

OFFICE OF QUALITY PROFESSIONALS AND SPECIAL SCHOOLS

Summary of State Board of Education Items

October 21-22, 2010

EDUCATOR LICENSURE

31. Approval of a New Praxis Test for Braille Competency and Passing Score as Recommended by the Commission on Teacher and Administrator Education, Certification and Licensure

(Has cleared the Administrative Procedures Act process with public comment)

Background Information:

On July 9, 2010, the Certification Commission voted to approve a new Praxis test in Braille Competency developed by Educational Testing Service for Mississippi.

In 2008, the Mississippi Legislature approved House Bill 638. This bill addressed the rights of visually impaired students. The bill specified that by July 1, 2010, during the certification process, teachers of visually impaired students must show proficiency in Braille in the form of a test. The following has taken place by both ETS and the Mississippi Department of Education:

1. MDE contacted ETS with the request to develop a test for Braille competency
2. ETS had developed a test specifically for the state of Texas but Texas had the usage rights on that test
3. MDE requested and received permission from the Texas Department of Education for ETS to use the test developed for Texas as a Praxis test
4. In collaboration with ETS and MDE, the date of March 23, 2010, was

set for a standard setting study for the Braille competency Praxis test. A standard setting study is the first step in any state's approval of a Praxis test for licensure

5. Dr. Rosie Pridgen, Superintendent of the School for the Blind and the Task Force began the process of finding qualified candidates to serve as panelists on the standard setting. Panelists need to be teachers of visually impaired students. Once these panel candidates register with ETS to serve, ETS selects qualified candidates for a standard setting based on years of experience in the field with a cross section of race and gender.
6. ETS selected 22 panelists for the standard setting. Four of these panelists are visually impaired themselves and require reader/scribes to assist. ETS is printing Braille materials for these four panelists.
7. ETS delivered the report from the standard setting to MDE. The report offered a recommended passing score on this test.
8. The Certification Commission heard a proposal to approve the Braille Competency Praxis exam on July 9, 2010, and to approve the recommended cut score. The proposal will request approval to add this

test to the list of approved Praxis tests for licensure in the state of

Mississippi.

9. The proposal for implementation of the test was two-fold based on the

following two different recommendations:

- MDE Office of Educator Licensure, Office of Special Education and the MS School for the Blind recommend that this test will be required, along with the Praxis II test for Visually Impaired for the VI endorsement to be added to a standard 5-year license as a supplemental endorsement. This means that a teacher must first meet requirements to be certified in a specific subject area, and then if that teacher chooses to teach Blind students, they must take both the Braille competency exam as well as the Visually Impaired exam to be certified in VI. Those teachers that already hold a license in VI will be grandfathered and will not be required to also have the Braille test - only new applicants for VI after July 1, 2010.
- The Braille Bill Task Force recommends that all teachers of Visually Impaired students be required to take the test. They recommend that teachers already certified in Visually Impaired cannot renew their licenses until they have passed the Braille test.

The Commission heard both recommendations for implementation of the new test. They voted that all teachers that apply for a Visual Impaired license after July 1, 2010 must also pass the Braille test. Teachers already licensed in VI are not affected.

The first administration of the Braille Competency exam by ETS will be in September of 2010 if approved by the State Board.

Back-up material attached (*ETS Standard Setting Report for Braille Competency*)

Recommendation: Approval



Listening. Learning. Leading.

Standard Setting Report

Praxis Braille Proficiency (0631)

Prepared for the Mississippi Department of Education

April 2010

Conducted by
Educational Testing Service
Princeton, New Jersey

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Executive Summary

To support the decision-making process for the Mississippi Department of Education (MDOE) with regards to establishing a passing score, or cut score, for the Praxis Braille Proficiency assessment, research staff from Educational Testing Service (ETS) designed and conducted a standard setting study on March 23, 2010. The study also collected content-related validity evidence to confirm the importance of the content specifications for entry-level teachers of students with visual impairments.

