Department of Education
College of Education and Social Services

March 31, 2017

To The Vermont Standards Board For Professional Educators,

We are writing to request your consideration of an amendment to the revised teacher endorsement requirements made in the Summer of 2016 regarding eligibility for the birth-grade 3 Early Childhood Education endorsement. At this point, our understanding is that the Vermont Standards Board for Professional Educators had voted to require the Praxis 2 exam *#5001: Elementary Education Multiple Subject Test*, for the Early Childhood Birth-Grade 3 endorsement. This exam covers content and methods relevant for teaching in the K-grade 6 context.

Whereas we agree that this *#5001: Elementary Education Multiple Subject Test* would suffice to demonstrate mastery of the content for teaching in the K-grade 3 context, we believe that there is an equally adequate, if not preferred, Praxis 2 exam (*#5021*) on the market through ETS for Early Childhood candidates. Early Childhood candidates are seeking endorsement only through grade 3, rather than the full span of the Elementary endorsement.

The Praxis 2 exam *#5021: Education of Young Children,* covers content and methods spanning birth-grade 3, specifically, which is more closely aligned with the endorsement being sought. According to ETS, "The Education of Young Children test is intended primarily for prospective teachers of young children (birth to age 8)…The test was designed to align with the National Association for the Education of Young Children's *NAEYC Standards for Early Childhood Professional Preparation* (2009)" (https://www.ets.org/s/praxis/pdf/5021.pdf). The NAEYC standards are the basis for our national accreditation in Early Childhood education (birth-grade 3).

We are asking that you consider amending the teacher endorsement requirements, such that either exam is accepted as evidence of achieving mastery of the content area to fulfill the requirement to be granted the Birth-Grade 3 endorsement. On behalf of the University of Vermont Early Childhood Program, we would prefer that our students take the Praxis 2 Exam *#5021: Education of Young Children*, since we believe it better reflects the span of their endorsement, as well as the preparation they have received throughout their teacher preparation program of study.

Thank you for your consideration of this matter. We look forward to the opportunity to further discuss this proposal at your May meeting. Please contact us in the meantime for any reason.

Sincerely,

The University of Vermont Early Childhood Program Faculty

Early Childhood Education Pre K-3
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Listening. Learning. Leading.

Multistate Standard-Setting Technical Report

# PRAXIS™ EDUCATION OF YOUNG CHILDREN (5024)

Licensure and Credentialing Research

ETS

Princeton, New Jersey

February 2014

# EXECUTIVE SUMMARY

To support the decision-making process of education agencies establishing a passing score (cut score) for the Praxis™ Education of Young Children (5024) test, research staff from Educational Testing Service (ETS) designed and conducted a multistate standard-setting study.

## PARTICIPATING STATES

Panelists from 16 states were recommended by their respective education agencies. The education agencies recommended panelists with (a) experience as either early childhood teachers or college faculty who prepare early childhood teachers and (b) familiarity with the knowledge and skills required of beginning early childhood teachers.

## RECOMMENDED PASSING SCORE

ETS provides a recommended passing score from the multistate standard-setting study to help education agencies determine an appropriate operational passing score. For the Praxis Education of Young Children test, the recommended passing score[1] is 81 out of a possible 125 raw-score points. The scaled score associated with a raw score of 81 is 160 on a 100–200 scale.

[1] Results from the two panels participating in the study were averaged to produce the recommended passing score.

To support the decision-making process for education agencies establishing a passing score (cut score) for the Praxis™ Education of Young Children (5024) test, research staff from ETS designed and conducted a multistate standard-setting study in February, 2014 in Princeton, New Jersey. Education agencies[2] recommended panelists with (a) experience as either early childhood teachers or college faculty who prepare early childhood teachers and (b) familiarity with the knowledge and skills required of beginning early childhood teachers. Sixteen states (Table 1) were represented by 28 panelists. (See Appendix A for the names and affiliations of the panelists.)

***Table 1***
***Participating States and Number of Panelists***

| | |
|---|---|
| Arkansas (2 panelists) | Nebraska (3 panelists) |
| Connecticut (1 panelist) | Nevada (1 panelist) |
| Delaware (1 panelist) | New Hampshire (2 panelists) |
| Hawaii (1 panelist) | Rhode Island (1 panelist) |
| Kansas (2 panelists) | South Carolina (3 panelists) |
| Louisiana (2 panelists) | Tennessee (1 panelist) |
| Maine (2 panelists) | West Virginia (2 panelists) |
| Mississippi (2 panelists) | Wyoming (2 panelists) |

The following technical report contains three sections. The first section describes the content and format of the test. The second section describes the standard-setting processes and methods. The third section presents the results of the standard-setting study.

