfolio should look like or how it should be scored. The University of Maryland system is using the edTPA to fulfill the portfolio requirement. But because the state does not require edTPA for certification, the edTPA submissions are not being officially scored according to edTPA guidelines, making comparisons with other states or use for out-of-state certification impossible.

#### *edTPA*

edTPA is a performance-based assessment used by teacher preparation programs throughout 41 states to measure whether candidates have developed the skills they need to be effective teachers. edTPA was developed by the Stanford University Center for Assessment, Learning and Equity (SCALE) in partnership with the American Association of Colleges of Teacher Education. Pearson has developed the platform on which most edTPA portfolios are uploaded and scored. The test is aligned with inTASC standards.

Although it is a test of ability, not content knowledge, edTPA is a subject-specific assessment that includes versions for 27 teaching fields:

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<sup>1</sup> Cantrell, S., & Kane, T. J. (2013). Ensuring fair and reliable measures of effective teaching: Culminating findings from the MET project’s three-year study. Seattle, WA: Bill & Melinda Gates Foundation. Available from [http://www.metproject.org/downloads/MET\\_Ensuring\\_Fair\\_and\\_Reliable\\_Measures\\_Practitioner\\_Brief.pdf](http://www.metproject.org/downloads/MET_Ensuring_Fair_and_Reliable_Measures_Practitioner_Brief.pdf)

Cavalluzzo, L., Barrow, L., Mokher, C., Geraghty, T., & Sartain, L. (2014). From Large Urban to Small Rural Schools: An empirical study of National Board certification and teaching effectiveness. Alexandria, VA: The CAN Corporation. Retrieved from [http://www.cna.org/sites/default/files/research/IRM-2015-U\\_010313.pdf](http://www.cna.org/sites/default/files/research/IRM-2015-U_010313.pdf)

Chung, R. R. (2008). Beyond assessment: Performance assessments in teacher education. *Teacher Education Quarterly*, 35(1), 8-28



- Agricultural Education
- Business Education
- Classical Languages
- Early Childhood
- Educational Technology Specialist
- Elementary Education (contains both Elementary Literacy and Elementary Mathematics components)
- Elementary Literacy
- Elementary Mathematics
- English as an Additional Language
- Family and Consumer Sciences
- Health Education
- K-12 Performing Arts
- Library Specialist
- Literacy Specialist
- Middle Childhood English-Language Arts
- Middle Childhood History/Social Studies
- Middle Childhood Mathematics
- Middle Childhood Science
- Physical Education
- Secondary English-Language Arts
- Secondary History/Social Studies
- Secondary Mathematics
- Secondary Science
- Special Education
- Technology and Engineering Education
- Visual Arts
- World Language

In order to complete edTPA, aspiring teachers must prepare a portfolio of materials during their student teaching clinical experience. These include a substantial written component: lesson plans designed to support their students' strengths and needs; analysis of whether their students are learning and how their teaching could improve; and reflections on how they could become more effective. The portfolio also includes unedited video recordings of teachers at work in real classrooms as part of their practicum. For a review of the relevant literature that informed the design principles of the edTPA, see [here](#).





Teachers submit the portfolio at the end their practicum and are judged by a certified edTPA scorer. In some cases, portfolios are double or triple scored to ensure consistency and validity. Stanford provides recommended cut scores for the exam, but states or participating institutions are free to set their own cut scores.

edTPA costs \$300 per test administered. These costs are typically shouldered by the candidate, but states or programs offer financial assistance in some cases by purchasing vouchers from SCALE. The \$300 fee covers all development costs and operational services associated with implementation, delivery, scoring and reporting, as well as customer support service for candidates and faculty. Assessment services also include the recruiting and management of qualified educators who serve as scorers, scoring supervisors, and trainers. Therefore, there is no upfront development or membership costs to states or preparation programs. States or preparation programs can elect to pay a membership fee to SCALE, which grants them access to a database of toolkits, sample videos, and professional development tools that they can use to help candidates prepare for the edTPA. The membership fee is determined based on the member's size, number of candidates, and ability to pay, and varies on a case-by-case basis. There is no need to pay for membership in order to administer edTPA.

Currently, 19 states required a performance assessment for licensure and/or for state program accreditation, and have explicitly approved edTPA for these purposes:

- Alabama
- Arkansas
- California
- Connecticut
- Delaware
- Georgia
- Hawaii
- Illinois
- Iowa
- Minnesota
- New Jersey
- New York
- North Carolina
- Oregon
- South Carolina
- Tennessee
- Washington
- West Virginia



- Wisconsin

*PPAT*

ETS' PPAT assessment is a new test of candidate teaching ability as an alternative to edTPA. Unlike edTPA, which is conceived as a summative portfolio assessment at the end of teachers' practicum, PPAT is both formative and summative and takes place over the course of the clinical experience. PPAT is not subject-based, unlike edTPA. There are four parts to the PPAT assessment, and for each part, candidates must submit artifacts such as lesson plans and videos as well as a written reflection. The parts are:

- "Knowledge of Students and the Learning Environment", in which candidates submit:
  - A 7-page reflection showing their understanding of their classroom, school, and community, and how factors related to those environments affect student learning.
  - A chart laying out community, district and school factors that impact student learning with accompanying instructional strategies for addressing those factors,
  - A description of their classroom demographics
  - A tool they use for communicating with parents and the community
- "Assessment and Data Collection to Measure and Inform Student Learning", in which candidates submit:
  - An assessment they have designed for a lesson that includes a rubric or scoring guide
  - A description and rationale for the design of the assessment and the student learning data the candidate plans to collect
  - A description of two focus students who require different learning needs, and for whom the candidate will need to modify the learning assessment in some way
  - A description and analysis of data collected during the assessment
  - A seven-page reflection of how the assessment and data analysis will inform and guide future whole-class instruction, and how the candidate would modify the assessment when administering it in the future
- "Designing Instruction for Student Learning", in which candidates submit:
  - A description of two focus students that have different learning needs
  - A representative lesson plan for whole-class instruction
  - A representative differentiated lesson plan for each of the focus students
  - A work sample from both of the focus students, as well as from one class member other than the focus students
  - An analysis and reflection of eight pages on how to differentiate instruction to meet the needs of all students





- “Implementing and Analyzing Instruction to Promote Student Learning”, in which candidates submit:
  - A description of two focus students that have different learning needs
  - A representative lesson plan for whole-class instruction
  - Baseline student learning data for the whole class and the focus students
  - Student work samples from both of the focus students
  - A fifteen-minute video of instruction
  - A nine-page reflection on the extent to which the lesson met the learning goals for the entire class, and for the focus students in particular, as well as how the candidate would modify specific instructional strategies used in the video in the future to better meet the needs of all students

PPAT scorers are trained and certified by ETS and consist of K-12 educators and university faculty. Submissions are scored twice for reliability and returned to candidates within three weeks to enable reflection and completion of the next assignment.

PPAT has been piloted in teacher preparation programs in 16 states. To date, only Delaware mentions PPAT in state policy. Delaware requires "an assessment of performance, and either PPAT or edTPA are the only two exams that satisfy this regulatory requirement." There are no states that require *only* PPAT for licensure.

PPAT costs \$300 for candidates. Candidates can retake individual tasks that they fail the first time for \$75 each. There is no additional cost to the state requiring PPAT for certification, although the state may wish to subsidize the cost for candidates.