Recommended Cut Score

The standard setting study involved an expert panel, comprised of teachers and college faculty. The recommended cut score is provided to help the MDOE determine an appropriate cut (or passing) score.

- For the Praxis Braille Proficiency assessment, the recommended cut score is 22 (on the raw score metric), which represents 61% of total available 36 raw score points. The scaled score associated with a raw score of 22 on the Praxis Braille Proficiency assessment is 158.

Summary of Content Specification Judgments

Panelists judged the extent to which the knowledge and/or skills reflected by the Praxis Braille Proficiency assessment content specifications were important for entry-level teachers of students with visual impairments. All the knowledge/skills statements comprising the content specifications were judged to be *Very Important* or *Important* by a majority of the panelists, providing evidence that the content of the Praxis Braille Proficiency assessment is important for beginning practice.

Introduction

To support the decision-making process for the Mississippi Department of Education (MDOE) with regards to establishing a passing score, or cut score, for the Praxis Braille Proficiency assessment, research staff from Educational Testing Service (ETS) designed and conducted a standard setting study on March 23, 2010, in Jackson, Mississippi. The study also collected content-related validity evidence to confirm the importance of the content specifications for entry-level teachers of students with visual impairments. The standard setting study involved an expert panel comprised of teachers and college faculty. Panelists were recommended by the MDOE based on criteria designed to help ensure that panelists (a) were familiar with the knowledge and skills required of a beginning teacher who teaches students with visual impairments, (b) were representative of Mississippi 's public school educators, and (c) consisted primarily of certified teachers with 3 to 10 years of experience.

The following technical report contains the passing score recommendation for the Praxis Braille Proficiency assessment. A standard-setting study provides only one kind of information that is relevant to the selection of a passing score on the assessment. It provides a recommended passing score, which represents the combined judgments of one group of experienced educators regarding the level of knowledge and/or skill believed to be just sufficient for an entry-level teacher to demonstrate in order to be considered ready to engage in professional practice. However, this is not the only information that decision-makers should consider in selecting a passing score. Other kinds of information may provide reasons for choosing a higher or a lower passing score than the passing score recommended by the panel.

The MDOE may choose to adopt a higher or lower passing score than the recommended score to reduce one of two types of classification errors — (a) passing a candidate who should fail (false positive) or (b) failing a candidate who should pass (false negative). The probability of making these classification errors is related to the standard error of measurement (SEM) of the assessment; the smaller the standard error, the lower the likelihood of making classification errors. Note that the likelihood of a classification error is never zero. It is possible to reduce one or the other type of classification error, but, unavoidably, as the likelihood of one type decreases, the likelihood of the other increases. Lowering the passing score reduces the likelihood of making false negative decisions, and raising the passing score reduces the likelihood of making false positive decisions.

Praxis Braille Proficiency Assessment

The Praxis Braille Proficiency *Test at a Glance* document (ETS, in press) describes the purpose and structure of the assessment. In brief, the assessment measures whether entry-level teachers of students with visual impairments have the level of braille proficiency believed necessary for competent professional practice.

The four hour assessment contains 25 multiple-choice questions¹ and four constructed-response questions and covers reading and producing contracted and uncontracted literary braille and Nemeth Code. The maximum total number of raw-score points that may be earned is 36. The reporting scale for the Praxis Braille Proficiency assessment ranges from 100 to 200 scaled-score points.

Expert Panels

The standard setting study for the Praxis Braille Proficiency assessment included an expert panel recruited by the MDOE. The MDOE recruited panelists to represent a range of professional perspectives. A description of the panel is presented below. (See the Appendix for a listing of panelists.)

The panel included 18 teachers and college faculty who prepare teachers of students with visual impairments². In brief, 12 panelists were teachers, two were administrators, one was college faculty, and three served other education roles. Thirteen panelists were White and five were African American. Fourteen panelists were female. Sixteen panelists reported being certified teachers of students with visual impairments in Mississippi. Half of the panelists had 11 or less years of experience teaching Braille and a third had 16 or more years of experience.

