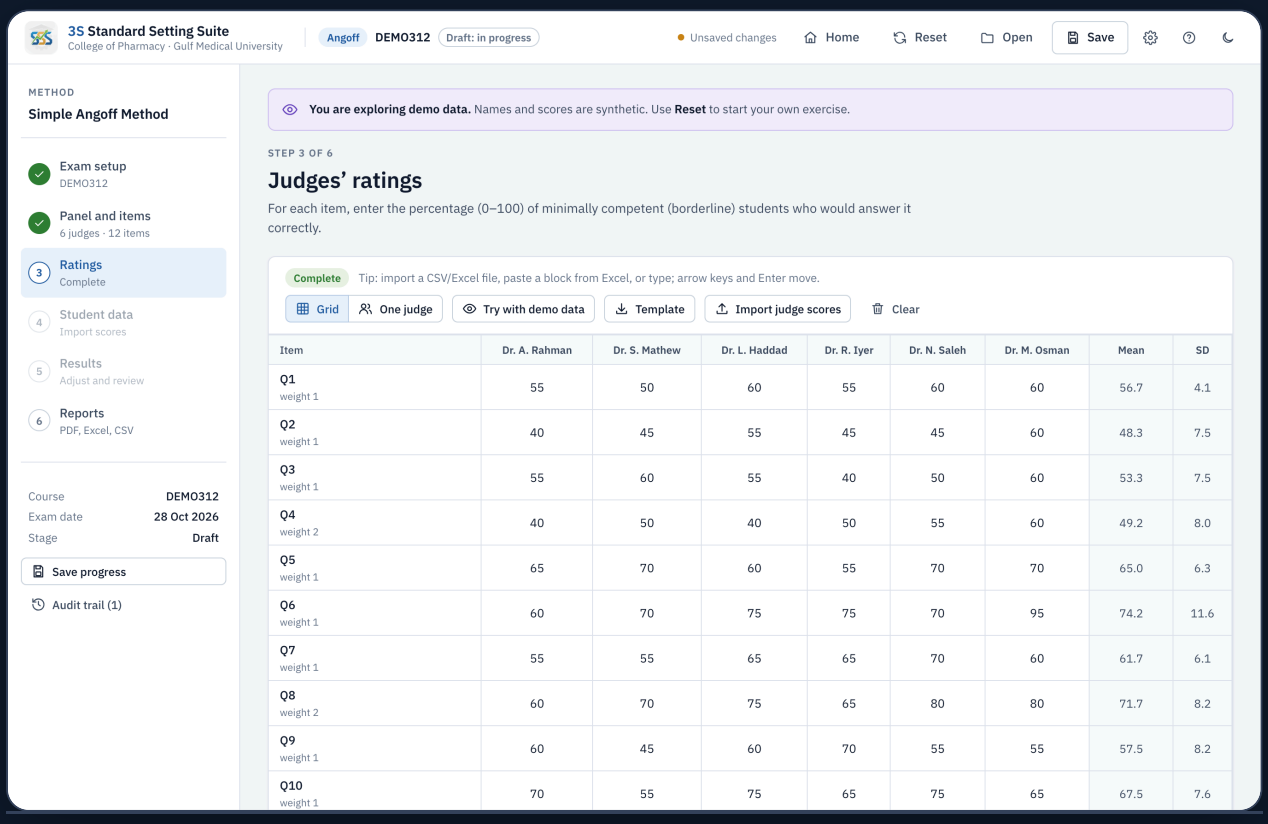
USER MANUAL · VERSION 5.2

3S Standard Setting Suite

Defensible pass marks, set with confidence.
A step-by-step guide to every function, with screenshots.



Item	Dr. A. Rahman	Dr. S. Mathew	Dr. L. Haddad	Dr. R. Iyer	Dr. N. Saleh	Dr. M. Osman	Mean	SD
Q1 weight 1	55	50	60	55	60	60	56.7	4.1
Q2 weight 1	40	45	55	45	45	60	48.3	7.5
Q3 weight 1	55	60	55	40	50	60	53.3	7.5
Q4 weight 2	40	50	40	50	55	60	49.2	8.0
Q5 weight 1	65	70	60	55	70	70	65.0	6.3
Q6 weight 1	60	70	75	75	70	95	74.2	11.6
Q7 weight 1	55	55	65	65	70	60	61.7	6.1
Q8 weight 2	60	70	75	65	80	80	71.7	8.2
Q9 weight 1	60	45	60	70	55	55	57.5	8.2
Q10 weight 1	70	55	75	65	75	65	67.5	7.6

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About this manual Screenshots show version 5.2 with synthetic demo data. Concept and methodology: Dr. Muhammad AlShorbagy, College of Pharmacy, Gulf Medical University.

1 Welcome to 3S

The 3S Standard Setting Suite turns judges' ratings and student scores into a defensible pass mark, adjusts every student's mark accordingly, and produces board-ready reports, all inside your web browser.

What 3S does

Standard setting answers one question: **what score separates a competent student from one who is not yet competent on this particular exam?** 3S supports five recognised methods, guides you through each one step by step, records every decision in an audit trail and prints the evidence your examination board and accreditors expect.

Method	Best for	Evidence used
Simple Angoff	MCQ with fewer than 30 students; SAQ, essays, case-based and postgraduate papers	Judges estimate, item by item, the percentage of borderline students who would answer correctly
EZ (Equal Z)	Practical and skills exams, OSPE and OSCE stations	Judges give the highest failing (L) and lowest passing (H) score for every station
Modified Cohen	MCQ / SBA / EMQ papers with 30 or more students	Student scores: the score of the 90th-percentile student
Borderline Regression	OSCEs where examiners record a global rating	Student station scores regressed on examiner global ratings
Hofstee	A reality check for any format with a score distribution	Judges' acceptable ranges for the cut score and fail rate, plus student scores

Privacy and requirements

- **Nothing to install.** 3S is a single file, `SS Suite_V5.2.html`. Double-click it to open it in your browser.
- **Private by design.** Ratings, student data and reports never leave your computer; the page is technically blocked from making network requests.
- **Browser.** A recent Google Chrome or Microsoft Edge is recommended (Safari and Firefox also work).
- **Works everywhere.** Computers, tablets and phones; light and dark themes.

How to read this manual

Screenshots carry **numbered amber markers**. The numbered list under each figure explains what each marker points to. Boxes like the ones below highlight tips, important points and things to try.

> **Try it** Every method can be explored with synthetic data: choose the method on Exam Setup and click **Try with demo data**.

> **Tip** Use **Save** often. It downloads a session file you can reopen later on any computer.

2 The workspace at a glance

Everything happens on one screen: a top bar for files and settings, a step menu on the left and the current step in the middle.

