

**Annual Technical Report**

**2022–2023 Program Year**



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# Introduction

This report presents the results for the 2022–2023 program year of the Massachusetts Performance Assessment for Leaders (PAL).

## PAL Assessment Summary

The PAL provides a measure of leadership candidates’ readiness for initial school leader positions, informing licensure decisions while also supporting candidate learning and preparation program improvement. The assessment consists of four field-based performance tasks that allow candidates to demonstrate their leadership knowledge and skills in planning for an area of school improvement, facilitating a professional learning group, observing and giving feedback to a teacher, and engaging families and the community in improving student learning. Candidates produce written memos, reports, and video products as evidence of their accomplishment of each task.

PAL, which is aligned with state and national leadership standards and indicators, was developed with input from K–12 school and district leaders and higher education faculty. More information on the development and policy around implementation of the PAL can be found here: <http://www.doe.mass.edu/pal/>.

PAL is designed as a summative assessment of a candidate’s key leadership knowledge and skills. The tasks ask licensure candidates to set direction by developing a plan for an area of school improvement, creating a professional learning culture among school staff, supporting individual teacher development through observation and feedback, and engaging families and community in improving student learning. Specifically, the four tasks comprise the following:

* Task 1: Leadership through a vision for high student achievement
* Task 2: Instructional leadership for a professional learning culture
* Task 3: Leadership in observing, assessing, and supporting individual teacher effectiveness
* Task 4: Leadership for family engagement and community involvement

Effective July 1, 2016, the Massachusetts Department of Elementary and Secondary Education awarded the contract for PAL administration to the Evaluation Systems group of Pearson. Pearson implemented task-based registration, scoring, and reporting. Candidates register for each task individually, for new or any retake submissions. The candidate and program website is located here: [www.ma-pal.nesinc.com](http://www.ma-pal.nesinc.com/).

## Pathways to Principal Licensure

There are three pathways to principal licensure in Massachusetts: 1) completion of a state-approved preparation program, 2) an administrative apprenticeship/internship pathway, and 3) a panel review process. All three require a candidate to pass the PAL assessment.

**State-Approved Preparation Programs.** Such programs may be offered by public and private higher education institutions, districts, collaboratives, and non-profit organizations. Regardless of the type of organization, all Massachusetts providers are required to meet the same rigorous expectations for approval and undergo the same processes associated with reviews: <https://www.doe.mass.edu/edprep/review>.

**Administrative Apprenticeship/Internship.** This pathway, launched in 2001, was designed to enable districts to support aspiring education leaders by providing seminars and other leadership development learning experiences. Since 2012, candidates in this pathway have been required to complete internship experience and demonstrate proficiency in the Professional Standards for Administrative Leadership (<https://www.doe.mass.edu/licensure/academic-prek12/default.html>).

**Panel Review.** The panel review option is available to applicants who have completed an accredited leadership or management program and have had the required number of years of administrative, leadership, or management experience. Candidates seeking licensure through this option must compile information on their professional education and professional experience and be interviewed by a panel of experienced administrators and educators.

# PAL Assessment Development Summary

The Department of Elementary and Secondary Education began development of PAL in 2012 in partnership with key stakeholder groups after regulations passed in 2011 requiring that candidates must demonstrate that they are meeting the [Professional Standards for Administrative Leadership](http://www.doe.mass.edu/lawsregs/603cmr7.html?section=10) by completing a performance assessment for initial license (603.CMR 7.10). Between 2012 and 2015, the Department worked with their selected development vendor (Bank Street College of Education) to create, pilot, and field test the PAL tasks. Effective September 1, 2014, the Commonwealth of Massachusetts required all applicants for principal licensure to complete four PAL assessment tasks. Applicants included individuals enrolled in leadership preparation programs and those pursuing licensure through the administrative apprenticeship/internship or panel review routes. Fall 2015 was the first operational year of the PAL.

## **PAL Assessment Design**

As summarized [on](http://www.doe.mass.edu/pal/tasks.html) the PAL website, the tasks of the PAL Assessment are as follows:

### Task 1: Leadership through a Vision for High Student Achievement

Focusing on the two pillars of highly effective schools—the instructional program (curriculum, instruction, and assessment) and school culture—a candidate will develop a school vision and improvement plan for one school-based priority area. The candidate will collect and analyze quantitative and qualitative data on student performance, student and teacher relationships, and school culture; select a priority area for focus; document existing school programs, services, and practices; and develop a set of goals, objectives, and action strategies with input from school leaders and key stakeholder groups.

### Task 2: Instructional Leadership for a Professional Learning Culture

A candidate will demonstrate their capacity to foster a professional learning culture to improve student learning, by working with a small group of teachers using structured learning activities to improve the teachers’ knowledge and skills. The candidate will support teachers in improving an existing curriculum, instruction, or assessment strategy, while documenting the process, teachers’ teamwork, and improved practices.

### Task 3: Leadership in Observing, Assessing, and Supporting Individual Teacher Effectiveness

A candidate will demonstrate instructional leadership skills to plan for a teacher observation, observe, analyze the observation and student data, provide feedback, and plan support for an individual teacher. The candidate will document his or her work in the observation cycle and the quality and use of the feedback provided to teachers.

### Task 4: Leadership for Family Engagement and Community Involvement

A candidate will develop a proposal and implement one component to improve family engagement and community involvement in a school’s priority area that is related to student achievement or student health, recreation, or social needs that impact their learning. The candidate will work collaboratively with a work group representing school leadership, staff, families and community members, and students to select a priority area based on evidence of student needs; gather information related to family engagement and community involvement needs; develop a proposal; and implement one component with work group support.

## **PAL Content Validity, Bias and Sensitivity, Pilot Study, and Field Trial**

The [PAL Field Trial Technical Report](http://www.doe.mass.edu/pal/TechnicalReport.docx) documents the development process leading up to the first operational program year. As outlined in the report, the PAL assessment system was developed and refined through a standards-based design process to ensure content validity and alignment to the state standards and expectations for beginning school leaders.

Representatives from a number of Massachusetts preparation programs and pathways, as well as K–12 education leaders, worked together to draft the PAL Field Trial Technical Report. These content area experts served on either a design committee or a content validity committee. Members of each committee reviewed the four draft tasks and the assessment system before they were piloted to determine their importance and relevance in relation to 1) state and national leadership standards, 2) the research literature on effective school leadership, and 3) the committee members’ knowledge of the job of new leaders. Determining the content validity required addressing the question: “How well does the content of PAL represent core domains of school leadership knowledge and skills?” The two committees conducted follow-up reviews after the Pilot Study, made revisions to the PAL assessment before the Field Trial was launched in September 2014, revised again after the Field Trial, and revised before the program year 2015–16 was launched.

Additionally, a Bias Review Committee (composed of nine experienced educational leaders and program faculty with expertise in detecting varied forms of bias) was formed and provided input on the tasks, which were then revised to reduce potential bias and increase sensitivity.

Conclusions drawn from 1) the three content validation steps of Standards Alignment, Design Committee Validation, and Content Committee Validation, and 2) the two face validity activities of Pilot Study and Field Trial Study Candidate and Faculty Face Validation were as follows:

“The PAL tasks have very good content validity, based on the strong agreement from the PAL design and content validity committees, and reinforced by the face validation from Pilot Study and Field Trial surveys of program faculty and candidates. Both committees strongly agreed that the four PAL tasks are aligned to the Massachusetts Standards for Administrative Leadership, provide authentic job-related experiences, and are relevant to the work that successful school leaders must be able to do. The strong agreement among the content validity committee members for all indicators and tasks exceeds professional standards for content validity (Wilson et al., 2012). These results were further confirmed by strongly positive agreement ratings for face validity in the Pilot Study and Field Trial surveys of preparation program faculty, and the positive agreement among most Pilot Study and the majority of the Field Trial candidates” (Orr et al., 2016).