A fuller demographic description for the members of the panel is presented in Table 1.

¹ Five multiple-choice questions are pretest questions and do not contribute to a candidate's score.

² The panel initial consisted on 19 panelists. One panelist was not able to complete the study due to a medical situation; therefore, all results are based on the 18 panelists who completed the process.

TABLE 1
Committee Member Demographics

	N	Percent
Group you are representing		
Teachers	12	67%
Administrators	2	11%
College Faculty	1	6%
Other	3	17%
Race		
White	13	72%
Black or African American	5	28%
Gender		
Female	14	78%
Male	4	22%
Do you currently have a “Visually Impaired” teaching endorsement in Mississippi?		
No	2	11%
Yes	16	89%
Are you currently teaching braille in Mississippi?		
No	6	33%
Yes	12	67%
Are you currently supervising or mentoring another teacher in Mississippi?		
No	9	50%
Yes	9	50%
Including this year, how many years of experience do you have teaching braille?		
3 years or less	2	11%
4 – 7 years	5	28%
8 – 11 years	2	11%
12 – 15 years	3	17%
16 years or more	6	33%
At what K-12 grade level are you currently teaching?		
Elementary (K-5 or K-6)	4	22%
Middle School (6-8 or 7-9)	1	6%
Elementary and Middle School	2	11%
High School (9-12 or 10-12)	2	11%
Middle and High School	2	11%
All Grades	1	6%
I am not currently teaching at the K-12 level	6	33%
School Setting		
Urban	9	50%
Suburban	3	17%
Rural	3	17%
Statewide	3	17%

Process and Method

The design of the Praxis Braille Proficiency assessment standard setting study for the MDOE included an expert panel. The panelists were sent an e-mail explaining the purpose of the standard-setting study and requesting that they review the content specifications for the Praxis Braille Proficiency assessment (included in the Praxis Braille Proficiency *Test at a Glance*, which was attached to the e-mail). The purpose of the review was to familiarize the panelists with the general structure and content of the assessment.

The standard-setting study began with a welcome and introduction. Cindy Coon, Bureau Director for the Office of Educator Licensure, welcomed the panelists and provided an overview of the certification process in Mississippi. Clyde Reese, the ETS facilitator, then explained how the Praxis Braille Proficiency assessment was developed, provided an overview of standard setting, and presented the agenda for the study. (The agenda for the meeting is in the Appendix.)

Reviewing the Praxis Braille Proficiency Assessment

The first activity was for the panelists to “take the test.” (Each panelist had signed a nondisclosure form.) The panelists were given approximately an hour and a half to respond to the multiple-choice questions and to take notes on the constructed-response (transcription) questions. The purpose of “taking the test” was for the panelists to become familiar with the test format, content, and difficulty. After “taking the test,” the panelists were given the answer key (correct answers for the multiple-choice questions) to self-score and the rubrics for the constructed-response questions; how well a panelist did on the test was not shared.

The panelists then engaged in a discussion of the major content areas being addressed by the assessment; they were also asked to remark on any content areas that they thought would be particularly challenging for entering teachers of students with visual impairments, and areas that addressed content that would be particularly important for entering teachers.

Defining the Just Qualified Candidate

Following the review of the assessment, panelists defined the Just Qualified Candidate (JQC). The JQC is the test taker who has the minimum level of knowledge and/or skills believed necessary to be a qualified teacher of students with visual impairments. The JQC definition is the operational definition of the cut score. The goal of the standard-setting process is to identify the test score that aligns with this definition of the JQC.