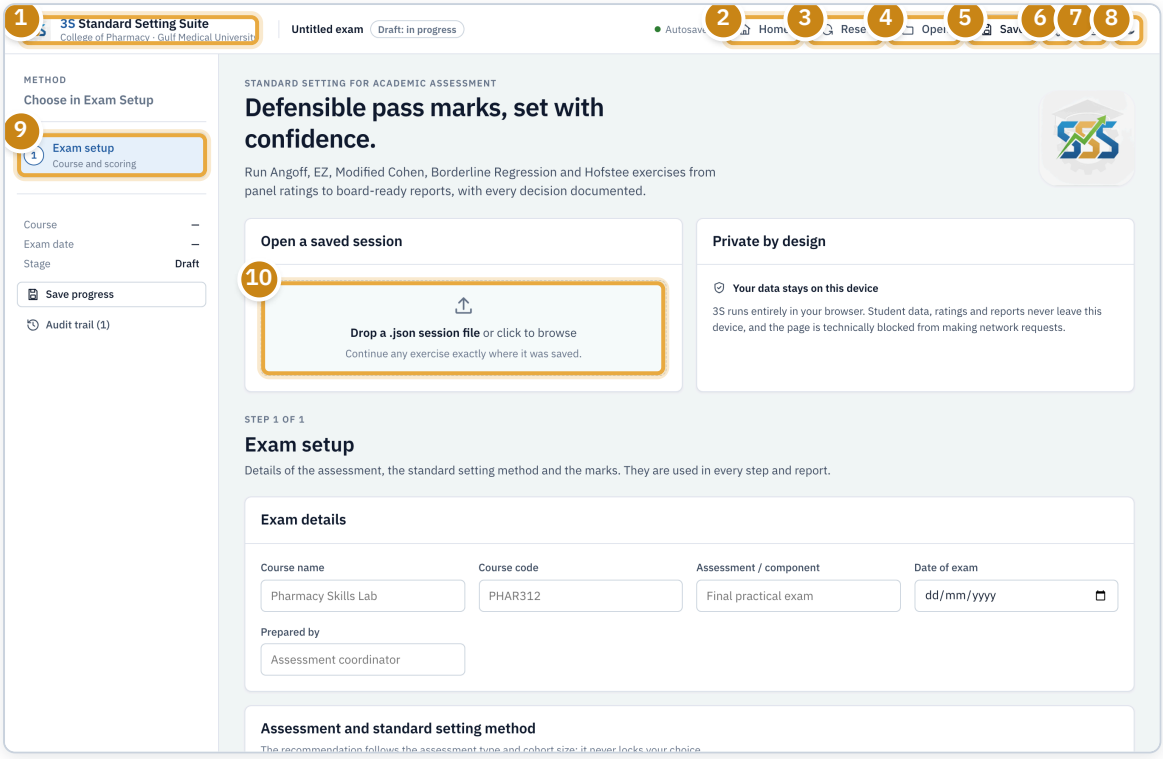


Figure 1. The Home page is the Exam Setup step of the current exercise.

1. **3S logo**: returns to the Home page (Exam Setup).
2. **Home**: same as the logo, from any step.
3. **Reset**: closes the current exercise and starts a fresh one (asks first).
4. **Open**: opens a saved session file (.json).
5. **Save**: downloads the exercise as a session file.
6. **Settings**: institutional policy, scaling, report options.
7. **Help**: method explanations, file formats, glossary and the self-check.
8. **Light / dark** theme switch.
9. **Step menu**: the steps of the chosen method; a green tick marks a completed step.
10. **Open a saved session**: click to browse, or drop a .json file anywhere on the page.

Steps for each method

Method	Steps in the left menu
Simple Angoff, EZ	Exam setup › Panel and items/stations › Ratings › Student data › Results › Reports
Modified Cohen, Borderline Regression	Exam setup › Student data › Results › Reports
Hofstee	Exam setup › Panel › Panel judgements › Student data › Results › Reports

- A step that is not yet available is greyed out; hover over it to see why (for example “Approve the cut score first”).
- The **Back** button of your browser moves back through the steps you visited and never leaves 3S.

3 Quick start: a complete exercise in ten minutes

Use the built-in demo data to see every step of a Simple Angoff exercise before running your own.

1. Open `SS Suite_V5.2.html`. The **Exam Setup** page appears.
2. Under **Assessment and standard setting method**, choose **SAQ** and **< 30 students**. Simple Angoff is selected and labelled **Recommended**.
3. Click **Try with demo data**. Exam details, six named judges, twelve items and their ratings are filled in. A violet banner reminds you that the data is synthetic.
4. Open **Ratings** in the left menu. Scroll below the grid to the **Cut score** panel and click **Approve cut score**; type a name such as “Assessment Committee”.
5. Click **Export Stage 1** to save the approved cut score (optional), then **Continue to student data**.
6. Click **Try with demo data** in the Student data step to load a demo class list, then open **Results**.
7. Explore the score adjustment options, the distribution chart and the student table.
8. In Student data, click **Try a sample supplementary list (with resits)** and import it to see how resit students are handled.
9. Open **Reports** and preview the **Standard Setting & Exam Board Report** and the **Student Results Report**.
10. Click **Reset** to return to a blank exercise when you are ready to start your own.

> **Try it** Every method has demo data. Repeat the quick start with EZ, Modified Cohen, Borderline Regression and Hofstee to see how each one works.

4 Exam Setup (Home page)

Describe the exam once. These details and marks are used in every step, calculation and report.

Exam details

Enter the course name and code, the assessment or component, the date of the exam and who prepared the exercise. All fields appear on the report cover and headers.