ETS provides a recommended passing score from the multistate standard-setting study to education agencies. In each state, the department of education, the board of education, or a designated educator licensure board is responsible for establishing the operational passing score in accordance with applicable regulations. This study provides a recommended passing score,[3] which represents the combined judgments of two panels of experienced educators. Each state may want to consider the recommended passing score but also other sources of information when setting the final Praxis Education of Young Children passing score (see Geisinger & McCormick, 2010). A state may accept the

[2] States and jurisdictions that currently use Praxis were invited to participate in the multistate standard-setting study.
[3] In addition to the recommended passing score averaged across the two panels, the recommended passing scores for each panel are presented.

recommended passing score, adjust the score upward to reflect more stringent expectations, or adjust the score downward to reflect more lenient expectations. There is no *correct* decision; the appropriateness of any adjustment may only be evaluated in terms of its meeting the states' needs.

Two sources of information to consider when setting the passing score are the standard error of measurement (SEM) and the standard error of judgment (SEJ). The former addresses the reliability of the Praxis Education of Young Children test score and the latter, the reliability of panelists' passing-score recommendation. The SEM allows a state to recognize that any test score on any standardized test—including a Praxis Education of Young Children test score—is not perfectly reliable. A test score only *approximates* what a candidate truly knows or truly can do on the test. The SEM, therefore, addresses the question: How close of an approximation is the test score to the *true* score? The SEJ allows a state to gauge the likelihood that the recommended passing score from a particular panel would be similar to the passing scores recommended by other panels of experts similar in composition and experience. The smaller the SEJ, the more likely that another panel would recommend a passing score consistent with the recommended passing score. The larger the SEJ, the less likely the recommended passing score would be reproduced by another panel.

In addition to measurement error metrics (e.g., SEM, SEJ), each state should consider the likelihood of classification errors. That is, when adjusting a passing score, policymakers should consider whether it is more important to minimize a false-positive decision or to minimize a false-negative decision. A false-positive decision occurs when a candidate's test score suggests that he should receive a license/certificate, but his actual level of knowledge/skills indicates otherwise (i.e., the candidate does not possess the required knowledge/skills). A false-negative decision occurs when a candidate's test score suggests that she should not receive a license/certificate, but she actually does possess the required knowledge/skills. The state needs to consider which decision error is more important to minimize.

# Overview of the Praxis Education Of Young Children Test

The Praxis Education of Young Children *Test at a Glance* document (ETS, in press) describes the purpose and structure of the test. In brief, the test measures whether entry-level early childhood teachers have the knowledge/skills believed necessary for competent professional practice.

The two and a half hour test contains 120 selected-response items[4] and three constructed-response items covering six content areas: *Child Development and Learning* (approximately 25 selected-response items), *Observation, Documentation and Assessment* (approximately 19 selected-response items), *Developmentally Appropriate Practices* (approximately 19 selected-response items), *Professionalism, Family and Community* (approximately 19 selected-response items), *Content Pedagogy and Knowledge* (approximately 38 selected-response items), and *Knowledge of Teaching* (3 constructed-response items).[5] The reporting scale for the Praxis Education of Young Children test ranges from 100 to 200 scaled-score points.

# Processes and Methods

The design of the standard-setting study included two, independent expert panels. Before the study, panelists received an email explaining the purpose of the standard-setting study and requesting that they review the content specifications for the test. This review helped familiarize the panelists with the general structure and content of the test.

For each panel, the standard-setting study began with a welcome and introduction by the meeting facilitator. The facilitator described the test, provided an overview of standard setting, and presented the agenda for the study. Appendix B shows the agenda for the panel meeting.

[4] Twenty of the 120 selected-response items are pretest items and do not contribute to a candidate's score.
[5] The number of selected-response items for each content area may vary slightly from form to form of the test.

## Reviewing the Test

The standard-setting panelists first reviewed the test and then discussed it. This discussion helped bring the panelists to a shared understanding of what the test does and does not cover, which serves to reduce potential judgment errors later in the standard-setting process.

The test discussion covered the major content areas being addressed by the test. Panelists were asked to remark on any content areas that would be particularly challenging for entry-level teachers or areas that address content particularly important for entry-level teachers.

## Describing the Just Qualified Candidate

Following the review of the test, panelists described the just qualified candidate. The *just qualified candidate description* plays a central role in standard setting (Perie, 2008); the goal of the standard-setting process is to identify the test score that aligns with this description.

Panel 1 created a description of the just qualified candidate — the knowledge/skills that differentiate a *just* from a *not quite* qualified candidate. To create this description, the panel first split into smaller groups to consider the just qualified candidate. The full panel then reconvened and, through whole-group discussion, created the description of the just qualified candidate to use for the remainder of the study.