# The PAL Scoring System

The PAL assessment includes indicators grouped under rubrics that are combined to create an overall score for each task. During the 2022-2023 operational program year, 14.68% of task submissions were double scored. Previous rules that were established around double scoring, resolution, and reporting as outlined in this section of the report were used for these submissions.

## Indicator Scores

Each PAL submission is reviewed by trained and calibrated scorers. Scored indicators receive a numeric score between 1 and 4. For submissions that are double scored, the Indicator Scores are the average of the scores provided by the two scorers, including any applicable resolution. “Resolution” is the term for a description of scoring at the indicator level when two assigned indicator scores differ by more than one score point. “Adjudication” refers to resolving total task scores that fall on either side of the cut score.

## Rubric Scores and Descriptors

Each Rubric Score is the average of its collection of indicator scores. Note that the average value reported is truncated and not rounded. Scored rubrics receive a numeric score between 1 and 4, with a descriptor indicating the level of attainment for that rubric, as follows:

|  |  |
| --- | --- |
| **Rubric Score Range** | **Descriptor** |
| 1.00 to 2.09 | Beginning |
| 2.10 to 2.74 | Developing |
| 2.75 to 3.49 | Meeting |
| 3.50 to 4.00 | Exceeding |

## Overall Task Scores and Status

The Overall Task Score is the truncated (unrounded) average of all the Rubric Scores within that task. Scored tasks receive a numeric score between 1 and 4. All tasks must meet or exceed a threshold score of 2.1. In addition to a numeric score, the Task Score Summary Report indicates whether or not the Overall Task Score met or exceeded the minimum threshold score of 2.1.

## **PAL Summary Score**

The PAL Summary Score is the average of the Overall Task Score values (best attempts) of all four submitted and scored tasks. Note that the average value reported is truncated and not rounded. In order to pass the PAL assessment, each task must meet the minimum threshold score of 2.1, and the PAL Summary Score must meet or exceed the PAL passing score of 2.75 (effective as of the 2016–2017 program year).

## Condition Codes and Incomplete Tasks

Any indicator score assigned a letter (e.g., “B”) instead of a numeric score is an indication that the submission or portions of the submission are deemed unscorable in accordance with the [PAL Submission Requirements](http://www.ma-pal.nesinc.com/Content/Docs/PALSubmissionRequirements.pdf). If a condition code is received for any indicator, the task in which that Condition Code was assigned would **not** be included in the PAL Summary Score. Any task that contains an indicator with a Condition Code will be unscorable and reported overall as “Incomplete.” Effective as of the 2018–19 program year, Condition Code A (Work is not blinded) is no longer applied.

## Scoring Model

The following bullets summarize the scoring model applied for the 2022-2023 program year:

* Scorers evaluate the entire submitted task and apply scores by indicator.
* Ten percent (10%) of task submissions are double scored (i.e., scored by two scorers independently).
* Rater agreement is calculated by indicator and evaluated through exact and adjacent scores.
* Double-scored task submissions are evaluated by a scoring supervisor in the event a resolution or adjudication is required:
  + **Resolution:** If Scorer 1 and Scorer 2 are discrepant (i.e., more than 1 score point apart) on any indicator, the task is resolved by a scoring supervisor.
  + **Adjudication:** If Scorer 1 and Scorer 2 are on opposite sides of the task threshold score (2.1), the task is adjudicated by a scoring supervisor who scores the entire task submission.
* If a portfolio does not need resolution or adjudication, then the average of Scorer 1 and Scorer 2 is reported to the candidate.

## Scorer Recruitment and Training

PAL scoring for the 2022–2023 program year was conducted by trained experienced scorers. Scorer qualifications did not change from the prior program year.

Scorer Training—Experienced Scorers. Experienced scorers completed the scoring for the first submission deadline in the 2022–2023 program year. Virtual remote group training consisted of practice portfolio discussions with supervisors, followed by independent qualification through meeting the passing standard on a calibration portfolio. Each scorer discussed the results of the calibration with a supervisor after completion, reviewing the rationale for all rubric scores even when the scorer had accurate scores.

## The Scoring Process

Online Distributed Scoring. Scoring is conducted by qualified scorers using an online distributed scoring system. Scorers are able to access task submissions through the secure online system and are provided with training and support information for the online system.

Scorer Monitoring.Scorers are monitored through the use of multiple reports that provide information at the task and rubric indicator level on inter-rater reliability (exact agreement, adjacency, discrepancy rates), rate of scoring (total number and average time taken to score each portfolio), and backreading performance.

Scorers are systematically monitored by their supervisors through a backreading process that ensures they are applying scores accurately and consistently. Backreading is defined as supervisors scoring a previously scored portfolio for the purpose of reviewing the original scoring and providing feedback to the scorer. During backreading, a scoring supervisor applies scores and identifies key evidence to support the scores. After applying scores, supervisors review scores from the original scoring and review backreading scores with feedback to the original scorer as appropriate.

# Operational Administration Year 2022–2023

The following presents information on performance during the 2022–2023 program year.

**Note that data are suppressed for any groups with fewer than six candidates (represented as “- -”). Groups with no data are represented with an N of “0.”**

## Candidate Performance Summary

**Completers and All Takers Totals.** Based on the assessment model, there are two sets of candidate numbers for the 2022–2023 report.

**PAL Completers:** Candidates who have taken all four tasks and submitted at least one scorable task during this program year (i.e., between September 1, 2022, and August 31, 2023). If a candidate submitted at least one scorable task during this period, the data includes the candidate’s best score on all attempts for tasks submitted between September 1, 2016, and August 31, 2023. Reports based on completers’ data, therefore, include best attempts only.

**All Takers:** Candidates who have submitted at least one scorable task between September 1, 2022, and August 31, 2023.

A summary of candidate numbers is as follows:

1. The N of PAL completers is 241; that is, 241 candidates completed their **final** task in the 2022–2023 program year, thereby obtaining scores on all four tasks within the PAL Assessment.
2. The N of All Takers (2022–2023) attempting at least one task is 476, as follows:

Table 1. Number of Tasks Completed by PAL Candidates

| **N of Tasks Completed** | **N of Candidates** |
| --- | --- |
| 4 | 106 |
| 3 | 67 |
| 2 | 108 |
| 1 | 195 |
| **Total** | **476** |

During program year 2022-2023, 476 individual candidates submitted to Pearson at least one scorable PAL portfolio task toward the assessment for licensure (as shown in Table 1). This included 106 candidates who completed all four tasks, 67 candidates who completed three tasks, 108 candidates who completed two tasks, and 195 candidates who completed one task. Compared to program year 2021-2022, more individual candidates submitted one scorable PAL portfolio task (195) and slightly more candidates completed all four tasks (106) in program year 2022-2023.

Table 2 shows the percentage by demographic attribute of completers and all takers passing all or some of the PAL tasks. The first column includes the pass rate for all candidates who finished the PAL assessment (“completers”) by submitting their **final** task and passing the PAL in the 2022-2023 program year. This includes individuals who began submitting tasks in prior program years but only passed upon submitting their final task in the 2022-2023 program year. The first column also includes candidates who submitted all four tasks and passed the PAL assessment during the 2022-2023 program year only. The overall pass rate for the PAL assessment during the 2022-2023 program year was 94% (N=241).