Assessment type, cohort size and method

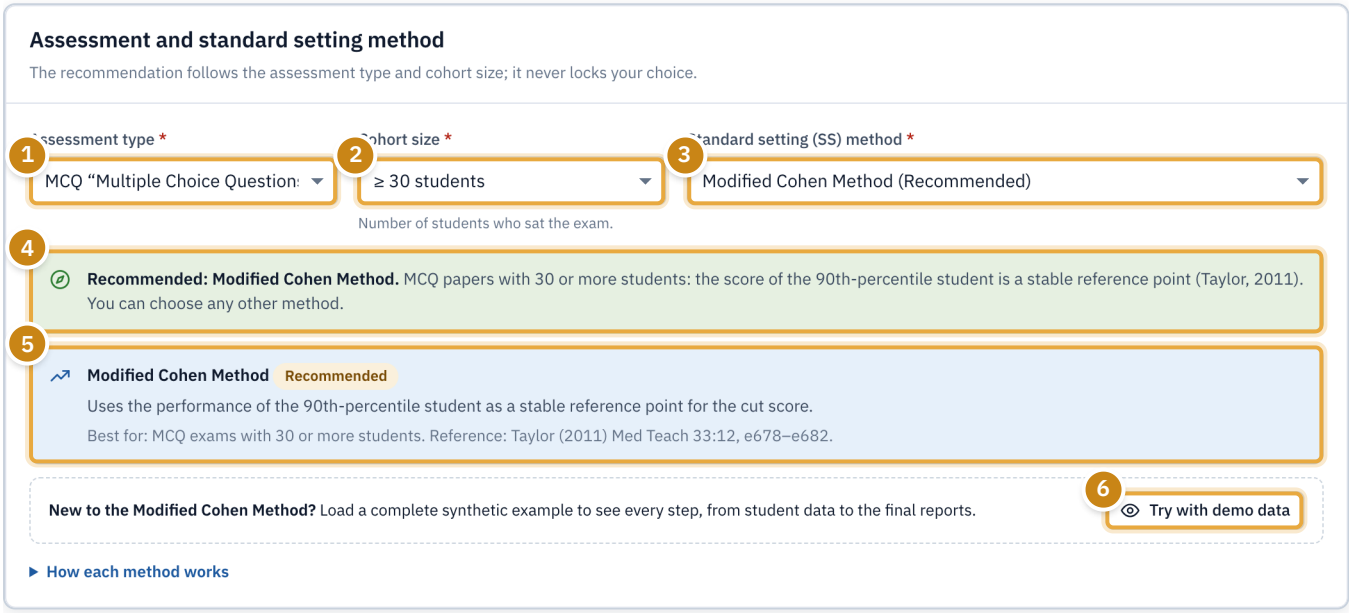


Figure 2. Choosing the assessment type and cohort size produces a recommended method.

1. **Assessment type**: MCQ, SBA, SAQ, Essay, EMQ, OSPE, OSCE or Others.
2. **Cohort size**: ≥ 30 or < 30 students.
3. **Standard setting (SS) method**: the recommended method is marked “(Recommended)”.
4. **Recommendation** and the reason for it.
5. **Description** of the selected method, what it is best for and its reference.
6. **Try with demo data** for the selected method.

Assessment type	Cohort size	Recommended method
MCQ, SBA, EMQ	≥ 30	Modified Cohen
MCQ, SBA, EMQ	< 30	Simple Angoff
SAQ, Essay	Any	Simple Angoff
OSPE, OSCE	Any	EZ (Borderline Regression also suitable for ≥ 30 when examiners record global ratings)
Others	Any	Simple Angoff

While you have not chosen a method yourself, 3S follows the recommendation as you change the assessment type or cohort size. The rules can be adapted in **Settings › Method selection rules**.

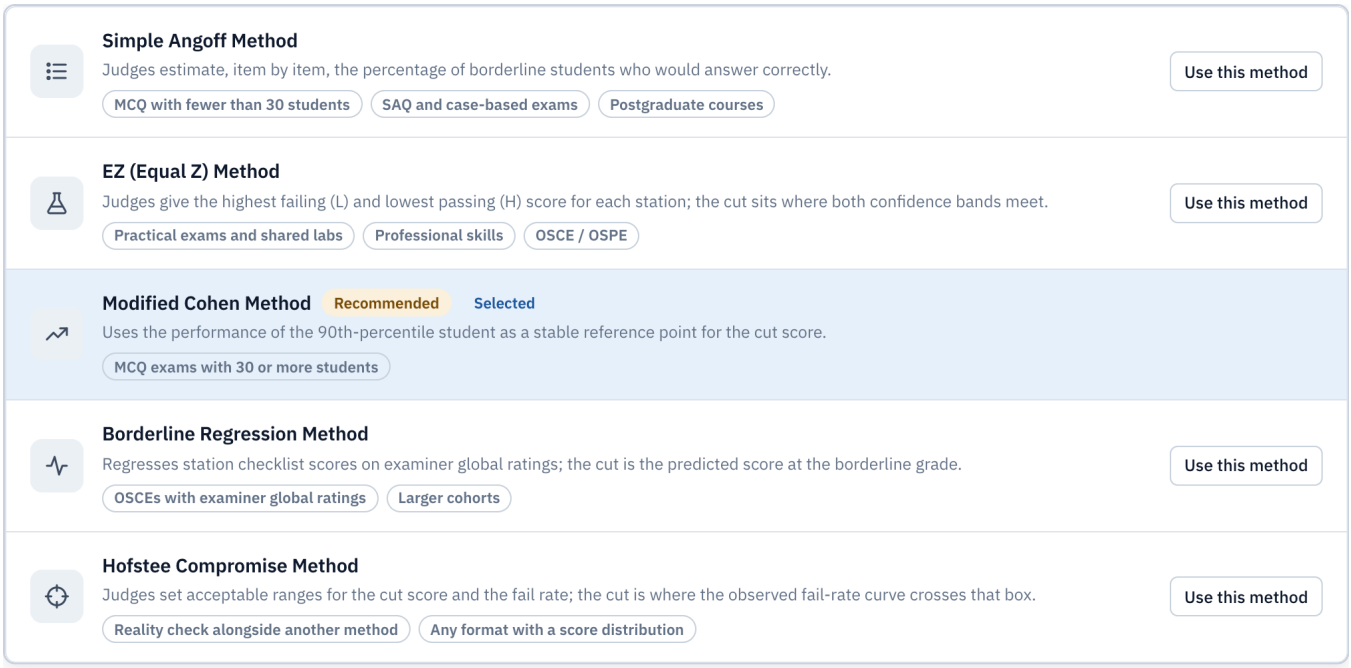


Figure 3. "How each method works" compares all five methods; **Use this method** selects one.

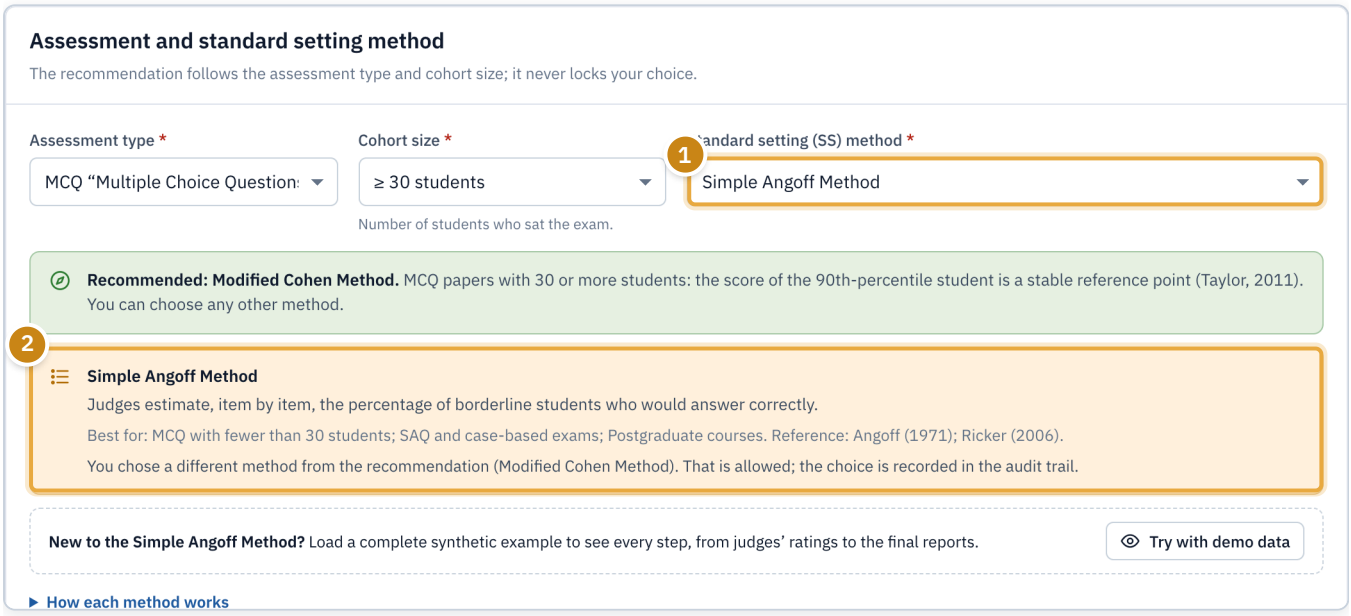


Figure 4. Choosing a different method is allowed and noted.