For each of the competency areas measured by the Praxis Braille Proficiency assessment, the panel was asked to develop performance indicators, or “Can Do” statements that answered the following two questions:

- What can our Just Qualified Candidate do to demonstrate the necessary level of competency that a not-quite qualified candidate could not?
- What would be something that might represent a slightly higher level of competency than we would expect from our JQC?

The six competency areas are listed in the Appendix.

Panelists’ Judgments

The standard-setting process for the Praxis Braille Proficiency assessment is described next, followed by the results from the standard-setting study. The recommended cut score for the panel is provided to help the MDOE determine an appropriate cut (or passing) score.

Standard Setting for Multiple-Choice Questions. For the multiple-choice questions included on the Praxis Braille Proficiency assessment, a probability-based Angoff method (Brandon, 2004; Hambleton & Pitoniak, 2006) was used. In this approach, for each multiple-choice question, a panelist decides on the likelihood (probability or chance) that a JQC would answer it correctly. Panelists made their judgments using the following rating scale: 0, .05, .10, .20, .30, .40, .50, .60, .70, .80, .90, .95, 1. The lower the value, the less likely it is that a JQC would answer the question correctly, because the question is difficult for the JQC. The higher the value, the more likely it is that a JQC would answer the question correctly.

The panelists were asked to approach the judgment process in two stages. First, they reviewed the definition of the JQC and the question and decided if, overall, the question was difficult for the JQC, easy for the JQC, or moderately difficult/easy. The facilitator encouraged the panelists to consider the following rule of thumb to guide their decision:

- difficult questions for a JQC were in the 0 to .30 range;
- easy questions for a JQC were in the .70 to 1 range; and
- moderately difficult/easy questions for a JQC were in the .40 to .60 range.

The second decision was for panelists to decide how they wanted to refine their judgment within the range. For example, if a panelist thought that a question was easy for a JQC, the initial decision located the question in the .70 to 1 range. The second decision was for the panelist to decide if the likelihood of answering it correctly

was .70, .80, .90, .95, or 1. The two-stage decision-process was implemented to reduce the cognitive load placed on the panelists. The panelists practiced making their standard-setting judgments for multiple-choice questions.

Standard Setting for Constructed-Response Questions. For the constructed-response questions included on the Praxis Braille Proficiency assessment, an Extended Angoff method (Cizek & Bunch, 2007; Hambleton & Plake, 1995) was used. In this approach, for each question, a panelist decides on the assigned score value that would most likely be earned by a JQC. The basic process that each panelist followed was to consider the expected proficiency level of the JQC and then to review the question and the rubric for that question. The rubric for a question is based on the number of transcription errors in a candidate's response; the possible scores for each question are 1, 2, 3 and 4. A test taker's response to a constructed-response question is scored by a trained scorer and verified by the chief reader. Each panelist decided on the score most likely to be earned by a JQC. For each of the four constructed-response questions, panelists recorded the score (0 through 4) that a JQC would most likely earn. The panelists practiced making their standard-setting judgments for constructed-response questions.

Judgment of Praxis Braille Proficiency Content Specifications

In addition to the standard setting process, the panel judged the importance of the knowledge and/or skills stated or implied in the assessment content specifications for the job of an entry-level teacher of students with visual impairments. These judgments addressed the perceived content-based validity of the assessment. Judgments were made using a four-point Likert scale — *Very Important*, *Important*, *Slightly Important*, and *Not Important*. Each panelist independently judged the six competency areas.

Results

Initial Evaluation Forms

The panelists completed initial evaluations following training for multiple-choice questions and again following training for constructed-response questions. The primary information collected from these forms was the panelists indicating if they had received adequate training to make their standard-setting judgments and were ready to proceed. All panelists indicated that they were prepared to make their judgments.

Summary of Standard Setting Judgments

A summary of the standard-setting judgments is presented in Table 2. The numbers in the table reflect the recommended cut scores — the number of raw-score points needed to “pass” the assessment — of each panelist. For the Praxis Braille Proficiency assessment, results for the multiple-choice questions, constructed-response questions and the overall assessment are presented. Note that the Praxis Braille Proficiency assessment reports a single overall score and that the panel is recommending a single cut score for the combination of the multiple-choice and constructed response questions. The separate “cut scores” for the two parts are intermediate steps in calculating the overall cut score.