The written description of the just qualified candidate summarized the panel discussion in a bulleted format. The description was not intended to describe all the knowledge and skills of the just qualified candidate but only highlight those that differentiate a *just* qualified candidate from a *not quite* qualified candidate. The written description was distributed to panelists to use during later phases of the study (see Appendix C for the just qualified candidate description).

For Panel 2, the panelists began with the description of the just qualified candidate developed by Panel 1. Given that the multistate standard-setting study was designed to provide two recommendations for the same performance standard, it was important that panels use a consistent just qualified candidate description to frame their judgments. The panelists reviewed the just qualified candidate description, and any ambiguities were discussed and clarified.

## PANELISTS' JUDGMENTS

The Praxis Education of Young Children test includes both dichotomously scored selected-response and constructed-response items. Panelists received training in two distinct standard-setting approaches: one standard-setting approach for the dichotomously scored items and another approach for the constructed-response items.

A panel's passing score is the sum of the interim passing scores recommended by the panelists for (a) the dichotomously scored items and (b) the constructed-response items. As with scoring and reporting, the panelists' judgments for the constructed-response items were weighted such that they contributed 20% of the overall score.

**Dichotomously scored items.** The standard-setting process for the dichotomously scored items was a probability-based Modified Angoff method (Brandon, 2004; Hambleton & Pitoniak, 2006). In this study, each panelist judged each item on the likelihood (probability or chance) that the just qualified candidate would answer the item 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 the just qualified candidate would answer the item correctly because the item is difficult for the just qualified candidate. The higher the value, the more likely it is that the just qualified candidate would answer the item correctly.

Panelists were asked to approach the judgment process in two stages. First, they reviewed both the description of the just qualified candidate and the item and decided if, overall, the item would be difficult for the just qualified candidate, easy for the just qualified candidate or moderately difficult/easy. The facilitator encouraged the panelists to consider the following rules of thumb to guide their decision:

- Difficult items for the just qualified candidate are in the 0 to .30 range.
- Moderately difficult/easy items for the just qualified candidate are in the .40 to .60 range.
- Easy items for the just qualified candidate are in the .70 to 1 range.

Next, panelists decided how to refine their judgment within the range. For example, if a panelist thought that an item would be easy for the just qualified candidate, the initial decision located the item in the .70 to 1 range. The second decision for the panelist was to decide if the likelihood of answering it correctly is .70, .80, .90, .95 or 1.

After the training, panelists made practice judgments and discussed those judgments and their rationale. All panelists completed a post-training survey to confirm that they had received adequate training and felt prepared to continue; the standard-setting process continued only if all panelists confirmed their readiness.

**Constructed-response items.** An Extended Angoff method (Cizek & Bunch, 2007; Hambleton & Plake, 1995) was used for the constructed-response items. For this portion of the study, a panelist decided on the assigned score value that would most likely be earned by the just qualified candidate for each constructed-response item. Panelists were asked first to review the definition of the just qualified candidate and then to review the constructed-response item and its rubric. The rubric for a constructed-response item defines (holistically) the quality of the evidence that would merit a response earning a particular score. During this review, each panelist independently considered the level of knowledge/skill required to respond to the constructed-response item and the features of a response that would earn a particular score, as defined by the rubric. Each panelist decided on the score most likely to be earned by the just qualified candidate from the possible values a test taker can earn.

A test-taker's response to a constructed-response item is independently scored by two raters, and the sum of the raters' scores is the assigned score[6]; possible scores, therefore, range from zero (both raters assigned a score of zero) to six (both raters assigned a score of three). For their ratings, each panelist decided on the score most likely to be earned by a just qualified candidate from the following possible values: 0, 1, 2, 3, 4, 5, or 6. For each of the constructed-response item, panelists recorded the score (0 through 6) that a just qualified candidate would most likely earn.

After the training, panelists made practice judgments and discussed those judgments and their rationale. All panelists completed a post-training survey to confirm that they had received adequate training and felt prepared to continue; the standard-setting process continued only if all panelists confirmed their readiness.

**Multiple Rounds**. Following this first round of judgments (*Round 1*), item-level feedback was provided to the panel. The panelists' judgments were displayed for each item and summarized across panelists. For dichotomously scored items, items were highlighted to show when panelists converged in

[6] If the two raters' scores differ by more than one point (non-adjacent), the Chief Reader for that item assigns the score, which is then doubled.

their judgments (at least two-thirds of the panelists located an item in the same difficulty range) or diverged in their judgments.

