**VSBPE**

**Date: 4/19/2022**

**Item:** **Change of Praxis Core Math (5733) Score**

**ITEM:** Shall the VSBPE change the qualifying score for Praxis Core Math (5733)

**AGENCY RECOMMENDED ACTION:**

**That the VSBPE change the qualifying score for Praxis Core Math (5733) from 150 to 146.**

**BACKGROUND:** In February 2019 ETS conducted a Multistate Standard-Setting Study (MSSS) of the newly released Praxis Core Math subtest, test code 5733, and recommended a passing score of 150. In October 2021, a second MSSS was conducted with a new and unique task of identifying a lower score that would reflect a licensure candidate who could still be successful in student-teaching without passing the test, as long as they received substantial academic support. ETS made a distinction between candidates “Ready with support,” and candidates “Ready for program.” The panel made recommendations for a score for candidates “Ready with support” for all three subtests, which the Office has used to issue guidance to EPPs for supporting their candidates. Separately, the panel recommended that the current passing score of 150 for candidates “Ready for program” be lowered to 146, which is the question of this Item.

**SUPPORTING DOCUMENTS:**

**Summary of ETS Core MSSS**

**Summary of ETS Review of Praxis Core and “Ready with Support Candidates”**

In 2021 staff from Educational Testing Service (ETS) conducted a unique study of the Praxis® Core Academic Skills for Educators, with a focus on supporting and progressing teacher candidates who did not meet the recommended qualifying scores. ETS utilized the same general methods and practices normally used for their Multistate Standard-Setting Studies (MSSS): they convened a panel of educational experts recommended by State Education Agencies (SEAs) and used a modified Angoff standard-setting process to evaluate each of the three Praxis Core sub-tests. Within this process, the panel evaluates and rates the test questions based on what should be expected of a “Just-Qualified Candidate” (JQC) who is ready for an Educator Preparation Program, then makes a recommended passing score.

 What was unique to this MSSS is that they made a distinction between candidates who pass the recommended scores and are “Ready for Program,” and those who receive lower scores but are “Ready with Support.” The panel also evaluated and revised the qualities of a “Just-Qualified Candidate (JQC) who is Ready for an EPP” and created new qualities for “The JQC who Needs Support.” Lastly, they made recommendations for what types of supports should be given to JQS who needs support.

The panel recommended that the Reading and Writing sub-test scores remain the same, but recommend a Math sub-test score of 146, in contrast to the current recommendation of 150. Additionally, the panel recommended cut scores for JQCs who would need additional supports to be successful in an EPP and during student teaching. These lower cut off scores could be used to progress a candidate through a licensure program *if* the candidate is given robust academic support from their EPP. For Example, a candidate who passes the Reading and Writing subtests, but scored a 134 on their math subtest, should be given additional supports from their EPP. That candidate could still complete their program and receive the recommendation for licensure without a “passing score”.

ETS Published individual reports for each of the three Praxis Core sub-tests, and a short email summary. The following pages contain key details pulled from those reports and summary email; please note that formatting was not consistent between the three reports. The full reports will be made available as well.

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# Email Summary from ETS

**Recommended passing scores for READY WITH SUPPORT**

Oct 2021 panel recommendations based on a modified Angoff standard-setting process:

|  |  |  |
| --- | --- | --- |
| Reading (5713) | Writing (5723) | Mathematics (5733) |
| 142 | **144** | **134** |

**Recommended passing scores for READY FOR PROGRAM**

Oct 2021 panel recommendations based on panelists’ judgments at the total score level:

|  |  |  |
| --- | --- | --- |
| Reading (5713) | Writing (5723) | Mathematics (5733) |
| 156(same as 156 recommendation from 2013 standard setting) | **162**(same as 162 recommendation from 2013 standard setting) | **146**(one-half standard error of measurement below the 150 recommendation from 2019 standard setting) |

Skill-building supports for candidates

In defining substantial support, the panels identified

* use of academic support resources for an extended period (not just test prep workshops or other brief interventions): For mathematics and writing support provided for up to a year; for reading, at least a semester.
* individualized planning for candidates involving program coursework that integrates skill development as well as courses specifically designed for skill building (remediation). Supports also included tutoring and just-in-time help from institutional learning centers along with faculty advising and coaching.