**Additional note, as stated previously: For all tables**, **data are suppressed for any groups with fewer than 6 candidates (represented as “- -”). Groups with no data are represented with an N of “0.”**

Table 2: More than three times as many females completed the assessment as males. Males had a lower pass rate on the assessment than females. Candidates seeking licensure via panel review had a lower assessment pass rate than candidates seeking licensure via other pathways. The assessment pass rate for candidates who reported their ethnicity as Hispanic or White was higher than candidates who reported their ethnicity as Asian or Black.

Table 2. Best Attempt Assessment Pass Rates by Demographic Characteristic for Candidates Submitting Tasks in 2022–2023

|  | **Assessment (Completers Only)** | | **Task 1: Leadership through a Vision for High Student Achievement** | | **Task 2: Instructional Leadership for a Professional Learning Culture** | | **Task 3: Leadership in Observing, Assessing, and Supporting Individual Teacher Effectiveness** | | **Task 4: Leadership for Family Engagement and Community Involvement** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **N** | **% Pass** | **N** | **% Pass** | **N** | **% Pass** | **N** | **% Pass** | **N** | **% Pass** |
| **All Completers** | 241 | 94% | 283 | 99% | 264 | 99% | 246 | 100% | 243 | 99% |
| **Preparation Pathway** |  |  |  |  |  |  |  |  |  |  |
| **Preparation Program** | 161 | 96% | 173 | 99% | 170 | 99% | 160 | 100% | 158 | 99% |
| **Alternative Pathway-Internship** | 67 | 91% | 97 | 99% | 77 | 99% | 74 | 100% | 72 | 100% |
| **Alternative Pathway-Panel Review** | 9 | 78% | 6 | 100% | 10 | 100% | 6 | 100% | 8 | 88% |
| **Out of State** | 4 | -- | 7 | 100% | 7 | 100% | 6 | 100% | 5 | -- |
| **Gender** |  |  |  |  |  |  |  |  |  |  |
| **Male** | 44 | 84% | 53 | 96% | 52 | 100% | 40 | 100% | 46 | 98% |
| **Female** | 193 | 96% | 225 | 100% | 207 | 99% | 202 | 100% | 192 | 99% |
| **Nonbinary** | 0 | 0 | 1 | -- | 1 | -- | 1 | -- | 0 | 0 |
| **Not Reported** | 4 | -- | 4 | -- | 4 | -- | 3 | -- | 5 | -- |
| **Race/Ethnicity** |  |  |  |  |  |  |  |  |  |  |
| **NatAmer** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Asian** | 6 | 83% | 3 | -- | 3 | -- | 3 | -- | 5 | -- |
| **Black** | 15 | 87% | 19 | 100% | 17 | 100% | 19 | 100% | 13 | 92% |
| **White** | 191 | 95% | 226 | 99% | 206 | 99% | 196 | 100% | 194 | 99% |
| **Hispanic** | 6 | 100% | 8 | 100% | 7 | 100% | 5 | -- | 9 | 100% |
| **NatAmer/Latino** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Asian/Latino** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Black/Latino** | 4 | - - | 3 | -- | 4 | -- | 6 | 100% | 4 | -- |
| **Pacific** | 0 | 0 | 1 | -- | 1 | -- | 1 | -- | 0 | 0 |
| **Pacific/Latino** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **White/Latino** | 5 | -- | 8 | 100% | 5 | -- | 4 | -- | 4 | -- |
| **Multiracial** | 3 | -- | 1 | -- | 2 | -- | 2 | -- | 2 | -- |
| **Multiracial/Latino** | 3 | -- | 3 | -- | 6 | 100% | 3 | -- | 3 | -- |
| **Not reported** | 8 | 88% | 11 | 100% | 13 | 100% | 7 | 100% | 9 | 100% |

Significance testing was conducted for program completers on all group comparisons by task and by total score. Findings showed females received higher scores on Task 4 compared to males. There were no significant differences on task scores by ethnicity or pathway. Findings showed females received higher total scores compared males. No significant differences in performance were observed across ethnicity or pathway.

Table 3 shows the percentage distribution by performance level and demographic characteristic of the best attempt by PAL candidates who submitted at least one scorable task in the 2021-2022 program year. As shown in Table 3, only a small percentage of candidates did not achieve the threshold of 2.1 for each task, with the majority of candidates scoring in the 2.75–3.49 range. Only a small percentage of candidates had exemplary scores for Tasks 1–4.

| **Table 3. Best Attempt Percentage Distribution by Task, Performance Level, and Demographics for All Takers Submitting Tasks in 2022–2023** | **N** | **Task 1** | | | | | **Task 2** | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **N** | **1.00-2.09** | **2.10-2.74** | **2.75-3.49** | **3.50-4.00** | **N** | **1.00-2.09** | **2.10-2.74** | **2.75-3.49** | **3.50-4.00** |
| **All Takers** | 476 | 283 | 1 | 14 | 81 | 4 | 264 | 1 | 11 | 83 | 5 |
| **Preparation Pathway** |  |  |  |  |  |  |  |  |  |  |  |
| **Preparation Program** | 306 | 173 | 1 | 13 | 83 | 3 | 170 | 1 | 12 | 82 | 6 |
| **Alternative Pathway-Internship** | 149 | 97 | 1 | 15 | 79 | 4 | 77 | 1 | 8 | 87 | 4 |
| **Alternative Pathway-Panel Review** | 14 | 6 | 0 | 33 | 67 | 0 | 10 | 0 | 20 | 80 | 0 |
| **Out of State** | 7 | 7 | 0 | 14 | 57 | 29 | 7 | 0 | 14 | 71 | 14 |
| **Gender** |  |  |  |  |  |  |  |  |  |  |  |
| **Male** | 90 | 53 | 4 | 15 | 81 | 0 | 52 | 0 | 12 | 87 | 2 |
| **Female** | 379 | 225 | 0 | 14 | 80 | 5 | 207 | 1 | 11 | 82 | 6 |
| **Nonbinary** | 1 | 1 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Not Reported** | 6 | 4 | - - | - - | -- | - - | 4 | - - | - - | -- | - - |
| **Race/Ethnicity** |  |  |  |  |  |  |  |  |  |  |  |
| **NatAmer** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Asian** | 8 | 3 | -- | -- | -- | -- | 3 | -- | -- | -- | -- |
| **Black** | 33 | 19 | 0 | 16 | 84 | 0 | 17 | 0 | 18 | 82 | 0 |
| **White** | 376 | 225 | 1 | 15 | 78 | 5 | 206 | 1 | 9 | 84 | 6 |
| **Hispanic** | 15 | 8 | 0 | 0 | 100 | 0 | 7 | 0 | 43 | 57 | 0 |
| **NatAmer/Latino** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Asian/Latino** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Black/Latino** | 7 | 3 | -- | -- | -- | -- | 4 | -- | -- | -- | -- |
| **Pacific** | 1 | 1 | -- | -- | -- | -- | 1 | -- | -- | -- | -- |
| **Pacific/Latino** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **White/Latino** | 10 | 8 | 0 | 0 | 100 | 0 | 5 | -- | -- | -- | -- |
| **Multiracial** | 4 | 1 | -- | -- | -- | -- | 2 | -- | -- | -- | -- |
| **Multiracial/Latino** | 6 | 3 | -- | -- | -- | -- | 6 | 0 | 17 | 83 | 0 |
| **Not reported** | 16 | 11 | 0 | 0 | 100 | 0 | 13 | 0 | 8 | 92 | 0 |
|  |  |  |  |  |  |  |  |  |  |  |  |