The panelists discussed their item-level judgments. These discussions helped panelists maintain a shared understanding of the knowledge/skills of the just qualified candidate and helped to clarify aspects of items that might not have been clear to all panelists during the Round 1 judgments. The purpose of the discussion was not to encourage panelists to conform to another's judgment, but to understand the different relevant perspectives among the panelists.

In Round 2, panelists discussed their Round 1 judgments and were encouraged by the facilitator (a) to share the rationales for their judgments and (b) to consider their judgments in light of the rationales provided by the other panelists. Panelists recorded their Round 2 judgments only for items when they wished to change a Round 1 judgment. Panelists' final judgments for the study, therefore, consist of their Round 1 judgments and any adjusted judgments made during Round 2.

Other than the description of the just qualified candidate, results from Panel 1 were not shared with Panel 2. The item-level judgments and resulting discussions for Panel 2 were independent of judgments and discussions that occurred with Panel 1.

# RESULTS

## EXPERT PANELS

Table 2 presents a summary of the panelists' demographic information. The panel included 28 educators representing 16 states. (See Appendix A for a listing of panelists.) Nine panelists were teachers, 14 were college faculty, and five were administrators or department heads. All fourteen faculty members' job responsibilities included the training of early childhood teachers.

The number of experts by panel and their demographic information are presented in Appendix D (Table D1).

**Table 2**

***Panel Member Demographics (Across Panels)***

| | *N* | % |
|---|---|---|
| **Current position** | | |
| Teacher | 9 | 32% |
| Administrator/Department head | 5 | 18% |
| College faculty | 14 | 50% |
| **Race** | | |
| White | 23 | 82% |
| Black or African American | 2 | 7% |
| Hispanic or Latino | 1 | 4% |
| Asian or Asian American | 2 | 7% |
| **Gender** | | |
| Female | 27 | 96% |
| Male | 1 | 4% |
| **Are you currently certified to teach this subject in your state?** | | |
| Yes | 15 | 54% |
| No | 13 | 46% |
| **Are you currently teaching this subject in your state?** | | |
| Yes | 23 | 82% |
| No | 5 | 18% |
| **Are you currently supervising or mentoring other teachers of this subject?** | | |
| Yes | 23 | 82% |
| No | 5 | 18% |
| **Including this year, how many years of experience do you have teaching this subject?** | | |
| 3 years or less | 2 | 7% |
| 4–7 years | 5 | 18% |
| 8–11 years | 3 | 11% |
| 12–15 years | 4 | 14% |
| 16 years or more | 14 | 50% |
| **If you are college faculty, are you currently involved in the training/preparation of teacher candidates in this subject?** | | |
| Yes | 14 | 50% |
| No | 0 | 0% |
| Not college faculty | 14 | 50% |

## STANDARD-SETTING JUDGMENTS

Table 3 summarizes the standard-setting judgments (Round 2) of panelists. The table also includes estimates of the measurement error associated with the judgments: the standard deviation of the mean and the standard error of judgment (SEJ). The SEJ is one way of estimating the reliability or consistency of a panel's standard-setting judgments.[7] It indicates how likely it would be for several other panels of educators similar in makeup, experience, and standard-setting training to the current panel to recommend the same passing score on the same form of the test. The confidence intervals created by adding/subtracting two SEJs to each panel's recommended passing score overlap, indicating that they may be comparable.

Panelist-level results, for Rounds 1 and 2, are presented in Appendix D (Table D2).

**Table 3**
***Summary of Round 2 Standard-setting Judgments***

| | **Panel 1** | **Panel 2** |
|---|---|---|
| Average | 83.00 | 78.60 |
| Lowest | 75.59 | 60.36 |
| Highest | 93.56 | 91.24 |
| SD | 6.08 | 6.83 |
| SEJ | 1.75 | 1.71 |

Round 1 judgments are made without discussion among the panelists. The most variability in judgments, therefore, is typically present in the first round. Round 2 judgments, however, are informed by panel discussion; thus, it is common to see a decrease in both the standard deviation and SEJ. This decrease — indicating convergence among the panelists' judgments — was observed for each panel (see Table D2 in Appendix D). The Round 2 average score is the panel's recommended passing score.

[7] An SEJ assumes that panelists are randomly selected and that standard-setting judgments are independent. It is seldom the case that panelists are randomly sampled, and only the first round of judgments may be considered independent. The SEJ, therefore, likely underestimates the uncertainty of passing scores (Tannenbaum & Katz, 2013).

The panels' passing score recommendations for the Praxis Education of Young Children test are 83.00 for Panel 1 and 78.60 for Panel 2 (out of a possible 125 raw-score points). The values were rounded to the next highest whole number, to determine the functional recommended passing score — 83 for Panel 1 and 79 for Panel 2. The scaled scores associated with 83 and 79 raw points are 162 and 158, respectively.