For reading and writing, the kinds of academic supports identified included many that can be integrated into a candidate’s standard program (e.g., writing center support with course assignments). For math, the panel strongly indicated that, to be effective, supports need to include significant work with and by students that go beyond the standard curriculum. All panels noted that the needed supports require real institutional commitment.

# Definition of Just-Qualified Candidate (JQC) for Reading

THE *JQC who is Ready for an EPP* (WITH NOTATIONS IN BOLD)

*The Just-Qualified Candidate who is Ready for an EPP…*

1. Can infer logically from an informational text

2. Can identify specific details of text including how and why individuals, events or ideas interact as well as drawing inferences or making implications

3. Can summarize central ideas, themes, and key details

4. Can identify text organization in terms of cause/effect, compare/contrast, problem/solution, and fact/opinion**, and use to identify the text’s purpose/meaning**.

5. Can identify author’s point of view **or perspective**.

6. Can apply knowledge and use of language (vocabulary **with** multiple meanings, use of context clues**, and use of basic word relationships, e.g., affixes, root words**) to comprehend when reading

7. **Can relate** Knows how evidence relates to an argument within a text

8. Can apply ideas from reading to draw conclusions and make predictions

The *JQC who Needs Support*

The Just-Qualified Candidate *who Needs Support can*…

1. infer from an informational text that does not include elements such as visual representations, complex language, and specialized vocabulary

2. identify specific details of texts.

3. identify central ideas, themes, and key details (Note: May not reliably distinguish between central and supporting ideas.)

4. identify text organization in terms of cause/effect, compare/contrast, problem/solution, and fact/opinion,

5. identify author’s point of view.

6. use context clues, to comprehend unfamiliar vocabulary when reading

7. relate explicit evidence to an argument within a text

8. draw conclusions and make predictions involving basic and moderately complex texts.

# Definition of Just-Qualified Candidate (JQC) for Writing

The *JQC who is Ready for an EPP* (with Notations IN BOLD)

*The Just-Qualified Candidate who is Ready for an EPP can…*

1. Organize and develop ideas logically, making coherent connections and supporting with appropriate details

2. Establish clear theses (i.e., focus) **that are on-topic**

3. Use effective **Vary** sentence structures **(e.g., simple/compound/complex)** to strengthen writing

**4. Analyze text structure, including context, in order to edit and/or revise writing**

5. Effectively edit sentences for grammar, conventions, and usage

6. Effectively revise sentences for style and clarity

7. Identify **and begin to synthesize** information; and credit sources that are relevant and credible to a particular research topic

The *JQC who Needs Support*

The Just-Qualified Candidate *who Needs Support*…

1. Attempts to organize and develop ideas logically, making some connections and supporting with some appropriate details

2. Establishes theses (i.e., focus) that are somewhat on-topic but may need inferences on the part of the reader

3. Attempts to vary sentence structures (e.g., more simple/compound than complex) to strengthen writing (e.g., a focus on style instead of convention)

4. Attempts to analyze text structure, including context, in order to edit and/or revise writing (e.g., misunderstanding of the context)

5. Fairly consistently edits sentences for grammar, conventions, and usage

6. Revise sentences for clarity, but with some inconsistencies

7. Identifies information that is somewhat relevant to a particular research topic and attempts to give some credit to the sources

8. Inconsistently identifies sources that are credible to a particular research topic

# Definition of Just-Qualified Candidate (JQC) for Math

Description of the just-qualified candidate focuses on the knowledge/skills that differentiate a *just* from a *not quite* qualified candidate. Notes added by the 2021 panelists are bulleted.

THE *JQC who is Ready for an EPP* (WITH NOTATIONS IN BOLD)

*The Just-Qualified Candidate who is* ***Ready*** *for an EPP can…*

**Number and Quantity**

1. Solve problems involving integers, decimals, percents and fractions.

2. Demonstrate an understanding of place value, naming of decimal numbers, and ordering of numbers.

3. Can translate basic word problems into numerical problems and/or models.

4. Solve contextual problems by identifying relevant numbers, information, or operations including identification of counter examples to statements using basic arithmetic and applying order of operations.

**Data Interpretation and Representation, Statistics, and Probability**

• Add Ratio and proportional reasoning – reliance on proportional reasoning.