|  | **Task 3** | | | | | **Task 4** | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **N** | **1.00-2.09** | **2.10-2.74** | **2.75-3.49** | **3.50-4.00** | **N** | **1.00-2.09** | **2.10-2.74** | **2.75-3.49** | **3.50-4.00** |
| **All Takers** | 246 | 0 | 6 | 89 | 5 | 243 | 1 | 19 | 76 | 5 |
| **Preparation Pathway** |  |  |  |  |  |  |  |  |  |  |
| **Preparation Program** | 160 | 0 | 6 | 89 | 5 | 158 | 1 | 16 | 78 | 4 |
| **Alternative Pathway-Internship** | 74 | 0 | 7 | 86 | 7 | 72 | 0 | 24 | 71 | 6 |
| **Alternative Pathway-Panel Review** | 6 | 0 | 0 | 100 | 0 | 8 | 13 | 25 | 50 | 13 |
| **Out of State** | 6 | 0 | 0 | 100 | 0 | 5 | -- | -- | -- | -- |
| **Gender** |  |  |  |  |  |  |  |  |  |  |
| **Male** | 40 | 0 | 10 | 88 | 3 | 46 | 2 | 35 | 63 | 0 |
| **Female** | 202 | 0 | 5 | 89 | 6 | 192 | 1 | 15 | 79 | 6 |
| **Nonbinary** | 1 | -- | -- | -- | -- | 0 | 0 | 0 | 0 | 0 |
| **Not Reported** | 3 | - - | - - | -- | - - | 5 | - - | - - | - - | - - |
| **Race/Ethnicity** |  |  |  |  |  |  |  |  |  |  |
| **NatAmer** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Asian** | 3 | -- | -- | -- | -- | 5 | -- | -- | -- | -- |
| **Black** | 19 | 0 | 0 | 95 | 5 | 13 | 8 | 8 | 77 | 8 |
| **White** | 196 | 0 | 7 | 87 | 6 | 194 | 1 | 19 | 76 | 5 |
| **Hispanic** | 5 | -- | -- | -- | -- | 9 | 0 | 11 | 78 | 11 |
| **NatAmer/Latino** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Asian/Latino** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Black/Latino** | 6 | 0 | 0 | 100 | 0 | 4 | -- | -- | -- | -- |
| **Pacific** | 1 | -- | -- | -- | -- | 0 | 0 | 0 | 0 | 0 |
| **Pacific/Latino** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **White/Latino** | 4 | -- | -- | -- | -- | 4 | -- | -- | -- | -- |
| **Multiracial** | 2 | -- | -- | -- | -- | 2 | -- | -- | -- | -- |
| **Multiracial/Latino** | 3 | -- | -- | -- | -- | 3 | -- | -- | -- | -- |
| **Not reported** | 7 | 0 | 0 | 100 | 0 | 9 | 0 | 11 | 89 | 0 |

Next, we examined the mean scores for the tasks (Table 4), rubrics (Table 5), and indicators (Table 6). Table 4 shows slight differences in candidate scores across tasks. Mean task scores are slightly higher for Task 3 with a slightly smaller standard deviation and a somewhat restricted range (minimum score 2.12 and maximum score of 3.87).

Table 5 shows that average rubric scores range from 2.93 to 3.08. The highest performing rubric was 3a (Plan). The lowest performing rubrics were 1b (Design an Integrated Plan for Strategies to Develop and Implement Improvement in the Priority Academic Area), 4a (Plan to Promote Family and Community Involvement), and 4c (Analyze Feedback from Participants and Assess Leadership Skills).

Table 6 shows that average indicator scores range from 2.88to 3.10. The highest performing indicator was 3a1 (Observation focus selection) and the lowest performing indicator was 4a3 (Preparation of the plan, including strategies).

Table 4. Descriptive Statistics of Tasks for 2022-2023 All Takers

| **Task** | **Task Score** | | | | |
| --- | --- | --- | --- | --- | --- |
| **N** | **Mean** | **S.D.** | **Min** | **Max** |
| **Task 1: Leadership through a Vision for High Student Achievement** | 283 | 2.98 | 0.28 | 1.77 | 4.00 |
| **Task 2: Instructional Leadership for a Professional Learning Culture** | 264 | 2.99 | 0.27 | 1.66 | 4.00 |
| **Task 3: Leadership in Observing, Assessing, and Supporting Individual Teacher Effectiveness** | 246 | 3.03 | 0.23 | 2.12 | 3.87 |
| **Task 4: Leadership for Family Engagement and Community Involvement** | 243 | 2.94 | 0.31 | 1.83 | 4.00 |

Table 5. Descriptive Statistics of Rubrics by Task for 2022-2023 All Takers

|  | |  | **Rubric Score** | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **N** | **Mean** | **S.D.** | **Min** | **Max** |
| **Task** | **Rubric** | | 283 | 3.01 | 0.33 | 1.66 | 4.00 |
| **Task 1: Leadership through a Vision for High Student Achievement** | **Rubric 1a: Investigate and Prepare a Vision** | |
| **Rubric 1b: Design an Integrated Plan for Strategies to Develop and Implement Improvement in the Priority Academic Area** | | 283 | 2.93 | 0.33 | 1.33 | 4.00 |
| **Rubric 1c: Assess and Analyze Feedback from Participants** | | 283 | 3.00 | 0.35 | 2.00 | 4.00 |
| **Task 2: Instructional Leadership for a Professional Learning Culture** | **Rubric 2a: Plan to Facilitate Group Learning** | | 264 | 3.01 | 0.26 | 1.50 | 4.00 |
| **Rubric 2b: Enact a Professional Learning Culture to Support Team Learning** | | 264 | 2.98 | 0.39 | 1.50 | 4.00 |
| **Rubric 2c: Assess Team Learning to Improve Ongoing Group Learning** | | 264 | 2.99 | 0.34 | 2.00 | 4.00 |
| **Task 3: Leadership in Observing, Assessing, and Supporting Individual Teacher Effectiveness** | **Rubric 3a: Plan** | | 246 | 3.08 | 0.42 | 2.00 | 4.00 |
| **Rubric 3b: Conduct the Observation** | | 246 | 3.05 | 0.25 | 2.50 | 4.00 |
| **Rubric 3c: Provide Feedback and Suggest Support** | | 246 | 3.00 | 0.27 | 2.00 | 4.00 |
| **Rubric 3d: Assess: Analyze and Identify Implications** | | 246 | 2.98 | 0.41 | 2.00 | 4.00 |
| **Task 4: Leadership for Family Engagement and Community Involvement** | **Rubric 4a: Plan to Promote Family and Community Involvement** | | 243 | 2.93 | 0.28 | 2.00 | 4.00 |
| **Rubric 4b: Implement an Engagement or Involvement Strategy** | | 243 | 2.95 | 0.44 | 2.00 | 4.00 |
| **Rubric 4c: Analyze Feedback from Participants and Assess Leadership Skills** | | 243 | 2.93 | 0.42 | 1.50 | 4.00 |