In addition to the recommended passing score for each panel, the average passing score across the two panels is provided to help education agencies determine an appropriate passing score. The panels' average passing score recommendation for the Praxis Education of Young Children test is 80.80 (out of a possible 125 raw-score points). The value was rounded to 81 (next highest raw score) to determine the functional recommended passing score. The scaled score associated with 81 raw points is 160.

Table 4 presents the estimated conditional standard error of measurement (CSEM) around the recommended passing score. A standard error represents the uncertainty associated with a test score. The scaled scores associated with one and two CSEMs above and below the recommended passing score are provided. The conditional standard error of measurement provided is an estimate.

**Table 4**

***Passing Scores Within 1 and 2 CSEMs of the Recommended Passing Score***[8]

| Recommended passing score (CSEM) | | Scale score equivalent |
|---|---|---|
| 81 (5.12) | | 160 |
| -2 CSEMs | 71 | 149 |
| -1 CSEM | 76 | 154 |
| + 1 CSEM | 87 | 166 |
| + 2 CSEMs | 92 | 171 |

***Note.*** **CSEM = conditional standard error of measurement.**

[8] The unrounded CSEM value is added to or subtracted from the rounded passing-score recommendation. The resulting values are rounded up to the next-highest whole number and the rounded values are converted to scaled scores.

## FINAL EVALUATIONS

The panelists completed an evaluation at the conclusion of their standard-setting study. The evaluation asked the panelists to provide feedback about the quality of the standard-setting implementation and the factors that influenced their decisions. The responses to the evaluation provided evidence of the validity of the standard-setting process, and, as a result, evidence of the reasonableness of the recommended passing score.

Panelists were also shown the panel's recommended passing score and asked (a) how comfortable they are with the recommended passing score and (b) if they think the score was too high, too low, or about right. A summary of the final evaluation results is presented in Appendix D.

All panelists *strongly agreed* or *agreed* that they understood the purpose of the study. Twenty-six of the 28 panelists *strongly agreed* or *agreed* that the facilitator's instructions and explanations were clear and they were prepared to make their standard-setting judgments. Twenty-seven of the 28 panelists *strongly agreed* or *agreed* that the standard-setting process was easy to follow.

All of the panelists indicated they were at least *somewhat comfortable* with the passing score they recommended; 19 of the 28 panelists were *very comfortable*. Twenty-six of the 28 panelists indicated the recommended passing score was *about right* with the remaining two panelists indicating that the passing score was *too low*.

# SUMMARY

To support the decision-making process for education agencies establishing a passing score (cut score) for the Praxis Education of Young Children test, research staff from ETS designed and conducted a multistate standard-setting study.

ETS provides a recommended passing score from the multistate standard-setting study to help education agencies determine an appropriate operational passing score. For the Praxis Education of Young Children test, the recommended passing score[9] is 81 out of a possible 125 raw-score points. The scaled score associated with a raw score of 81 is 160 on a 100–200 scale.

[9] Results from the two panels participating in the study were averaged to produce the recommended passing score.

# REFERENCES


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# APPENDIX A

# PANELISTS' NAMES & AFFILIATIONS

***Participating Panelists With Affiliation***

| **Panelist** | **Affiliation** |
|---|---|
| Dawn E. Alexander | Warner Elementary School (DE) |
| Lisa Baker | West Virginia University Parkersburg (WV) |
| Paige Bray | University of Hartford (CT) |
| Monica Brown | Oakhaven Elementary School (TN) |
| Michelle Buchanan | University of Wyoming (WY) |
| Christina Buford | Watkins Elementary School (MS) |
| Patricia Cantor | Plymouth State University (NH) |
| Eun Kyeong Cho | University of New Hampshire (NH) |
| Jennifer Douell | Clinton Public Schools (MS) |
| Bronwyn Fees | Kansas State University (KS) |
| Melanie K. Felton | College of Saint Mary (NE) |
| Julie Goggin | South Kingstown Inclusionary Preschool (RI) |
| Joanna Grymes | Arkansas State University (AR) |
| Elizabeth Hope Halfacre-Bryant | Lexington School District One-Pleasant Hill Elementary School (SC) |
| Beth Hatcher | University of Maine at Farmington (ME) |
| Shelli Henehan | University of the Ozarks (AR) |
| Donna Karno | University of Maine at Farmington (ME) |
| Catie Limbach | Crawford Public Schools (NE) |
| Christine Marvin | University of Nebraska Lincoln (NE) |
| Sydney Montoya | Basic Beginnings (WY) |
| Dale Niederhauser | West Virginia University (WV) |
| Elizabeth Park | Chaminade University of Honolulu (HI) |
| Kim Richardson | Kelly Edwards Elementary (SC) |
| Anna Severens | Nevada Department of Education (NV) |
| Ivy Starns | Louisiana Department of Education (LA) |
| Sara J. Stroup | Fort Hays State University (KS) |
| Kelley White | College of Charleston (SC) |
| Emily Williamson | University of Louisiana at Monroe (LA) |