1. The method you chose.
2. A note that it differs from the recommendation; the choice is recorded in the audit trail.

Important Changing the method after ratings or students were entered asks for confirmation and clears that method-specific data. Exam details and judge names are kept.

Scoring



Figure 5. Total exam points, total exam mark and institutional cut score are entered only here.

1. **Total exam points**: the maximum raw points in the student file (for Borderline Regression, the sum of the station maximums).
2. **Total exam mark**: the maximum mark of the exam. Points are converted to this scale; when both totals are equal, marks equal points.
3. **Institutional cut score**: your institution's default pass mark (%).

Angoff and EZ also offer **Rating rounds** (one or two) on this page, and Angoff lets judges rate as a percentage (0–100) or a probability (0–1). Borderline Regression asks for the global rating scale and the borderline grade.

Required fields

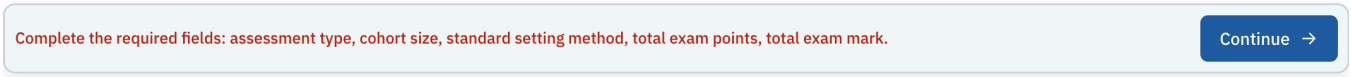


Figure 6. Continue lists any required field still missing.

Opening and resuming

- **Open a saved session**: drop a .json file on the Home page or click the box (or **Open** in the top bar).
- **Resume**: when 3S opens and an autosaved exercise exists, Exam Setup offers to resume it. Starting a new exercise replaces that autosave.

5 Panel: judges and items

List the judges and the items or stations they will rate (Angoff, EZ) or the judges giving Hofstee judgements.

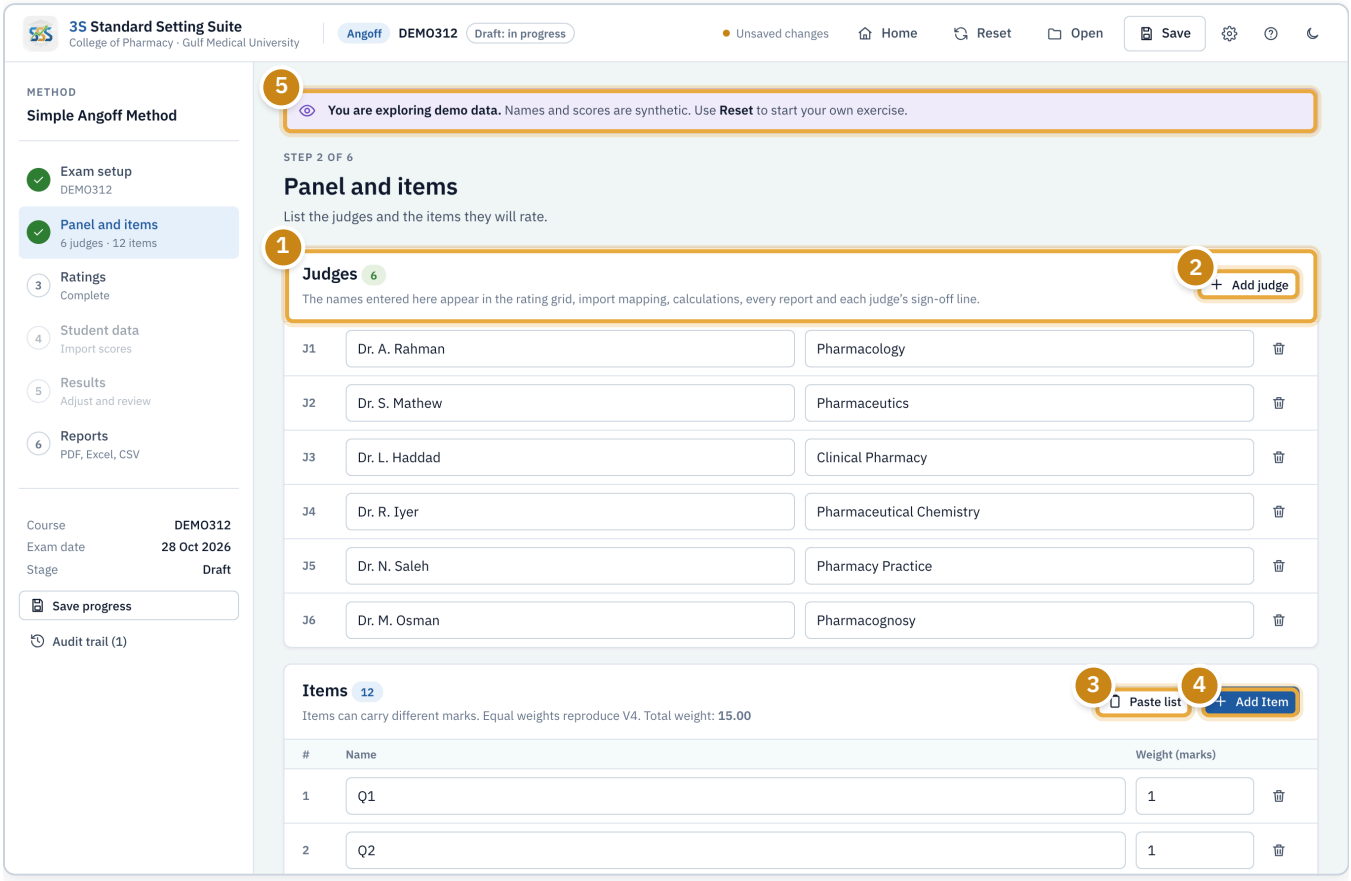


Figure 7. The Panel step of a Simple Angoff exercise (demo data).