Table 6. Descriptive Statistics by Indicators by Task for 2022-2023 PAL All Takers

|  |  | |  | **Indicator Score** | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **N** | **Mean** | **S.D.** | **Min** | **Max** |
| **Task** | **Rubric** | **Indicator** | | 283 | 3.03 | 0.41 | 1.00 | 4.00 |
| **Task 1: Leadership through a Vision for High Student Achievement** | **Rubric 1a: Investigate and Prepare a Vision** | **Indicator 1a1: Data collection** | |
| **Indicator 1a2: Data analysis and priority definition** | | 283 | 2.99 | 0.42 | 2.00 | 4.00 |
| **Indicator 1a3: Evaluation of existing policies, practices, and programs** | | 283 | 3.01 | 0.37 | 2.00 | 4.00 |
| **Rubric 1b: Design an Integrated Plan for Strategies to Develop and Implement Improvement in the Priority Academic Area** | **Indicator 1b1: Vision plan and focus** | | 283 | 2.96 | 0.39 | 1.00 | 4.00 |
| **Indicator 1b2: Solicitation of input from teachers and other stakeholders** | | 283 | 2.89 | 0.41 | 1.00 | 4.00 |
| **Indicator 1b3: Plan details** | | 283 | 2.94 | 0.47 | 2.00 | 4.00 |
| **Rubric 1c: Assess and Analyze Feedback from Participants** | **Indicator 1c1: Plan feedback** | | 283 | 2.99 | 0.45 | 2.00 | 4.00 |
| **Indicator 1c2: Assessment of leadership skills and practices** | | 283 | 3.01 | 0.40 | 2.00 | 4.00 |
| **Task 2: Instructional Leadership for a Professional Learning Culture** | **Rubric 2a: Plan to Facilitate Group Learning** | **Indicator 2a1: Group identification and group formation** | | 264 | 3.02 | 0.40 | 2.00 | 4.00 |
| **Indicator 2a2: Group learning plan** | | 264 | 3.01 | 0.37 | 1.00 | 4.00 |
| **Rubric 2b: Enact a Professional Learning Culture to Support Team Learning** | **Indicator 2b1: Group process** | | 264 | 3.02 | 0.32 | 2.00 | 4.00 |
| **Indicator 2b2: Group learning and work** | | 264 | 2.93 | 0.57 | 1.00 | 4.00 |
| **Rubric 2c: Assess Team Learning to Improve Ongoing Group Learning** | **Indicator 2c1: Assessment of group process and group work** | | 264 | 2.95 | 0.40 | 1.00 | 4.00 |
| **Indicator 2c2: Assessment of leadership skills and practices** | | 264 | 3.04 | 0.40 | 1.50 | 4.00 |
| **Task 3: Leadership in Observing, Assessing, and Supporting Individual Teacher Effectiveness** | **Rubric 3a: Plan** | **Indicator 3a1: Observation focus selection** | | 246 | 3.10 | 0.45 | 2.00 | 4.00 |
| **Indicator 3a2: Pre-observation meeting** | | 246 | 3.05 | 0.51 | 2.00 | 4.00 |
| **Rubric 3b: Conduct the Observation** | **Indicator 3b1: Use and application of teacher observation rubric** | | 246 | 3.05 | 0.37 | 2.00 | 4.00 |
| **Indicator 3b2: Description of observations** | | 246 | 3.06 | 0.27 | 2.00 | 4.00 |
| **Rubric 3c: Provide Feedback and Suggest Support** | **Indicator 3c1: Feedback content** | | 246 | 3.04 | 0.26 | 2.00 | 4.00 |
| **Indicator 3c2: Rapport and teacher engagement** | | 246 | 3.05 | 0.42 | 1.00 | 4.00 |
| **Indicator 3c3: Teacher development** | | 246 | 2.91 | 0.41 | 2.00 | 4.00 |
| **Rubric 3d: Assess: Analyze and Identify Implications** | **Indicator 3d1: Assessment of leadership skills and practices** | | 246 | 2.98 | 0.41 | 2.00 | 4.00 |
| **Task 4: Leadership for Family Engagement and Community Involvement** | **Rubric 4a: Plan to Promote Family and Community Involvement** | **Indicator 4a1: Investigation of the priority area** | | 243 | 2.95 | 0.31 | 2.00 | 4.00 |
| **Indicator 4a2: Investigation of work group engagement** | | 243 | 2.97 | 0.33 | 2.00 | 4.00 |
| **Indicator 4a3: Preparation of the plan, including strategies** | | 243 | 2.88 | 0.41 | 1.00 | 4.00 |
| **Rubric 4b: Implement an Engagement or Involvement Strategy** | **Indicator 4b1: Implementation of the strategy** | | 243 | 2.95 | 0.44 | 2.00 | 4.00 |
| **Rubric 4c: Analyze Feedback from Participants and Assess Leadership Skills** | **Indicator 4c1: Assessment and analysis of feedback on the family and community engagement plan and strategy** | | 243 | 2.93 | 0.45 | 1.50 | 4.00 |
| **Indicator 4c2: Assessment of leadership skills and practices** | | 234 | 2.93 | 0.55 | 1.00 | 4.00 |

During the 2016–2023 program years, candidates were required to achieve a higher composite average score (2.75) to pass than they were during the initial 2015–2016 program year (2.5). For this reason, the percentage of PAL completers who passed (and how well) continues to be evaluated at critical score ranges.

In program year 2021-2022, 6.3 percent of completers had scores that did not meet or exceed the total average composite PAL score level (2.75). Evaluation results in Table 7 show that 5.8 percent of completers had scores that did not meet or exceed the total average composite PAL score level for the 2022-2023 program year.

Table 7. Percentage Distribution of 2022-2023 PAL Completers by Total Average PAL Score

| **Score Range** | **Number** | **Percent** |
| --- | --- | --- |
| **Less than 2.50** | 1 | 0.4 |
| **2.50–2.74** | 13 | 5.4 |
| **2.75–2.99** | 118 | 49.0 |
| **3.00 and above** | 109 | 45.2 |
| **All Completers** | 241 | 100.0 |

The PAL completers’ total PAL scores were compared by preparation pathway, gender, and race/ethnicity, and the results are shown in Table 8. The overall mean was 2.97 (comparable to the 2021–2022 program year) with a 0.18 standard deviation. No significant differences were observed in task score or total score by preparation pathway, gender, or ethnicity.