# APPENDIX B

# STUDY AGENDA

# AGENDA

# Praxis Education of Young Children (5024) Standard-Setting Study

Day 1

Welcome and Introduction
Overview of Standard Setting and the Praxis Education of Young Children Test
Review the Praxis Education of Young Children Test
Discuss the Praxis Education of Young Children Test
Break
Discuss the Just Qualified Candidate (JQC)
Create the JQC Description
Lunch
Create the JQC Description (continued)
Break
Discuss & finalize JQC description
Training for Selected-Response (SR) judgments
Practice judgments & discuss
Round 1 SR Judgments
Collect Materials; End of Day 1

Day 2

Overview of Day 2
Training of Constructed-Response (CR) judgments
Practice CR judgments & discuss
Round 1 CR judgments
Discuss judgments and Round 2
Lunch
Discuss judgments and Round 2 (continued)
Complete Final Evaluation
Collect Materials; End of Study

# APPENDIX C

# JUST QUALIFIED CANDIDATE DESCRIPTION

## Description of the Just Qualified Candidate[10]

**A just qualified candidate …**

### I. Child Development and Learning

1. Understands young children's age-associated characteristics and needs
2. Understands that children's development and learning is affected by multiple influences, such as the children's environments, health status and abilities, and community characteristics
3. Understands that children develop at different rates and is familiar with typical and atypical development
4. Can apply developmental knowledge to create healthy, respectful, supportive, and appropriate learning environments

### II. Observation, Documentation and Assessment

1. Understands the goals, benefits and uses of assessment to inform curriculum and instruction
2. Understands different types of assessments and the advantages and disadvantages of various methods and procedures
3. Familiar with ethical and responsible assessment practices
4. Understands the need for screening, referral, evaluation and family participation to identify children who may benefit from additional support
5. Knows the importance of building two-way communication with families and colleagues to establish shared responsibilities for child-centered learning.

### III. Developmentally Appropriate Practices

1. Understands how environments influence children's learning and links teaching approaches to children's individual and developmental needs

### IV. Professionalism, Family and Community

1. Understands the importance of partnering with families and communities (i.e. programs, relatives, neighborhoods) to advance children's development and learning
2. Understands and uses appropriate personnel and technological resources to enhance communication and teaching approaches for children's development and learning
3. Understands the benefits of professionalism (i.e. guidelines and standards) and the importance of ongoing dynamic and reflective practices

[10] Description of the just qualified candidate focuses on the knowledge/skills that differentiate a *just* from a *not quite* qualified candidate.

## Description of the Just Qualified Candidate[11] (continued)

**A just qualified candidate …**

### V. A. Language and Literacy

1. Knows how to facilitate and expand children's communication and language development
2. Knows the components and processes of emergent reading (COP, phonological awareness, phonemic awareness, comprehension, fluency, and vocabulary)
3. Knows how to develop children's understanding of features and structures of a variety of types of text and comprehension of those texts.
4. Knows strategies to integrate literacy into the content areas
5. Understands the developmental stages of writing (pre-emergent, emergent) and how to facilitate children's writing.
6. Knows how to develop children's knowledge of writing for a variety of purposes

### B. Mathematics

1. Knows how to help children understand the relationship between number names and quantities
2. Knows strategies and tools that support children's learning in counting
3. Knows strategies to develop children's understanding of operations and algebraic thinking (addition & subtraction, patterns, concepts & operations)
4. Knows how to develop children's understanding of place values & representations of rational numbers and their properties
5. Knows strategies and tools to support children's understanding of measurement
6. Knows strategies and tools to help children represent and interpret data
7. Knows how to develop children's ability to analyze, compare and create one, two and three dimensional figures and shapes

[11] Description of the just qualified candidate focuses on the knowledge/skills that differentiate a *just* from a *not quite* qualified candidate.