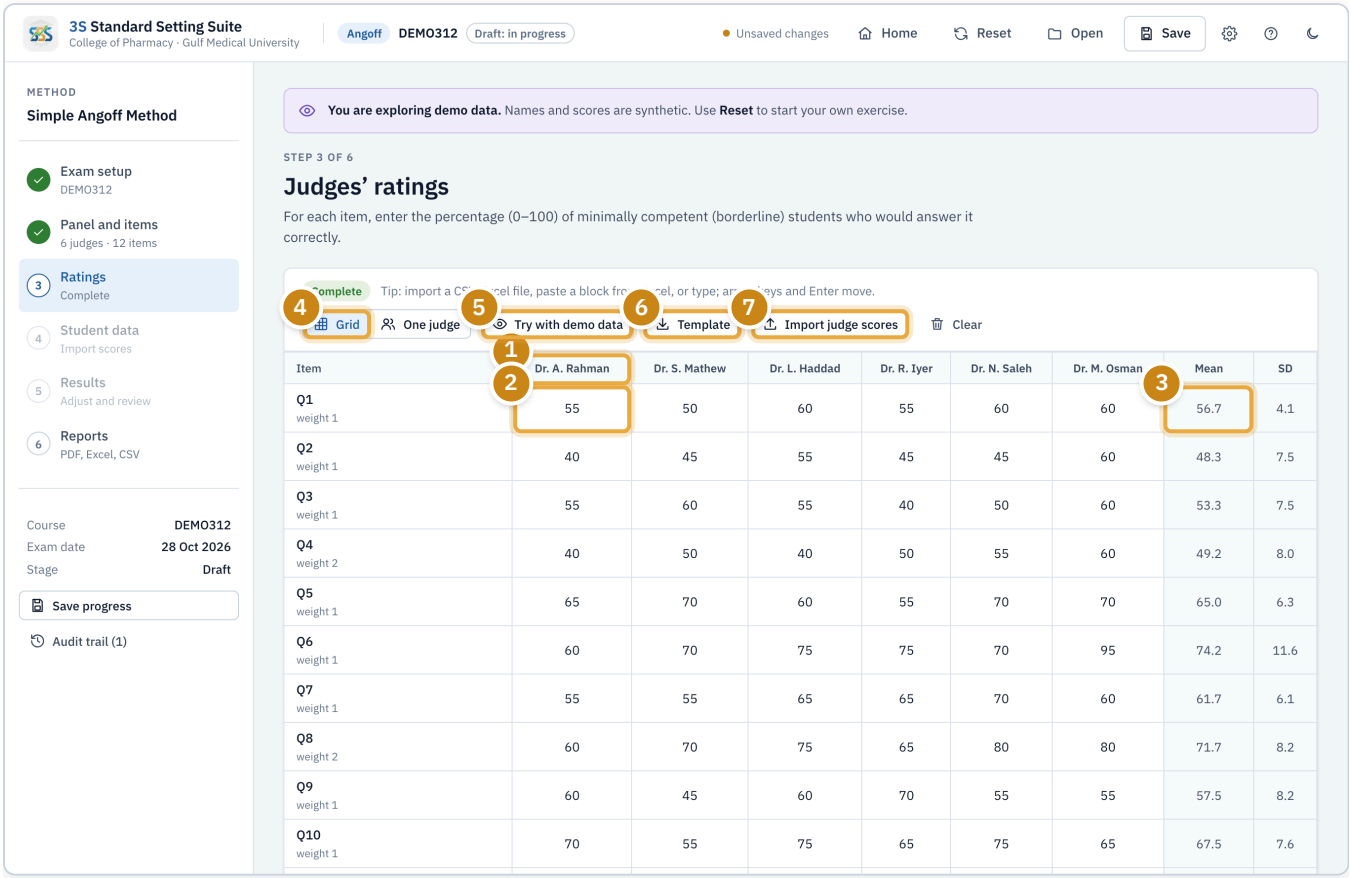
1. Judges and their roles; names appear in every grid, table, report and sign-off line.
2. **Add judge**.
3. **Paste list**: paste item names (and weights) straight from Excel.
4. **+ Add Item** (or Station for EZ).
5. The demo-data banner.

- A new exercise starts with **one item**; add more with **+ Add Item**.
- **Angoff weights**: items can carry different marks; equal weights give the classic calculation.
- **EZ maximum scores**: each station is rated on its own scale (100 by default).
- The policy minimum is **5 judges**. With fewer, the calculation is blocked (or only warned about, depending on Settings).
- The step is ticked as complete when every judge has a name.

6 Ratings and the cut score

Enter or import the judges' ratings, review the calculated cut score and approve it.

Entering ratings



Item	Dr. A. Rahman	Dr. S. Mathew	Dr. L. Haddad	Dr. R. Iyer	Dr. N. Saleh	Dr. M. Osman	Mean	SD
Q1 weight 1	55	50	60	55	60	60	56.7	4.1
Q2 weight 1	40	45	55	45	45	60	48.3	7.5
Q3 weight 1	55	60	55	40	50	60	53.3	7.5
Q4 weight 2	40	50	40	50	55	60	49.2	8.0
Q5 weight 1	65	70	60	55	70	70	65.0	6.3
Q6 weight 1	60	70	75	75	70	95	74.2	11.6
Q7 weight 1	55	55	65	65	70	60	61.7	6.1
Q8 weight 2	60	70	75	65	80	80	71.7	8.2
Q9 weight 1	60	45	60	70	55	55	57.5	8.2
Q10 weight 1	70	55	75	65	75	65	67.5	7.6

Figure 8. The rating grid for Simple Angoff: items as rows, judges as columns.

1. Judges appear by name.
2. Type a rating; arrow keys and Enter move between cells. You can also paste a block from Excel.
3. Mean and SD for each item are updated as you type (high disagreement is highlighted).
4. **Grid / One judge**: the one-judge view is easier on phones and tablets.
5. **Try with demo data**.
6. **Template**: a CSV with judges as rows and items as columns.
7. **Import judge scores** from CSV or Excel.

- Empty cells are shown in amber and invalid values in red; the cut score cannot be approved until they are fixed (or judges with gaps are excluded).
- For **EZ**, every judge gives two values per station: **L** (highest score that indicates incompetence) and **H** (lowest score that indicates competence). H must be higher than L.
- For **Hofstee**, each judge gives the minimum and maximum acceptable cut score and fail rate.

Importing judge scores

The import window never assumes a fixed layout. You map each judge in 3S to a row of the file and each item to a column; anything not mapped is ignored.