Table 8. Descriptive Statistics of Total Scores by Demographic Attributes of 2022-2023 PAL Completers

|  | **Total Score** | | | | |
| --- | --- | --- | --- | --- | --- |
| **N** | **Mean** | **S.D.** | **Min** | **Max** |
| **All Completers** | 241 | 2.97 | 0.18 | 2.34 | 3.70 |
| **Preparation Pathway** | 161 | 2.98 | 0.17 | 2.34 | 3.70 |
| **Preparation Program** |
| **Alternative Pathway-Internship** | 67 | 2.96 | 0.18 | 2.52 | 3.54 |
| **Alternative Pathway-Panel Review** | 9 | 2.91 | 0.20 | 2.69 | 3.20 |
| **Out of State** | 4 | -- | -- | -- | -- |
| **Gender** | 44 | 2.89 | 0.19 | 2.34 | 3.20 |
| **Male** |
| **Female** | 193 | 2.99 | 0.17 | 2.58 | 3.70 |
| **Not Reported** | 4 | -- | -- | -- | -- |
| **Race/Ethnicity** | 0 | 0 | 0 | 0 | 0 |
| **NatAmer** |
| **Asian** | 6 | 2.81 | 0.13 | 2.58 | 2.94 |
| **Black** | 15 | 2.92 | 0.15 | 2.65 | 3.17 |
| **White** | 191 | 2.98 | 0.18 | 2.34 | 3.70 |
| **Hispanic** | 6 | 2.96 | 0.14 | 2.79 | 3.12 |
| **NatAmer/Latino** | 0 | 0 | 0 | 0 | 0 |
| **Asian/Latino** | 0 | 0 | 0 | 0 | 0 |
| **Black/Latino** | 4 | -- | -- | -- | -- |
| **Pacific** | 0 | 0 | 0 | 0 | 0 |
| **Pacific/Latino** | 0 | 0 | 0 | 0 | 0 |
| **White/Latino** | 5 | -- | -- | -- | -- |
| **Multiracial** | 3 | -- | -- | -- | -- |
| **Multiracial/Latino** | 3 | -- | - - | -- | -- |
| **Not reported** | 8 | 2.98 | 0.14 | 2.68 | 3.11 |

Next, we examined patterns of demographic attributes and candidate performance for all candidates. Findings showed candidates seeking licensure via panel review received lower scores on Task 1 compared to other pathways and out of state candidates.

**Table 9. Best Attempt Descriptive Statistics by Demographic Characteristic for All Takers Submitting Tasks in 2022-2023**

| Table 9. Best Attempt Descriptive Statistics by Demographic Characteristic for All Takers Submitting Tasks in 2022-2023 | **Task 1** | | | | | **Task 2** | | | | | **Task 3** | | | | | **Task 4** | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **N** | **Mean** | **S.D.** | **Min** | **Max** | **N** | **Mean** | **S.D.** | **Min** | **Max** | **N** | **Mean** | **S.D.** | **Min** | **Max** | **N** | **Mean** | **S.D.** | **Min** | **Max** |
| **All Takers** | 283 | 2.98 | 0.28 | 1.77 | 4.00 | 264 | 2.99 | 0.26 | 1.66 | 4.00 | 246 | 3.03 | 0.23 | 2.12 | 3.87 | 243 | 2.94 | 0.31 | 1.83 | 4.00 |
| **Preparation Pathway** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Preparation Program** | 173 | 2.98 | 0.25 | 2.00 | 3.77 | 170 | 2.99 | 0.28 | 1.66 | 4.00 | 160 | 3.02 | 0.23 | 2.12 | 3.87 | 158 | 2.94 | 0.27 | 2.00 | 4.00 |
| **Alternative Pathway-Internship** | 97 | 2.97 | 0.31 | 1.77 | 3.88 | 77 | 3.00 | 0.24 | 1.83 | 3.66 | 74 | 3.04 | 0.25 | 2.54 | 3.79 | 72 | 2.93 | 0.36 | 2.11 | 4.00 |
| **Alternative Pathway-Panel Review** | 6 | 2.84 | 0.22 | 2.50 | 3.00 | 10 | 2.95 | 0.22 | 2.50 | 3.33 | 6 | 3.08 | 0.12 | 2.95 | 3.25 | 8 | 2.80 | 0.50 | 1.83 | 3.61 |
| **Out of State** | 7 | 3.24 | 0.46 | 2.72 | 4.00 | 7 | 3.00 | 0.32 | 2.66 | 3.66 | 6 | 3.06 | 0.15 | 2.87 | 3.25 | 5 | 3.03 | 0.07 | 3.00 | 3.16 |
| **Gender** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Male** | 53 | 2.90 | 0.32 | 1.77 | 3.38 | 52 | 2.97 | 0.19 | 2.33 | 3.50 | 40 | 2.99 | 0.21 | 2.58 | 3.58 | 46 | 2.82 | 0.32 | 2.00 | 3.33 |
| **Female** | 225 | 3.00 | 0.27 | 2.11 | 4.00 | 207 | 3.00 | 0.28 | 1.66 | 4.00 | 202 | 3.03 | 0.24 | 2.12 | 3.87 | 192 | 2.97 | 0.30 | 1.83 | 4.00 |
| **Nonbinary** | 1 | -- | -- | -- | -- | 1 | -- | -- | -- | -- | 1 | -- | -- | -- | -- | 0 | 0 | 0 | 0 | 0 |
| **Not Reported** | 4 | -- | -- | -- | -- | 4 | -- | -- | -- | -- | 3 | -- | -- | -- | -- | 5 | -- | -- | -- | -- |
| **Race/Ethnicity** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **NatAmer** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Asian** | 3 | -- | -- | -- | -- | 3 | -- | -- | -- | -- | 3 | -- | -- | -- | -- | 5 | -- | -- | -- | -- |
| **Black** | 19 | 2.91 | 0.19 | 2.44 | 3.33 | 17 | 2.92 | 0.19 | 2.50 | 3.16 | 19 | 3.04 | 0.23 | 2.75 | 3.54 | 13 | 2.95 | 0.41 | 1.83 | 3.55 |
| **White** | 226 | 2.98 | 0.29 | 1.77 | 4.00 | 206 | 3.01 | 0.27 | 1.66 | 4.00 | 196 | 3.03 | 0.24 | 2.12 | 3.87 | 194 | 2.94 | 0.30 | 2.00 | 4.00 |
| **Hispanic** | 8 | 3.02 | 0.16 | 2.77 | 3.30 | 7 | 2.83 | 0.29 | 2.33 | 3.16 | 5 | -- | -- | -- | -- | 9 | 3.03 | 0.24 | 2.61 | 3.50 |
| **NatAmer/Latino** | 0 | 0 | 0 | 0 | 0 | 1 | -- | - - | -- | -- | 1 | -- | - - | -- | -- | 1 | -- | - - | -- | -- |
| **Asian/Latino** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Black/Latino** | 3 | -- | - - | -- | -- | 4 | -- | -- | -- | -- | 6 | 2.81 | 0.10 | 2.75 | 3.00 | 4 | -- | -- | -- | -- |
| **Pacific** | 1 | -- | -- | -- | -- | 1 | -- | -- | -- | -- | 1 | -- | -- | -- | -- | 0 | 0 | 0 | 0 | 0 |
| **Pacific/Latino** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **White/Latino** | 8 | 3.07 | 0.15 | 2.88 | 3.33 | 5 | -- | -- | -- | -- | 4 | -- | -- | -- | -- | 4 | -- | -- | -- | -- |
| **Multiracial** | 1 | -- | - - | -- | -- | 2 | -- | -- | -- | -- | 2 | -- | -- | -- | -- | 2 | -- | -- | -- | -- |
| **Multiracial/Latino** | 3 | -- | - - | -- | -- | 6 | 2.93 | 0.17 | 2.66 | 3.16 | 3 | -- | -- | -- | -- | 3 | -- | -- | -- | -- |
| **Not reported** | 11 | 3.18 | 0.21 | 2.83 | 3.47 | 13 | 3.00 | 0.17 | 2.66 | 3.33 | 7 | 3.08 | 0.09 | 3.00 | 3.25 | 9 | 2.90 | 0.17 | 2.50 | 3.00 |

Task scores for the 2022-2023 program year were correlated to evaluate the degree of association among the tasks. As was the case for the 2021-2022 program year, the four factors are moderately and positively correlated. Task 1 and Task 3 were the most strongly correlated for program year 2022-2023 (r=0.35056, N=160). Task 1 and Task 2 exhibited the weakest task-based correlation (r=0.21433, N=158) for program year 2022-2023.

| Table 10. Factor Correlation for 2022–2023 PAL Tasks **Pearson Correlation Coefficients** **Prob > |r| under H0: Rho=0** **Number of Observations** | | | | |
| --- | --- | --- | --- | --- |
|  | **Task1** | **Task2** | **Task3** | **Task4** |
| **Task1** | 1.00000  (283) | 0.21433  (158) | 0.35056  (160) | 0.33293  (135) |
| **Task2** | 0.21433  (158) | 1.00000 (264) | 0.25910  (159) | 0.29245  (169) |
| **Task3** | 0.35056  (160) | 0.25910  (159) | 1.00000 (246) | 0.29850  (164) |
| **Task4** | 0.33293  (135) | 0.29245  (169) | 0.29850  (164) | 1.00000 (243) |

Note: All correlation coefficients are significant at the p < .00068 level. N are indicated in parentheses.