## Description of the Just Qualified Candidate[12] (continued)

**A just qualified candidate …**

### VI. Knowledge of Teaching

1. Understands DAP
2. Can apply and give a rationale for using practices that are developmentally appropriate (age, individual, cultural)

### A. Professionalism, Family and Community

1. Can provide examples of strategies and activities to encourage family and community support of children's learning
2. Can demonstrate knowledge of professionalism in reaching out to families and communities
3. Can articulate what it means to be an early childhood professional, including the ethical responsibilities

### B. Observation, Documentation and Assessment

1. Can provide examples of developmentally appropriate assessment strategies
2. Can provide examples of how assessment information is used to guide instruction

### C. Content Pedagogy and Knowledge

1. Can provide examples of developmentally appropriate content pedagogy

[12] Description of the just qualified candidate focuses on the knowledge/skills that differentiate a *just* from a *not quite* qualified candidate.

# APPENDIX D

# RESULTS

**Table D1**

***Panel Member Demographics (by Panel)***

| | Panel 1 | | Panel 2 | |
|---|---|---|---|---|
| | ***N*** | **%** | ***N*** | **%** |
| **Current position** | | | | |
| Teacher | 4 | 33% | 5 | 31% |
| Administrator/Department head | 2 | 17% | 3 | 19% |
| College faculty | 6 | 50% | 8 | 50% |
| **Race** | | | | |
| White | 9 | 75% | 14 | 88% |
| Black or African American | 2 | 17% | 0 | 0% |
| Hispanic or Latino | 1 | 8% | 0 | 0% |
| Asian or Asian American | 0 | 0% | 2 | 13% |
| **Gender** | | | | |
| Female | 12 | 100% | 15 | 94% |
| Male | 0 | 0% | 1 | 6% |
| **Are you currently certified to teach this subject in your state?** | | | | |
| Yes | 8 | 67% | 7 | 44% |
| No | 4 | 33% | 9 | 56% |
| **Are you currently teaching this subject in your state?** | | | | |
| Yes | 9 | 75% | 14 | 88% |
| No | 3 | 25% | 2 | 13% |
| **Are you currently supervising or mentoring other teachers of this subject?** | | | | |
| Yes | 10 | 83% | 13 | 81% |
| No | 2 | 17% | 3 | 19% |
| **Including this year, how many years of experience do you have teaching this subject?** | | | | |
| 3 years or less | 2 | 17% | 0 | 0% |
| 4–7 years | 2 | 17% | 3 | 19% |
| 8–11 years | 0 | 0% | 3 | 19% |
| 12–15 years | 2 | 17% | 2 | 13% |
| 16 years or more | 6 | 50% | 8 | 50% |
| **If you are college faculty, are you currently involved in the training/preparation of teacher candidates in this subject?** | | | | |
| Yes | 6 | 50% | 8 | 50% |
| No | 0 | 0% | 0 | 0% |
| Not college faculty | 6 | 50% | 8 | 50% |

**Table D2**

***Passing Score Summary by Round of Judgments***

| | Panel 1 | | Panel 2 | |
|---|---|---|---|---|
| **Panelist** | **Round 1** | **Round 2** | **Round 1** | **Round 2** |
| 1 | 73.98 | 76.08 | 74.89 | 77.38 |
| 2 | 90.06 | 90.89 | 55.82 | 60.36 |
| 3 | 75.59 | 75.59 | 71.98 | 73.07 |
| 4 | 81.04 | 81.44 | 91.24 | 91.24 |
| 5 | 75.79 | 76.14 | 89.87 | 88.37 |
| 6 | 82.37 | 82.67 | 76.59 | 77.78 |
| 7 | 83.24 | 81.26 | 81.31 | 78.53 |
| 8 | 92.94 | 91.07 | 79.17 | 73.69 |
| 9 | 80.89 | 79.89 | 73.13 | 75.47 |
| 10 | 84.27 | 84.47 | 82.37 | 82.42 |
| 11 | 82.03 | 82.93 | 82.42 | 81.42 |
| 12 | 93.06 | 93.56 | 74.92 | 76.72 |
| 13 | | | 80.36 | 81.16 |
| 14 | | | 81.57 | 81.07 |
| 15 | | | 82.07 | 81.17 |
| 16 | | | 79.38 | 77.79 |
| **Average** | 82.94 | 83.00 | 78.57 | 78.60 |
| **Lowest** | 73.98 | 75.59 | 55.82 | 60.36 |
| **Highest** | 93.06 | 93.56 | 91.24 | 91.24 |
| **SD** | 6.39 | 6.08 | 8.05 | 6.83 |
| **SEJ** | 1.85 | 1.75 | 2.01 | 1.71 |