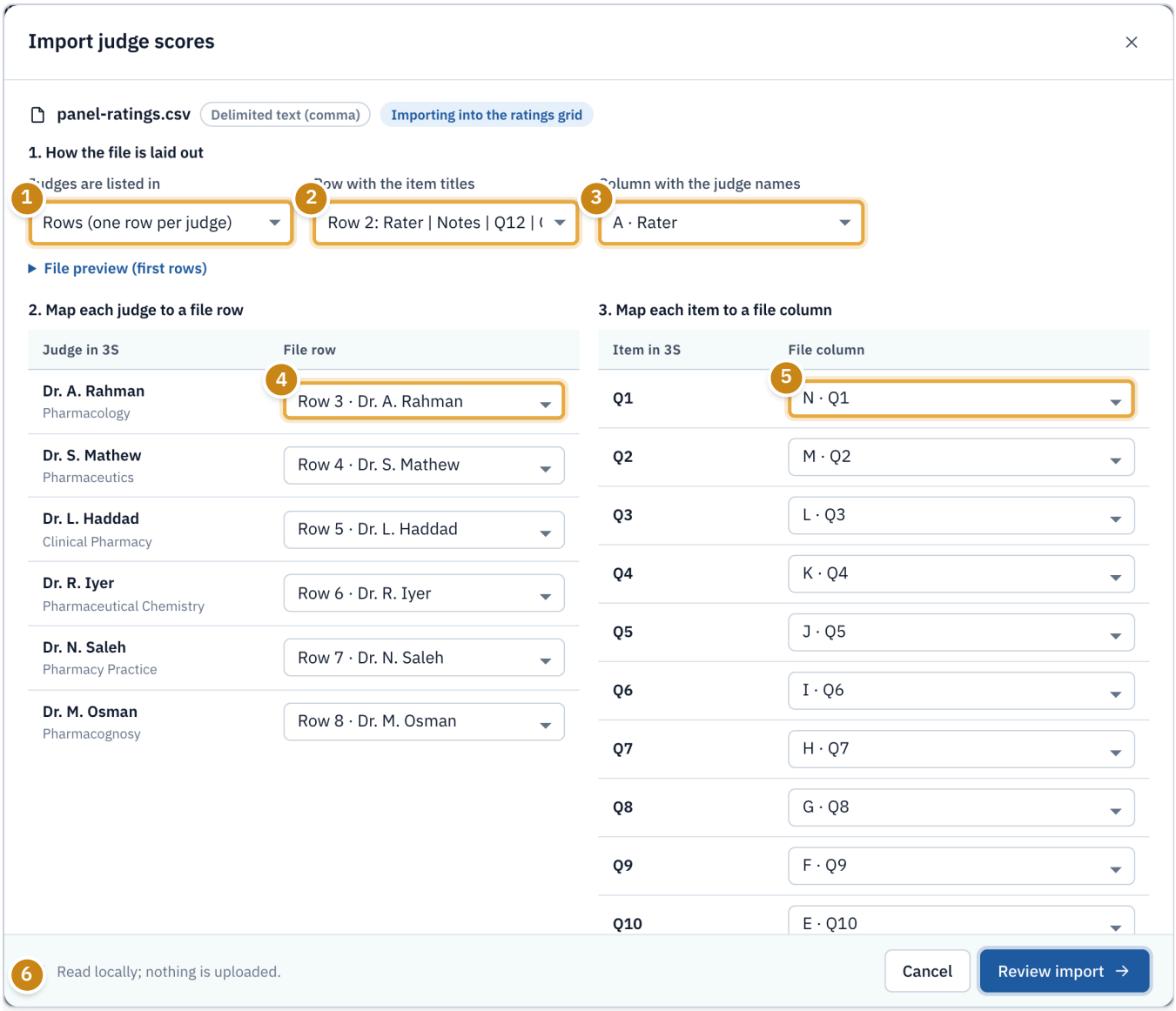


Figure 9. Step 1 of the import: mapping (the file has a title row, a notes column and items in reverse order).

1. **Judges are listed in**: rows (usual) or columns.
2. **Row with the item titles**.
3. **Column with the judge names**.
4. Each judge in 3S mapped to a file row (suggested by matching names).
5. Each item mapped to a file column (EZ: an L and an H column per station).
6. Validation: every judge and item must be mapped and no row or column used twice; values are checked for numbers, ranges and H > L.

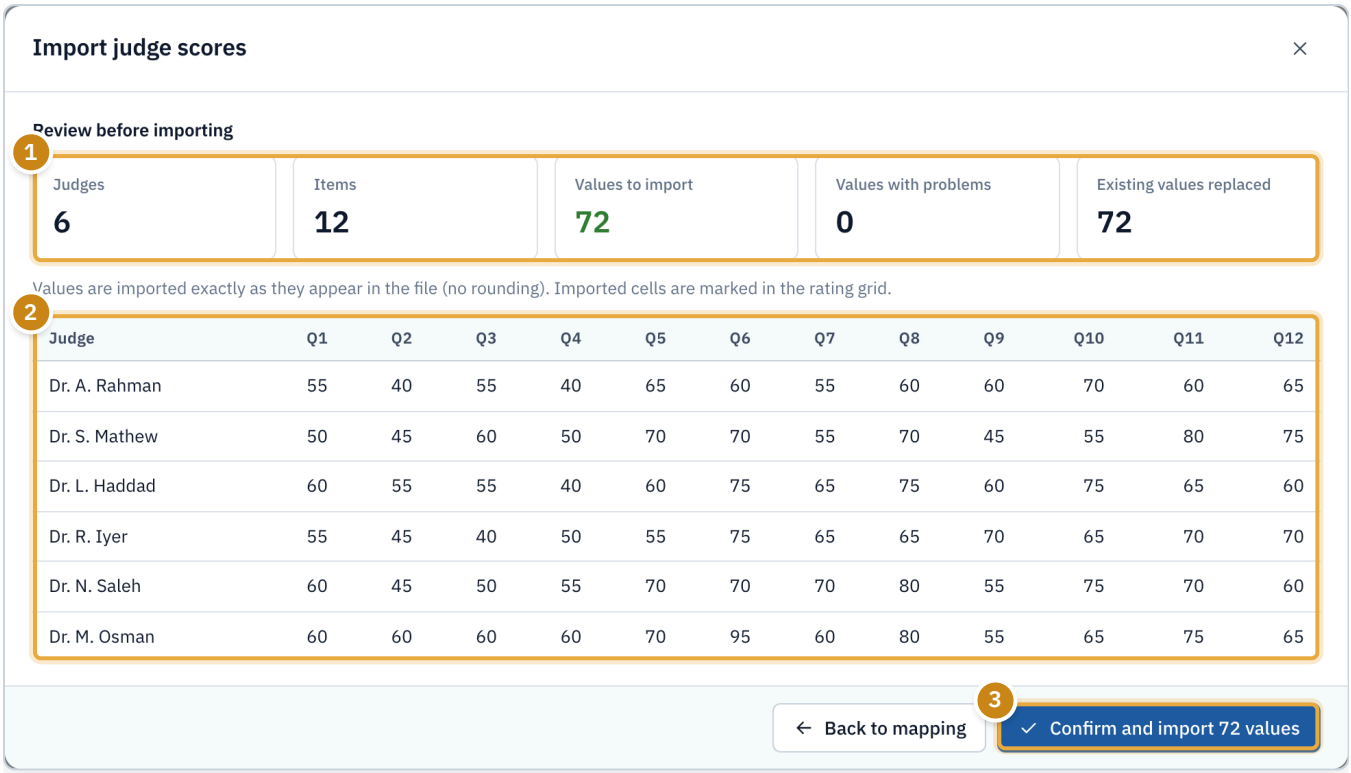


Figure 10. Step 2: review exactly what will be imported, then confirm.