The panel’s average recommended cut score and highest and lowest cut scores are reported, as are the standard deviation (SD) of panelists’ cut scores and the standard error of judgment (SEJ). The SEJ is one way of estimating the reliability of the judgments. It indicates how likely it would be for other panels of educators similar in make-up, experience, and standard-setting training to the current panel to recommend the same cut score on the same form of the assessment. A comparable panel’s cut score would be within 1 SEJ of the current average cut score 68 percent of the time and within 2 SEJs 95 percent of the time.

- For the Praxis Braille Proficiency assessment, the panel’s cut score recommendation is 21.13. The value was rounded to the next highest whole number to determine the functional recommended cut score, 22. The value of 22 represents approximately 61% of the total available 36 raw-score points that could be earned on the assessment. The scaled score associated with 22 raw points is 158.

TABLE 2
Summary of Standard Setting Judgments
Praxis Braille Proficiency (0631) Assessment

Panelist	Multiple-Choice Judgments	Constructed-Response Judgments	Overall Cutscore
1	10.55	9.00	19.55
2	16.75	12.00	28.75
3	12.20	10.00	22.20
4	13.10	9.00	22.10
5	8.65	10.00	18.65
6	9.80	10.00	19.80
7	11.10	9.00	20.10
8	12.40	9.00	21.40
9	12.60	12.00	24.60
10	9.70	6.00	15.70
11	12.60	8.00	20.60
12	13.00	8.00	21.00
13	8.60	8.00	16.60
14	12.00	8.00	20.00
15	10.10	6.00	16.10
16	13.30	11.00	24.30
17	14.20	13.00	27.20
18	12.70	9.00	21.70
Average	11.85	9.28	21.13
Highest	16.75	13.00	28.75
Lowest	8.60	6.00	15.70
SD	2.05	1.90	3.50
SEJ	0.48	0.45	0.82

Table 3 presents the estimated standard errors of measurement (SEM) around the recommended cut score. A standard error represents the uncertainty associated with a test score. The scaled scores associated with 1 and 2 SEMs above and below the recommended cut score are provided³.

Recommended Cut Score (SEM)	Scaled Score Equivalent
22 (2.25)	158
- 2 SEMs	145
-1 SEM	151
+1 SEM	168
+ 2 SEMs	175

Note: Consistent with the recommended cut score, the cut scores at the different SEMs have been rounded to the next highest whole number.

Summary of Content Specification Judgments

Panelists judged the extent to which the knowledge and/or skills reflected by the Praxis Braille Proficiency assessment content specifications were important for entry-level teachers of students with visual impairments. Panelists rated the six competency areas on a four-point scale ranging from *Very Important* to *Not Important*. The panelists' ratings are summarized in Table 4.

Reading Contracted and Uncontracted Literary Braille and Nemeth Code was judge *Very Important* by 56% of the panelists with only one panelist indicating that it would be *Slightly Important*. *Producing Braille Using a Manual Braillewriter and a Traditional Slate and Stylus* was judge *Very Important* by half of the panelists with three panelists indicating that it would be *Slightly Important*. All six competency areas were judged to be *Very Important* or *Important* by more than 80% of the panelists. Reading contracted/uncontracted braille was judged to be most important for entry-level teacher of students with visual impairments (72% indicated it would *Very Important*) and producing basic Nemeth Code was judged to be least important (28% indicated it would *Very Important*).

³ The *raw* score SEM values included in this report are updated throughout the year as data become available. The SEM values listed in each edition of *Understanding Your Praxis Scores* (http://www.ets.org/Media/Tests/PRAXIS/pdf/uyps_web.pdf) are *scaled* score SEM values based on candidate scores on one or more test forms.