The PAL completer results are positive for program year 2022-2023 with an overall pass rate of 94%. This performance is comparable to prior program years’ performance. Significance testing indicated some differences by task and by total score. Females had statistically significant higher mean score on Task 4 compared to males. There were no significant differences on task scores by ethnicity or pathway. Across all tasks, females had higher mean scores compared males. No significant differences in total score performance were observed across ethnicity or pathway.

The number of completers for program year 2022-2023 (N=241), increased slightly from program year 2021-2022 (N=226). Correlations of candidate scores between tasks show that these tasks continue to be independent measures with modest degrees of association, with the strongest being between Tasks 1 and 3 and the weakest being between Tasks 1 and 2.

Cronbach’s alpha is a measure of internal consistency of raw test scores, an important characteristic of test scores that indicates the extent to which the items of the assessment measure the intended common construct (Cronbach, 1951). Cronbach’s alpha estimates range from zero to one, and higher values reflect higher levels of consistency of a person’s scores across the items (rubrics). Task-level Alpha Estimates are presented in Table 11.

Table 11. Alpha by Task

| **Task** | **Alpha** |
| --- | --- |
| 1 | 0.60848 |
| 2 | 0.42875 |
| 3 | 0.89622 |
| 4 | 0.81999 |

## Scoring Agreement

Scoring agreement was determined using submissions that were scored by two scorers, and the results were used to estimate scoring reliability. Exact agreement rates (scorers assigning the same exact score) were calculated for each indicator.

Table 12 presents the results of the rater agreement and kappa-N statistics calculated using percent exact agreement only. The kappa n provides chance-corrected total agreement, or inter-rater agreement measures, that result from removing total agreement that may have occurred randomly (Brennan & Prediger, 1981). Chance-corrected agreement ranges from zero to one, with higher values representing greater levels of agreement. The table below shows that kappa-N ranged from 0.59 (indicator 4c.2) to 0.88 (indicator 4a.2). Exact agreement rates, indicating the percentage of cases where scorers scoring the same portfolio assigned the same score, are at or above 70% on all indicators.

In addition to examining rater agreement at exact and adjacent, agreement was also reviewed by indicator as a grouping to see the percent of agreement where both scorer 1 and scorer 2 were either at or below 2 or at or above 3. This directionality helps to identify indicators that may not otherwise appear to clearly discern between critical score points, and indicators where there is more of a disparity between raters. Agreement rates, as shown in Table 12, indicate that independent scorers scoring the same submission tend to assign the same directionality (both scores are 2 or below or both scores are 3 or above) more often than they agree exactly. Rubric 4c.2 has the lowest combination of agreement between both exact agreement and directional agreement.

Table 12. Rater Agreement, Inter-rater Reliability, and Agreement Directionality by Indicator

|  | **N of Items Scored** | **Rater Agreement** | | |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Percent Agreement** | **Percent Exact** | **Percent Adjacent** | **Inter-rater Reliability** | **kappa-N** | **Both scorers <2 or >3** |
| **Indicator** | 35 | 1.00 | 0.69 | 0.31 | 0.25 | 0.58 | .  .94 |
| **1a.1** |
| **1a.2** | 35 | 1.00 | 0.74 | 0.26 | 0.29 | 0.66 | .91 |
| **1a.3** | 35 | 1.00 | 0.86 | 0.14 | 0.76 | 0.81 | .94 |
| **1b.1** | 35 | 1.00 | 0.71 | 0.29 | 0.30 | 0.62 | .91 |
| **1b.2** | 35 | 1.00 | 0.86 | 0.14 | 0.02 | 0.81 | .94 |
| **1b.3** | 35 | 1.00 | 0.74 | 0.26 | 0.46 | 0.66 | .94 |
| **1c.1** | 35 | 1.00 | 0.71 | 0.29 | 0.40 | 0.62 | .97 |
| **1c.2** | 35 | 1.00 | 0.74 | 0.26 | 0.58 | 0.66 | .94 |
| **2a.1** | 31 | 1.00 | 0.87 | 0.13 | 0.43 | 0.83 | 1.00 |
| **2a.2** | 31 | 1.00 | 0.87 | 0.13 | 0.48 | 0.83 | .97 |
| **2b.1** | 31 | 1.00 | 0.77 | 0.23 | 0.45 | 0.70 | .97 |
| **2b.2** | 31 | 1.00 | 0.61 | 0.39 | 0.51 | 0.48 | .87 |
| **2c.1** | 31 | 1.00 | 0.77 | 0.23 | 0.03 | 0.70 | .90 |
| **2c.2** | 31 | 1.00 | 0.74 | 0.26 | 0.51 | 0.66 | .90 |
| **3a.1** | 32 | 1.00 | 0.72 | 0.28 | 0.64 | 0.63 | .94 |
| **3a.2** | 32 | 1.00 | 0.91 | 0.09 | 0.87 | 0.88 | .94 |
| **3b.1** | 32 | 1.00 | 0.88 | 0.13 | 0.68 | 0.83 | .94 |
| **3b.2** | 32 | 1.00 | 0.91 | 0.09 | 0.02 | 0.88 | .97 |
| **3c.1** | 32 | 1.00 | 0.94 | 0.06 | 0.65 | 0.92 | 1.00 |
| **3c.2** | 32 | 1.00 | 0.75 | 0.25 | 0.76 | 0.67 | .91 |
| **3c.3** | 32 | 1.00 | 0.78 | 0.22 | 0.55 | 0.71 | .81 |
| **3d.1** | 32 | 1.00 | 0.78 | 0.22 | 0.73 | 0.71 | .81 |
| **4a.1** | 46 | 1.00 | 0.87 | 0.13 | 0.56 | 0.83 | .91 |
| **4a.2** | 46 | 0.98 | 0.87 | 0.11 | 0.00 | 0.83 | .91 |
| **4a.3** | 46 | 1.00 | 0.93 | 0.07 | 0.87 | 0.91 | .93 |
| **4b.1** | 46 | 1.00 | 0.78 | 0.22 | 0.65 | 0.71 | .85 |
| **4c.1** | 46 | 0.96 | 0.83 | 0.13 | 0.69 | 0.77 | .91 |
| **4c.2** | 46 | 1.00 | 0.80 | 0.20 | 0.78 | 0.74 | .91 |

To further explore the distribution of scores assigned to each indicator, four x four contingency tables were created for each indicator and are found in Appendix A. These tables illustrate, for each indicator, the distribution of score points assigned by both scorers across the 1 to 4 scale. These tables provide detailed information on the percent agreement at each combination of score points.