1. Summary counts.
2. Preview of all values.
3. **Confirm and import.**

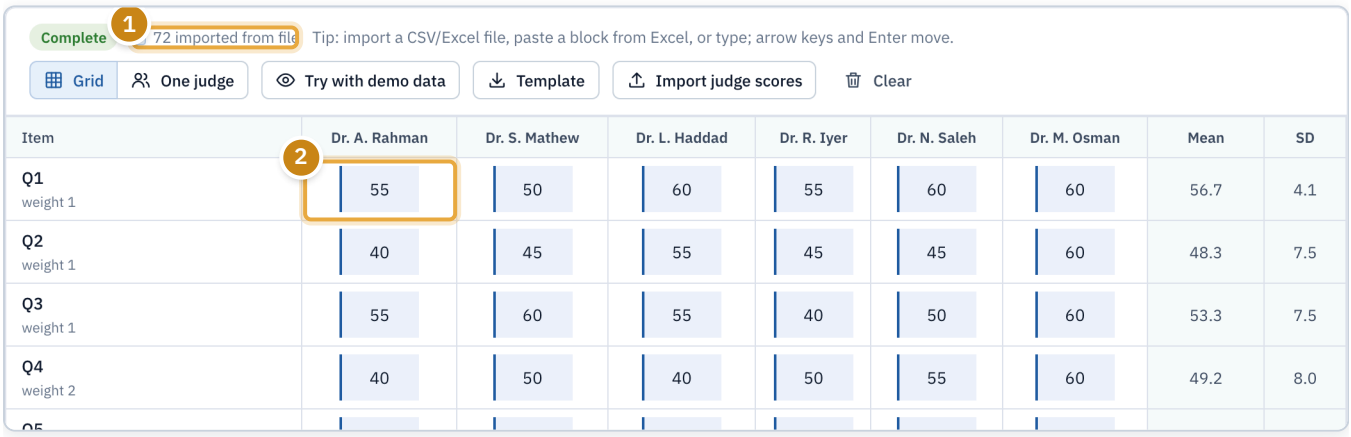


Figure 11. Imported cells are marked in the grid; typing over a cell removes the mark.

1. Count of imported cells.
2. An imported cell.

> **Note** Values are imported exactly as in the file, without rounding. If some values fail the checks, you can import the valid ones and leave the problem cells empty for correction.

Two rating rounds (optional)

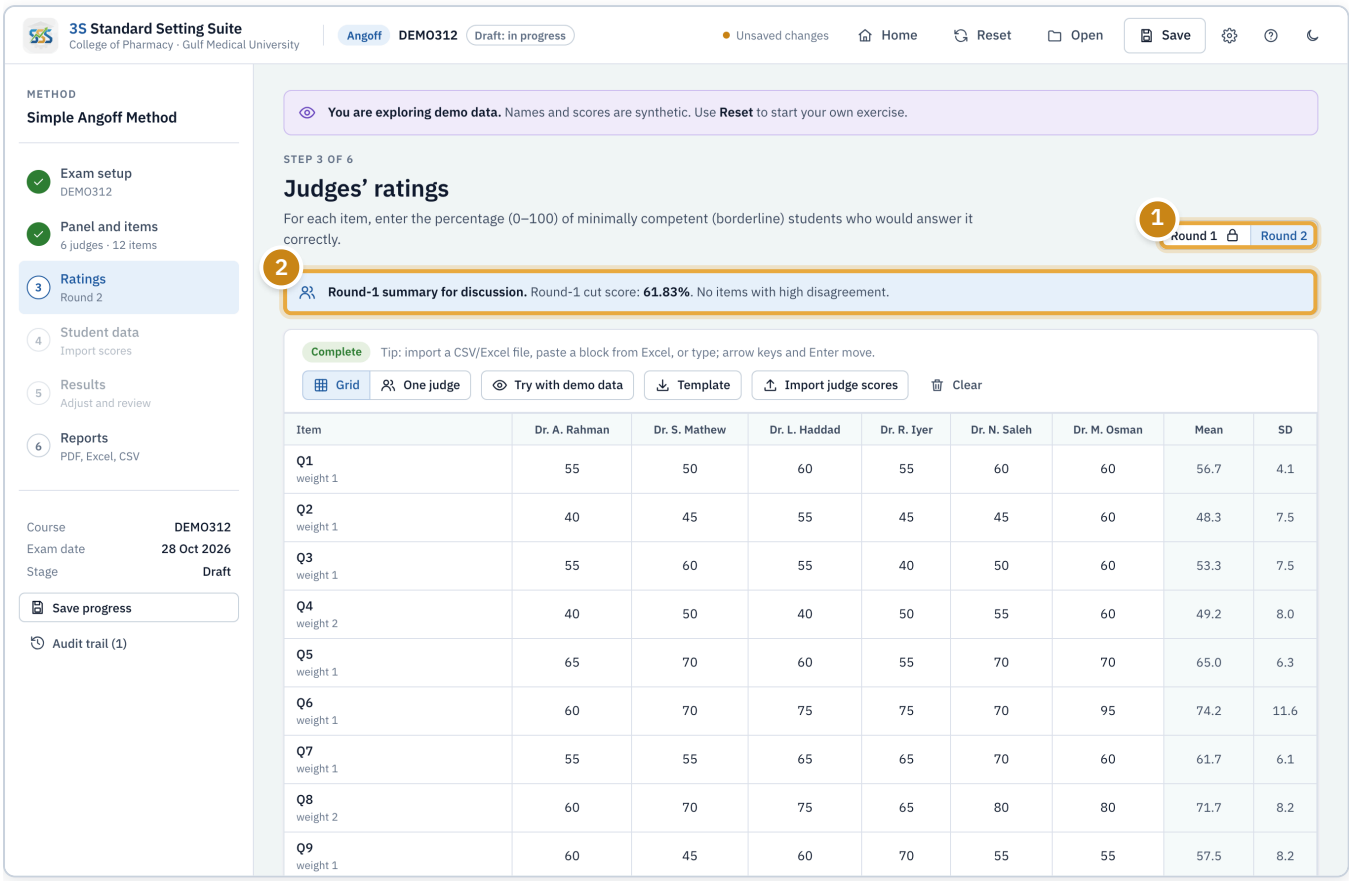


Figure 12. With two rounds, round 1 is locked and judges revise their ratings in round 2.