TABLE 4
Specification Rating

	Very Important		Important		Slightly Important		Not Important	
	N	%	N	%	N	%	N	%
	I. Reading Contracted and Uncontracted Literary Braille and Nemeth Code	10	56%	7	39%	1	6%	0
• Reading contracted and uncontracted literary braille.	13	72%	4	22%	1	6%	0	0%
• Reading basic Nemeth Code (e.g., +, -, x, ÷, =, <, >, %, \$, decimals, punctuation indicators, horizontal and vertical formats of presentation).	8	44%	7	39%	3	17%	0	0%
• Using resources for reading advanced Nemeth Code.	11	61%	6	33%	0	0%	1	6%
II. Producing Braille Using a Manual Braillewriter and a Traditional (non-direct) Slate and Stylus	9	50%	6	33%	3	17%	0	0%
• Producing contracted and uncontracted literary braille.	11	61%	5	28%	2	11%	0	0%
• Producing basic Nemeth Code (e.g., +, -, x, ÷, =, <, >, %, \$, decimals, punctuation indicators, horizontal and vertical formats of presentation)..	5	28%	9	50%	3	17%	1	6%
• Referring to Nemeth Code rules to produce advanced Nemeth Code.	10	56%	6	33%	1	6%	1	6%

Summary of Final Evaluations

The panelists completed an evaluation form at the conclusion of their standard setting study. The evaluation form asked the panelists to provide feedback about the quality of the standard-setting implementation. Table 5 present the results of the final evaluation.

All panelists *Agreed* or *Strongly Agreed* that they understood the purpose of the study and that the facilitator’s instructions and explanations were clear. All of the panelists *Agreed* or *Strongly Agreed* that they were prepared to make their standard setting judgments and that the standard-setting process was easy to follow.

TABLE 5
Final Evaluations

	Strongly Agree		Agree		Disagree		Strongly Disagree	
	N	%	N	%	N	%	N	%
A. I understood the purpose of the study	17	94%	1	6%	0	0%	0	0%
B. The instructions and explanations provided by the facilitator were clear	15	83%	3	17%	0	0%	0	0%
C. The opportunity to “take the test” and to discuss the test content was useful	16	89%	2	11%	0	0%	0	0%
D. The opportunity to practice making standard setting judgments was useful	14	78%	4	22%	0	0%	0	0%
E. The training for the standard setting judgments was adequate to give me the information I needed to complete my assignment	17	94%	1	6%	0	0%	0	0%
F. The process of making the standard setting judgments was easy to follow	14	78%	4	22%	0	0%	0	0%

Summary

To support the decision-making process for the Mississippi Department of Education (MDOE) with regards to establishing a passing score, or cut score, for the Praxis Braille Proficiency assessment, research staff from Educational Testing Service (ETS) designed and conducted a standard setting study on March 23, 2010, in Jackson, Mississippi. The study also collected content-related validity evidence to confirm the importance of the content specifications for entry-level teachers of students with visual impairments. The standard setting study involved an expert panel, comprised of teachers and college faculty.

Standard setting was conducted using a probability-based Angoff approach for the multiple-choice questions and an Extended Angoff method for the constructed-response questions. For the Praxis Braille Proficiency assessment, the recommended cut score is 22 (on the raw score metric), which represents 61% of total available 36 raw score points. The scaled score associated with a raw score of 22 on the Praxis Braille Proficiency assessment is 158.

The panel confirmed that the knowledge and/or skills stated or implied in the Praxis Elementary Braille Proficiency assessment content specifications were important for entry-level teachers. The results of the evaluation surveys (initial and final) support the quality of the standard-setting implementation.

