| **Virginia Board of Education Agenda Item** | **Seal of the Commonwealth of Virginia** |
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# Agenda Item: A

## Date: July 26, 2018

### Title: Final Review of Recommendation of the Advisory Board on Teacher Education and Licensure (ABTEL) for a Passing Score for the Praxis Computer Science (5652) Test for the Computer Science Endorsement

#### Presenter: Mrs. Patty S. Pitts, Assistant Superintendent for Teacher Education and Licensure

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## Purpose of Presentation:

Action required by state or federal law or regulation.

## Executive Summary:

Section [22.1-298.1](https://law.lis.virginia.gov/vacode/title22.1/chapter15/section22.1-298.1/), of the *Code of Virginia* states that the Board of Education has the statutory authority to prescribe licensure requirements.

Currently, the Board of Education requires the following assessments for an initial licensure:

• Virginia Communication and Literacy Assessment (VCLA);

• Praxis Subject Assessments; and

• Reading for Virginia Educators (RVE) for specified endorsements.

The Board prescribes the Praxis Subject Assessments as a professional teacher’s assessment requirement for initial licensure in Virginia. A Praxis Subject Assessment has not been prescribed for individuals seeking an initial license with an endorsement in Computer Science.

The Educational Testing Service (ETS) has developed a Praxis Computer Science (5652) test. The Computer Science test is designed to assess the computer science knowledge and competencies necessary for a beginning teacher of secondary school computer science.

Upon Board approval, individuals will be required to meet the Computer Science (5652) test requirement for initial license, and individuals holding a teaching license also will be eligible to add a Computer Science endorsement by passing the assessment. The *Licensure Regulations for School Personnel* allow any individual who holds a Virginia teaching license to add an endorsement to the license by passing a rigorous academic subject test prescribed by the Board of Education. [This testing option does not apply to individuals who are seeking an early/primary preK-3 or elementary education preK-6 endorsement or who hold a technical professional license, vocational evaluator license, pupil personnel services license, school manager license, or division superintendent license.]

In January 2018, a multistate standard-setting study was conducted by ETS for the Computer Science (5652) test. Participants from 17 states and the District of Columbia served on the multistate study panel. Virginia was represented by two teachers nominated by Virginia school divisions. A detailed summary of the study, *Multistate Standard-Setting Technical Report – Computer Science (5652)* is attached (Attachment 1) and includes participants, methodology, and recommendations. The purpose of the study was to recommend the minimum passing score for the Computer Science (5652) test designed to assess the computer science knowledge and competencies necessary for a beginning teacher of secondary school computer science.

The Praxis *Test at a Glance* document (Attachment 2) describes the purpose and structure of the assessment. The Praxis Computer Science (5652) test is a three-hour assessment which contains 100 selected-response items covering five content areas: Impacts of Computing (approximately 15 items), Algorithms and Computational Thinking (approximately 25 items), Programming (approximately 30 items), Data (approximately 15 items), and Computing Systems and Networks (approximately 15 items). The reporting scale for the Praxis Computer Science (5652) ranges from 100 to 200 scale-score points. Attachment 2: *Test at a Glance* provides representative descriptions of topics covered in each category.

**Multistate Standard-Setting Study**

The multistate standard-setting study for the Computer Science (5652) test is detailed in Attachment 1. The multistate panel recommended passing score is 47 out of a possible 80 raw-score points. The scale score associated with a raw score of 47 is 149 on a 100–200 scale.

The multistate standard-setting study provides the estimated Conditional Standard Error of Measurement (CSEM). The CSEM is a statistical phenomenon and is unrelated to the accuracy of scoring. All test results are subject to the standard error of measurement. If a test taker were to take the same test repeatedly, with no change in the test takers level of knowledge and preparation, it is possible that some of the resulting scores would be slightly higher or slightly lower than the scores that precisely reflect the test taker’s actual level of knowledge or ability. The difference between a test taker’s actual score and their highest or lowest hypothetical score is known as the standard error of measurement.

The CSEM for the recommended passing scores for multistate standard-setting study are shown below. Note that consistent with the recommended passing score, the passing scores at the different CSEM have been rounded to the next highest number, and the rounded values are converted to scaled scores.

**Conditional Standard Error of Measurement Summaries**

Computer Science (5652)

Passing Scores Within 1 and 2 CSEM of the Recommended Passing Score – Multistate Panel

|  | Raw Score | Scale score equivalent |
| --- | --- | --- |
| Recommended passing score (CSEM) | 47 (4.43) | 149 |
| - 2 CSEM | 39 | 135 |
| - 1 CSEM | 43 | 142 |
| +1 CSEM | 52 | 158 |
| +2 CSEM | 56 | 165 |

## At its April 23, 2018, meeting, the Advisory Board on Teacher Education and Licensure recommended that the Board of Education approve the use of the Computer Science (5652) test as a professional teacher’s assessment for the Computer Science endorsement and set a passing score of 142 for the test (1 CSEM below the recommended passing score). The passing score of 142 is 1 CSEM below the recommended passing score. The rationale for the recommendation is that Computer Science (5652) is a new assessment, and no performance data are available at this time. The Advisory Board on Teacher Education and Licensure recommended that the Board of Education implement the test requirement on September 1, 2018, with the exception of individuals applying for a license with an endorsement in Computer Science through Virginia approved programs who would become subject to the requirement effective January 1, 2020.