Additionally, rater agreement was examined at the critical threshold of passing/failing (Task Score of 2.1), in order to explore decision consistency by task between scorer 1 and scorer 2. Table 13 indicates the percent agreement between Scorer 1 and Scorer 2’s total indicator scores in relation to the total task score of 2—outlining the consistency of a final task outcome of pass or fail. Consistency ranges from 97% (Task 3) to 100% (Tasks 1, 2, and 4). These agreements are before any adjudication by a scoring supervisor, and the scoring model does indicate that if Scorer 1 and Scorer 2 are on opposite sides of the task threshold score (2.1), the task is adjudicated by a scoring supervisor who scores the entire task submission.

Table 13. Rater Agreement and Decision Consistency by Task

|  |  |  |
| --- | --- | --- |
| **Task 1 Decision Consistency Between Scorers at Task Score 2.1 (%)** | | |
|  | Scorer 1 Pass | Scorer 1 Fail |
| Scorer 2 Pass | 100 | 0 |
| Scorer 2 Fail | 0 | 0 |

|  |  |  |
| --- | --- | --- |
| **Task 2 Decision Consistency Between Scorers at Task Score 2.1 (%)** | | |
|  | Scorer 1 Pass | Scorer 1 Fail |
| Scorer 2 Pass | 100 | 0 |
| Scorer 2 Fail | 0 | 0 |

|  |  |  |
| --- | --- | --- |
| **Task 3 Decision Consistency Between Scorers at Task Score 2.1 (%)** | | |
|  | Scorer 1 Pass | Scorer 1 Fail |
| Scorer 2 Pass | 97 | 3 |
| Scorer 2 Fail | 0 | 0 |

|  |  |  |
| --- | --- | --- |
| **Task 4 Decision Consistency Between Scorers at Task Score 2.1 (%)** | | |
|  | Scorer 1 Pass | Scorer 1 Fail |
| Scorer 2 Pass | 100 | 0 |
| Scorer 2 Fail | 0 | 0 |

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# Appendix A

### Score Distributions (Percent Agreement) between Scorer 1 and Scorer 2, by Indicator

#### TASK 1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 1 Indicator 1a1 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 11.43 | 0 |
| 3 | 0 | 0 | 65.71 | 14.29 |
| 2 | 0 | 2.86 | 5.71 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 1 Indicator 1a2 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 5.71 | 2.86 |
| 3 | 0 | 0 | 71.43 | 11.43 |
| 2 | 0 | 0 | 8.57 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 1 Indicator 1a3 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 2.86 | 8.57 |
| 3 | 0 | 0 | 74.29 | 5.71 |
| 2 | 0 | 2.86 | 5.71 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 1 Indicator 1b1 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 5.71 | 0 |
| 3 | 0 | 0 | 68.57 | 14.29 |
| 2 | 0 | 2.86 | 8.57 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 1 Indicator 1b2 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 0 | 0 |
| 3 | 0 | 5.71 | 85.71 | 8.57 |
| 2 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 1 Indicator 1b3 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 5.71 | 2.86 |
| 3 | 0 | 5.71 | 68.57 | 14.29 |
| 2 | 0 | 2.86 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 1 Indicator 1c1 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 5.71 | 2.86 |
| 3 | 0 | 2.86 | 65.71 | 20.00 |
| 2 | 0 | 2.86 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 1 Indicator 1c2 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 11.43 | 2.86 |
| 3 | 0 | 2.86 | 65.71 | 8.57 |
| 2 | 0 | 5.71 | 2.86 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

#### TASK 2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 2 Indicator 2a1 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 9.68 | 3.23 |
| 3 | 0 | 0 | 83.87 | 3.23 |
| 2 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 2 Indicator 2a2 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 3.23 | 3.23 |
| 3 | 0 | 3.23 | 83.87 | 6.45 |
| 2 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 2 Indicator 2b1 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 12.90 | 6.45 |
| 3 | 0 | 0 | 70.97 | 6.45 |
| 2 | 0 | 0 | 3.23 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 2 Indicator 2b2 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 19.35 | 0 |
| 3 | 0 | 6.45 | 51.61 | 6.45 |
| 2 | 0 | 9.68 | 6.45 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 2 Indicator 2c1 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 9.68 | 0 |
| 3 | 0 | 6.45 | 77.42 | 3.23 |
| 2 | 0 | 0 | 3.23 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 2 Indicator 2c2 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 6.45 | 0 |
| 3 | 0 | 0 | 74.19 | 6.45 |
| 2 | 0 | 0 | 9.68 | 0 |
| 1 | 0 | 3.23 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

#### TASK 3

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 3 Indicator 3a1 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 6.25 | 6.25 |
| 3 | 0 | 3.13 | 59.38 | 15.63 |
| 2 | 0 | 6.25 | 3.13 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 3 Indicator 3a2 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 3.13 | 9.38 |
| 3 | 0 | 3.13 | 75.00 | 0 |
| 2 | 0 | 6.25 | 3.13 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 3 Indicator 3b1 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 0 | 3.13 |
| 3 | 0 | 6.25 | 81.25 | 6.25 |
| 2 | 0 | 3.13 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 3 Indicator 3b2 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 0 | 0 |
| 3 | 0 | 3.13 | 90.63 | 6.25 |
| 2 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 3 Indicator 3c1 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 0 | 3.13 |
| 3 | 0 | 0 | 90.63 | 6.25 |
| 2 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 3 Indicator 3c2 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 3.13 | 6.25 |
| 3 | 0 | 3.13 | 65.63 | 12.5 |
| 2 | 0 | 0 | 6.25 | 0 |
| 1 | 3.13 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 3 Indicator 3c3 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 3.13 | 0 |
| 3 | 0 | 3.13 | 68.75 | 0 |
| 2 | 0 | 9.38 | 15.63 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 3 Indicator 3d1 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 3.13 | 6.25 |
| 3 | 0 | 6.25 | 62.50 | 0 |
| 2 | 0 | 9.38 | 12.50 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

#### TASK 4

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 4 Indicator 4a1 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 4.35 | 0 |
| 3 | 0 | 2.17 | 82.61 | 0 |
| 2 | 0 | 4.35 | 6.52 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 4 Indicator 4a2 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 2.17 | 4.35 | 0 |
| 3 | 0 | 4.35 | 84.78 | 0 |
| 2 | 0 | 2.17 | 2.17 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 4 Indicator 4a3 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 0 | 0 |
| 3 | 0 | 2.17 | 80.43 | 0 |
| 2 | 0 | 13.04 | 4.35 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 4 Indicator 4b1 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 6.52 | 2.17 |
| 3 | 0 | 6.52 | 67.39 | 0 |
| 2 | 0 | 8.70 | 8.70 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 4 Indicator 4c1 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 2.17 | 4.35 | 4.35 |
| 3 | 0 | 2.17 | 65.22 | 2.17 |
| 2 | 2.17 | 13.04 | 2.17 | 2.17 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Joint Score Distribution for Task 4 Indicator 4c2 (%)** | | | | | |
| Scorer 1 | 4 | 0 | 0 | 4.35 | 4.35 |
| 3 | 0 | 4.35 | 63.04 | 6.52 |
| 2 | 0 | 13.04 | 4.35 | 0 |
| 1 | 0 | 0 | 0 | 0 |
|  | | 1 | 2 | 3 | 4 |
| Scorer 2 | | | |