References

- Brandon, P.R. (2004). Conclusions about frequently studied modified Angoff standard-setting topics. *Applied Measurement in Education, 17*, 59-88.
- Cizek, G. J., & Bunch, M.B. (2007). *Standard setting: A guide to establishing and evaluating performance standards on tests*. Thousand Oaks, CA: Sage.
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- Hambleton, R. K., & Pitoniak, M.J. (2006). Setting performance standards. In R. L. Brennan (Ed.), *Educational Measurement* (4 ed., pp. 433-470). Westport, CT: American Council on Education/Praeger.
- Hambleton, R. K., & Plake, B.S. (1995). Using an extended Angoff procedure to set standards on complex performance assessments. *Applied Measurement in Education, 8*, 41-55.

APPENDIX

**Praxis Braille Proficiency
Standard Setting Panel for the Mississippi DOE
March 23, 2010**

Panelist

Gean Claire Belknap
Ronald J. Byrd
Octavia D. Carson
Theodore Dear, Jr.
Sheila Dillon
Shelley Franklin
Bryan G. Gueltig
Walter Harper, Jr.
Jan Hawthorne
Rebecca Holbrook
Claudia D. Hollingsworth
Earnestine R. Hubbard
Nancy Lobb
Jo Ann Malone
Anita Medley
Marla R. Peters
Casey L. Robertson
Glenda Windfield

Cindy Coon, Bureau Director
Rosie Pridgen, Superintendent
Clyde Reese, Facilitator
Cory Murphy, Client Relations Director

Affiliation

Northwest Rankin Middle School
Addie McBryde Rehabilitation Center For The Blind
Mississippi School for the Blind
Mississippi School for the Blind
Franklin Upper Elm Schools
Mississippi School for the Blind
Rankin County School District
Mississippi School for the Blind
Mississippi School for the Blind
Mississippi School for the Blind
Mississippi Department of Education
DeSoto County School District
Mississippi School for the Blind
Smith County School District
Jackson State University

Mississippi Department of Education
Mississippi School for the Blind
Educational Testing Service
Educational Testing Service

AGENDA
Praxis Braille Proficiency Assessment

Standard Setting Study

March 23, 2010

7:30 – 8:30	Continental Breakfast & Registration
8:30 – 8:45	Welcome and Introduction
8:45 – 9:00	Overview of the Licensure Process in Mississippi
9:00 – 9:15	Overview of Standard Setting & Workshop Events
9:15 – 9:30	Overview of the Praxis Braille Proficiency Assessment
9:30 – 11:00	“Take” the Praxis Braille Proficiency Assessment
11:00 – 11:30	Discuss the Praxis Braille Proficiency Assessment
11:30 – 12:00	Define the Knowledge/Skills of a JQC
12:00 – 12:45	Lunch
12:45 – 1:30	Define the Knowledge/Skills of a JQC (continued)
1:30 – 2:00	Standard Setting Training for M-C Items
2:00 – 2:45	Standard Setting Judgments for Multiple-Choice
2:45 – 3:00	Break
3:00 – 3:30	Standard Setting Training for CR Items
3:30 – 4:00	Standard Setting Judgments for Constructed-Response
4:00 – 4:30	Specification Judgments
4:30 – 5:00	Complete Final Evaluation, Collect Materials & Adjourn

Knowledge and Competencies Braille and Nemeth Code

I. Reading Contracted and Uncontracted Literary Braille and Nemeth Code

- Reading contracted and uncontracted literary braille.
- Reading basic Nemeth Code (e.g., +, -, ×, ÷, =, <, >, %, \$, decimals, punctuation indicators, horizontal and vertical formats of presentation).
- Using resources for reading advanced Nemeth Code.

II. Producing Braille using a manual braillewriter and a traditional (non-direct) slate and stylus

- Producing contracted and uncontracted literary braille.
- Producing basic Nemeth Code (e.g., +, -, ×, ÷, =, <, >, %, \$, decimals, punctuation indicators, horizontal and vertical formats of presentation).
- Referring to Nemeth Code rules to produce advanced Nemeth Code.