5. Solve problems involving basic statistics including mean, median, mode, and range.

6. Compute simple probabilities and use probabilities to solve simple problems.

7. Identify and interpret positive and negative linear relationships when represented graphically or algebraically.

**Algebra and Geometry**

• In algebra and geometry, some of this is beyond what an elementary teacher needs to master. Some of these may be close to the “same/nuanced”

• Add Measurement somewhere, could be part of geometry but also thinking about a scaling factor.

8. Write a two-step equation or expression that models a real-life or mathematical problem.

9. Solve and/or model contextual problems that can include linear relationships.

10. Solve single variable, multi-step linear equations with context and/or without context.

11. Use properties of operations to simplify and evaluate algebraic expressions.

12. Use properties of angles and common two-dimensional shapes to solve problems.

The *JQC who Needs Support*

The Just-Qualified Candidate *who Needs Support can*…

**Number and Quantity**

1. Solve problems involving integers.

2. Solve one-step problems using non-complex decimals, percents, and fractions.

3. Demonstrate an understanding of place value, naming of decimal numbers, and ordering of numbers.

4. Translate basic word problems into numerical problems and/or models.

5. Solve simple one-step measurement involving area, circumference/perimeter, and unit conversions.

6. Demonstrate proportional reasoning by solving one-step ratios and proportions problems using pie-charts, tables, or other visuals.

**Data Interpretation and Representation, Statistics, and Probability**

7. Solve problems involving basic statistics limited to mean, median, mode, and range.

8. Compute classic probabilities (e.g., select from only two colors of tokens,) and use probabilities to solve simply worded problems.

9. Identify and interpret positive and negative linear relationships when represented graphically.

**Algebra and Geometry**

10. Solve and/or model single variable, two-step linear equations with context and/or without context.

11. Use properties of operations to simplify and evaluate algebraic expressions.

12. Use defining attributes of two-dimensional shapes to solve problems.

# Academic Supports for Reading Skills Needed for Success in an EPP

At a high-level, the panel identified significant support as involving targeted and individualized reading-skill-specific support that is added to—or integrated into—the student’s coursework for approximately one term/one semester.

A note about duration of support: Panelists observed that the length of time a candidate will need support will vary. The choice to think in terms of one term/one semester was guided by (a) data from the survey, (b) the sense that shorter durations would not qualify as substantial support, even though some short-duration intense supports—e.g., Praxis boot camps—can be very useful, (c) the sense that longer periods of significant support do not fit well with a candidate’s overall program sequence, since preparation ramps up quickly in terms of coursework and field experience requirements.

In the discussion panelists identified support involving (1) Advising and Planning as well as (2) Interventions. Interventions were in the categories of (a) tutoring, (b) remediation courses, and (c) use of learning centers, but some interventions did not fit neatly into one of those categories. A third kind of support provided by programs/institutions was (3) Praxis Core test prep.

1. Advising and Planning

• Use of program-placement tests (and scores on admissions tests, e.g., ACT) to identify needs in program planning for a candidate, including  Identifying courses that reinforce the targeted skills

 Identifying interventions like those listed below

• In courses prior to the prof. program, provide guidance on what’s needed to test

• Supporting self-reflection by candidates

(2) Interventions • Remediation courses to build academic skills, including faculty-led “back-to-basics” sessions. (Often designed as multi-skill courses, not focused only on reading.)

• Skill-building instruction embedded in/integrated with introductory courses, such as Introduction to Teaching. (Candidates identified as needing support receive it in conjunction with a required course.)

• Khan academy self-paced instruction with faculty support (regular group and one-on-one coaching and faculty-led seminars focused on particular topics/skills)

• Use of shared online resources—through the program of institutional learning centers—such as Learning Express, use of Facebook groups, Khan academy.

• Lining up candidates with *partial* audit opportunities within existing courses for reading-specific activities or sections within that course. (For example, lectures/seminars specific to critical reading skills in an existing course are recommended as targeted audit opportunities for a candidate looking to build those skills.)

• just-in-time remediation involving the literacy center—one-on-one work focused on improving reading/literacy skills integrated with the candidate’s course assignments (work on literacy skills while focusing on the candidate’s near-term deliverables.