## Action Requested:

Final review: Action requested at this meeting.

## Superintendent’s Recommendation:

The Superintendent of Public Instruction recommends that the Board of Education approve the Advisory Board on Teacher Education and Licensure’s recommendations to: (1) use the Praxis Computer Science (5652) test as a professional teacher’s assessment for the Computer Science endorsement; (2) set a passing score of 142 for the test; and (3) implement the assessment requirement on September 1, 2018, with the exception of individuals applying for a license with an endorsement in Computer Science through Virginia approved programs who would become subject to the requirement effective January 1, 2020.

**Rationale for Action:**

The use of the Praxis Computer Science assessment will expand options for individuals to demonstrate proficiency in computer science to apply for an initial license (such as the experiential route to licensure) and allow individuals holding valid Virginia teaching licenses to request the addition of the Computer Science endorsement by testing.

**Previous Review or Action:**

Previous review and action. Specify date and action taken below:

## June 28, 2018

## Statutory and Regulatory Authority:

The *Constitution of Virginia* and the *Code of Virginia* provide authority for the Board of Education to promulgate Licensure Regulations for School Personnel.

[Article Eight, Section 4](https://law.lis.virginia.gov/constitution/article8/section4/) of the *Constitution of Virginia* states, in part, the following:

*The general supervision of the public school system shall be vested in a Board of Education…*

Section [22.1-298.1](https://law.lis.virginia.gov/vacode/title22.1/chapter15/section22.1-298.1/) of the *Code of Virginia*, states in part, the following:

§ [22.1-298.1](https://law.lis.virginia.gov/vacode/title22.1/chapter15/section22.1-298.1/) **Regulations governing licensure.**

*…C. The Board of Education's regulations shall include requirements that a person seeking initial licensure:*

*1. Complete professional assessments as prescribed by the Board of Education;*

*2. Complete study in attention deficit disorder;*

*3. Complete study in gifted education, including the use of multiple criteria to identify gifted students; and*

*4. Complete study in methods of improving communication between schools and families and ways of increasing family involvement in student learning at home and at school…*

*Code of Virginia,* Section [22.1-16. Bylaws and regulations generally.](https://law.lis.virginia.gov/vacode/title22.1/chapter2/section22.1-16/)

*Code of Virginia,* Section [22.1-299. License required of teachers](https://law.lis.virginia.gov/vacode/title22.1/chapter15/section22.1-299/).

*Code of Virginia,* Section [22.1-305.2. Advisory Board on Teacher Education and Licensure](https://law.lis.virginia.gov/vacode/title22.1/chapter15/section22.1-305.2/).

The *Licensure Regulations for School Personnel* state, in part, the following:

### 8VAC20-22-40. Conditions for Licensure.

*…B. All candidates who hold at least a baccalaureate degree from a regionally accredited college or university and who seek an initial Virginia teaching license must obtain passing scores on professional teacher's assessments prescribed by the Board of Education. With the exception of the career switcher program that requires assessments as prerequisites, individuals must complete the professional teacher's assessments within the three-year validity of the initial provisional license. Candidates seeking a Technical Professional License, the International License, the School Manager License, or the Pupil Personnel Services License are not required to take the professional teacher's assessments. Individuals who hold a valid out-of-state license (full credential with no deficiencies) and who have completed a minimum of three years of full-time, successful teaching experience in a public or accredited nonpublic school (kindergarten through grade 12) in a state other than Virginia are exempted from the professional teacher's assessment requirements…*

### 8VAC20-22-70. Additional Endorsements.

*A. An individual who holds a teaching license may add an additional endorsement to the license by passing a rigorous academic subject test prescribed by the Board of Education. This testing option does not apply to individuals who are seeking an early/primary preK-3 or elementary education preK-6 endorsement or who hold a technical professional license, vocational evaluator license, pupil personnel services license, school manager license, or division superintendent license.*

## Timetable for Further Review/Action:

Upon approval by the Board of Education, school divisions and institutions of higher education will be notified of the Praxis Computer Science (5652) assessment requirement.

## Impact on Fiscal and Human Resources:

Costs associated with the administration of the Praxis Computer Science (5652) assessment will be incurred by the Educational Testing Service. Prospective teachers are required to pay test fees.

**ATTACHMENT 1**

**Multistate Standard-Setting Technical Report**

***Praxis***® **COMPUTER SCIENCE (5652)**

**ATTACHMENT 2**

***Test at a Glance***

***Praxis***® **COMPUTER SCIENCE (5652)**