**Table D3**

***Final Evaluation: Panel 1***

| | Strongly agree | | Agree | | Disagree | | Strongly disagree | |
|---|---|---|---|---|---|---|---|---|
| | ***N*** | **%** | ***N*** | **%** | ***N*** | **%** | ***N*** | **%** |
| • I understood the purpose of this study. | 10 | 83% | 2 | 17% | 0 | 0% | 0 | 0% |
| • The instructions and explanations provided by the facilitator were clear. | 10 | 83% | 2 | 17% | 0 | 0% | 0 | 0% |
| • The training in the standard-setting method was adequate to give me the information I needed to complete my assignment. | 11 | 92% | 1 | 8% | 0 | 0% | 0 | 0% |
| • The explanation of how the recommended passing score is computed was clear. | 9 | 75% | 3 | 25% | 0 | 0% | 0 | 0% |
| • The opportunity for feedback and discussion between rounds was helpful. | 12 | 100% | 0 | 0% | 0 | 0% | 0 | 0% |
| • The process of making the standard-setting judgments was easy to follow. | 9 | 75% | 3 | 25% | 0 | 0% | 0 | 0% |

**Table D3 (continued)**

***Final Evaluation: Panel 1***

| How influential was each of the following factors in guiding your standard-setting judgments? | Very influential | | Somewhat influential | | Not influential | |
|---|---|---|---|---|---|---|
| | *N* | % | *N* | % | *N* | % |
| • The description of the just qualified candidate | 11 | 92% | 1 | 8% | 0 | 0% |
| • The between-round discussions | 7 | 58% | 5 | 42% | 0 | 0% |
| • The knowledge/skills required to answer each test item | 10 | 83% | 2 | 17% | 0 | 0% |
| • The passing scores of other panel members | 3 | 25% | 8 | 67% | 1 | 8% |
| • My own professional experience | 8 | 67% | 4 | 33% | 0 | 0% |

| | Very comfortable | | Somewhat comfortable | | Somewhat uncomfortable | | Very uncomfortable | |
|---|---|---|---|---|---|---|---|---|
| | *N* | % | *N* | % | *N* | % | *N* | % |
| • Overall, how comfortable are you with the panel's recommended passing score? | 10 | 83% | 2 | 17% | 0 | 0% | 0 | 0% |

| | Too low | | About right | | Too high | |
|---|---|---|---|---|---|---|
| | *N* | % | *N* | % | *N* | % |
| • Overall, the recommended passing score is: | 1 | 8% | 11 | 92% | 0 | 0% |

**Table D4**

***Final Evaluation: Panel 2***

| | Strongly agree | | Agree | | Disagree | | Strongly disagree | |
|---|---|---|---|---|---|---|---|---|
| | ***N*** | **%** | ***N*** | **%** | ***N*** | **%** | ***N*** | **%** |
| • I understood the purpose of this study. | 14 | 88% | 2 | 13% | 0 | 0% | 0 | 0% |
| • The instructions and explanations provided by the facilitator were clear. | 11 | 69% | 3 | 19% | 2 | 13% | 0 | 0% |
| • The training in the standard-setting method was adequate to give me the information I needed to complete my assignment. | 9 | 56% | 5 | 31% | 1 | 6% | 1 | 6% |
| • The explanation of how the recommended passing score is computed was clear. | 10 | 63% | 6 | 38% | 0 | 0% | 0 | 0% |
| • The opportunity for feedback and discussion between rounds was helpful. | 15 | 94% | 1 | 6% | 0 | 0% | 0 | 0% |
| • The process of making the standard-setting judgments was easy to follow. | 6 | 38% | 9 | 56% | 1 | 6% | 0 | 0% |

**Table D4 (continued)**

***Final Evaluation: Panel 2***

| How influential was each of the following factors in guiding your standard-setting judgments? | Very influential | | Somewhat influential | | Not influential | |
|---|---|---|---|---|---|---|
| | *N* | % | *N* | % | *N* | % |
| • The description of the just qualified candidate | 13 | 81% | 3 | 19% | 0 | 0% |
| • The between-round discussions | 13 | 81% | 3 | 19% | 0 | 0% |
| • The knowledge/skills required to answer each test item | 14 | 88% | 2 | 13% | 0 | 0% |
| • The passing scores of other panel members | 7 | 44% | 6 | 38% | 3 | 19% |
| • My own professional experience | 10 | 63% | 5 | 31% | 1 | 6% |

| | Very comfortable | | Somewhat comfortable | | Somewhat uncomfortable | | Very uncomfortable | |
|---|---|---|---|---|---|---|---|---|
| | *N* | % | *N* | % | *N* | % | *N* | % |
| • Overall, how comfortable are you with the panel's recommended passing score? | 9 | 56% | 7 | 44% | 0 | 0% | 0 | 0% |

| | Too low | | About right | | Too high | |
|---|---|---|---|---|---|---|
| | *N* | % | *N* | % | *N* | % |
| • Overall, the recommended passing score is: | 1 | 6% | 15 | 94% | 0 | 0% |