• 1-on-1 tutoring on reading skills (provided by practicing K-12 teachers)

• Monthly tutoring from faculty volunteers

• Self-paced online tools for Reading skill building--Tutoring 240

(3) Boot camps—for test prep • Workshops focused on preparing for the test itself, including  reading skill development focused on what’s tested on the Core Reading test including use of Khan Academy

 other testing-specific content, such as working with students on available testing accommodations

# Academic Supports for Writing Skills Needed for Success in an EPP

The panel created descriptions of specific academic supports for writing skills necessary for success in an EPP, listed within seven categories (in bold below). The discussion about the amount of time needed for the supports to be beneficial were at the category level. The amount of time a candidate needs these supports is listed, by the range of the panel’s responses and the response by the majority of the panel.

**Collaborations among learning assistance professionals and faculty**

Time needed ranged from 3 weeks to 4 or more quarters. Most panelists stated 3-15 weeks.

• Collaborations with EPP faculty can exist in tutoring programs, LACs, remediation courses, Kahn academy courses, etc.

**A center focused on academic assistance (such as a Learning Assistance Center)**

Time needed ranged from a day or less to 4 or more quarters. Most panelists stated 3-15 weeks.

• Writing and Literacy Centers

• Specific assignment support in a writing center

• Writing Center students conducting a lesson/ presentation in the class

**Peer support programs**

Time needed ranged from 3-15 weeks to 10-5 weeks. Most panelists stated 10-15 weeks.

• Peer mentors in the education department (other ed majors) - provided tutoring, could do class presentations, collaborated with faculty to provide support as well.

• Community college partnership with 4-yr university (academic support)

• Student organizations that provide programs or specific experts that come in and provide students with academic support for Praxis

• Pairing with students based on their ACT/SAT scores for academic support

**Praxis Core Preparation**

Time needed ranged from 3 weeks or 4 or more quarters. Most panelists stated 3-4 weeks.

• Praxis Core Boot Camp (3-hr sessions focused on the test led by instructors with content-specific expertise; could also include pieces that create empowerment -- such as how to create a study plan and how to read the score report)

• Praxis preparation courses (full semester course that includes writing centers, tutoring, and textbooks; could also include Kahn Academy as part of the coursework as well as test simulations)

• Praxis preparation courses (one on one tutoring with teachers in the field - institution based partnership with state-org of NEA)

• Weekend courses provided by the intuitions (no additional cost to student)

**Remediation Courses**

Panelists stated that the time needed was 10-15 weeks.

• English structure class (that include diagramming sentences, for example)

• Summer Development program

• Khan Academy for writing - a guided course (diagnostic session, feedback, videos, individualization of skills)

**Tutoring (not from peers)**

Time needed ranged from 3 weeks to 4 or more quarters. Most panelists stated 10-15 weeks.

• Free Tutoring Classes

• Specific assignment support in the form of tutoring (e.g., feedback on a writing prompt)

• Individualized faculty support

• Tutoring 240 (self-paced for a month, writing prompts added that are close to what will be tested)

• WCOnline Tutoring

• Khan Academy for writing - as an individual support (diagnostic session, feedback, videos, individualization of skills [e.g., self-scoring with a rubric])

• Pairing with faculty based on their ACT/SAT scores for academic support

• online studying resources module (learning management system that provides students with resources & materials for further study) - can exist in a variety of ways in different institutions

**Institution-Based & Individualized Support**

Time needed ranged from 3 weeks to 4 or more quarters.

• Continuous assessment of students followed by customized supports (including specific class assignments)

• SAT, ACT scores that provide feedback on students' writing needs

# Academic Supports for Mathematics Skills Needed for Success in an EPP

The discussed academic supports for mathematics skills necessary for success in an EPP. In general, the panel believed that candidates would need about one year of supports in order for them to be beneficial.

• Collaborations among learning assistance professionals and faculty

• Learning Center

• Peer Support Programs

• Praxis Core Preparation, e.g., Praxis Core Boot Camp; readiness courses.

• Tutoring (not from peers).

• Remediation Courses, e.g., remediation in math and reading; summer development program; support in basic skills

• **Required courses in Concepts of Mathematics and support for change**. Embedded in the courses should be mathematical reasoning, and support for change such as Growth Mindset, to help where there are confidence issues and/or poor prior math experiences. o Note: Adding support to the current EPP curriculum load is not sufficient. This additional substantial academic support must come with a commitment from the institution. The standard setting panelists’ experience is that some types of support are in place, but more is needed.