1. Round 1 / Round 2 tabs.
2. Round-1 summary for discussion: round-1 cut score and items with high disagreement.

The cut score panel

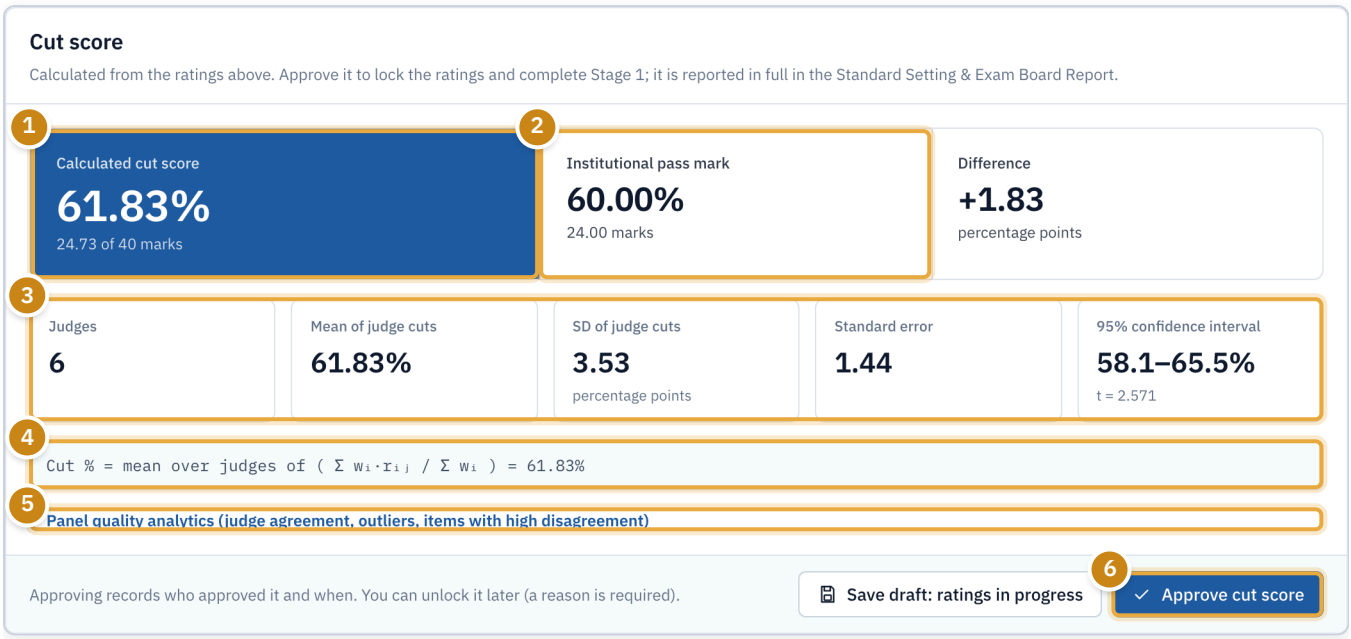
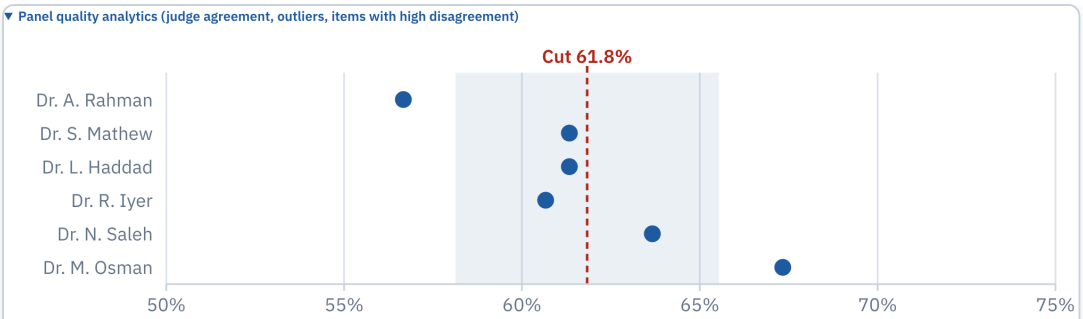


Figure 13. The cut score is calculated live below the ratings.

1. **Calculated cut score** (% and marks).
2. **Institutional cut score** and the difference.
3. Method statistics (Angoff: judges, SD, standard error, 95% confidence interval).
4. The formula used.
5. **Panel quality analytics** (expand).
6. **Approve cut score**.



Judges

Judge	Judge cut	vs panel	z
Dr. A. Rahman	56.67%	-5.17	-1.47
Dr. S. Mathew	61.33%	-0.50	-0.14
Dr. L. Haddad	61.33%	-0.50	-0.14
Dr. R. Iyer	60.67%	-1.17	-0.33
Dr. N. Saleh	63.67%	+1.83	0.52
Dr. M. Osman	67.33%	+5.50	1.56

Items (flag when SD > 15 points)

Item	Weight	Mean %	SD	Range
Q1	1.00	56.7	4.1	50–60
Q2	1.00	48.3	7.5	40–60
Q3	1.00	53.3	7.5	40–60
Q4	2.00	49.2	8.0	40–60
Q5	1.00	65.0	6.3	55–70
Q6	1.00	74.2	11.6	60–95

Figure 14. Panel quality analytics: judge cut scores with the confidence band, outlier judges and items with high disagreement.

Approving the cut score (Stage 1)

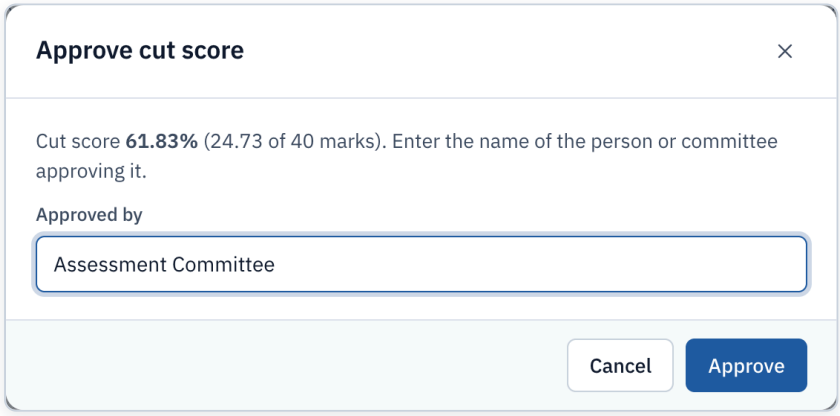


Figure 15. Approval records who approved the cut score and when.

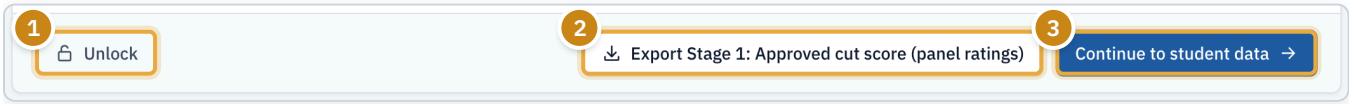


Figure 16. After approval the ratings are locked.

1. **Unlock** (a reason is required and recorded).
2. **Export Stage 1: Approved cut score (panel ratings).**
3. **Continue to student data.**

7 Student data

Import the students' scores from CSV or Excel. The first row of the file must contain the column titles.

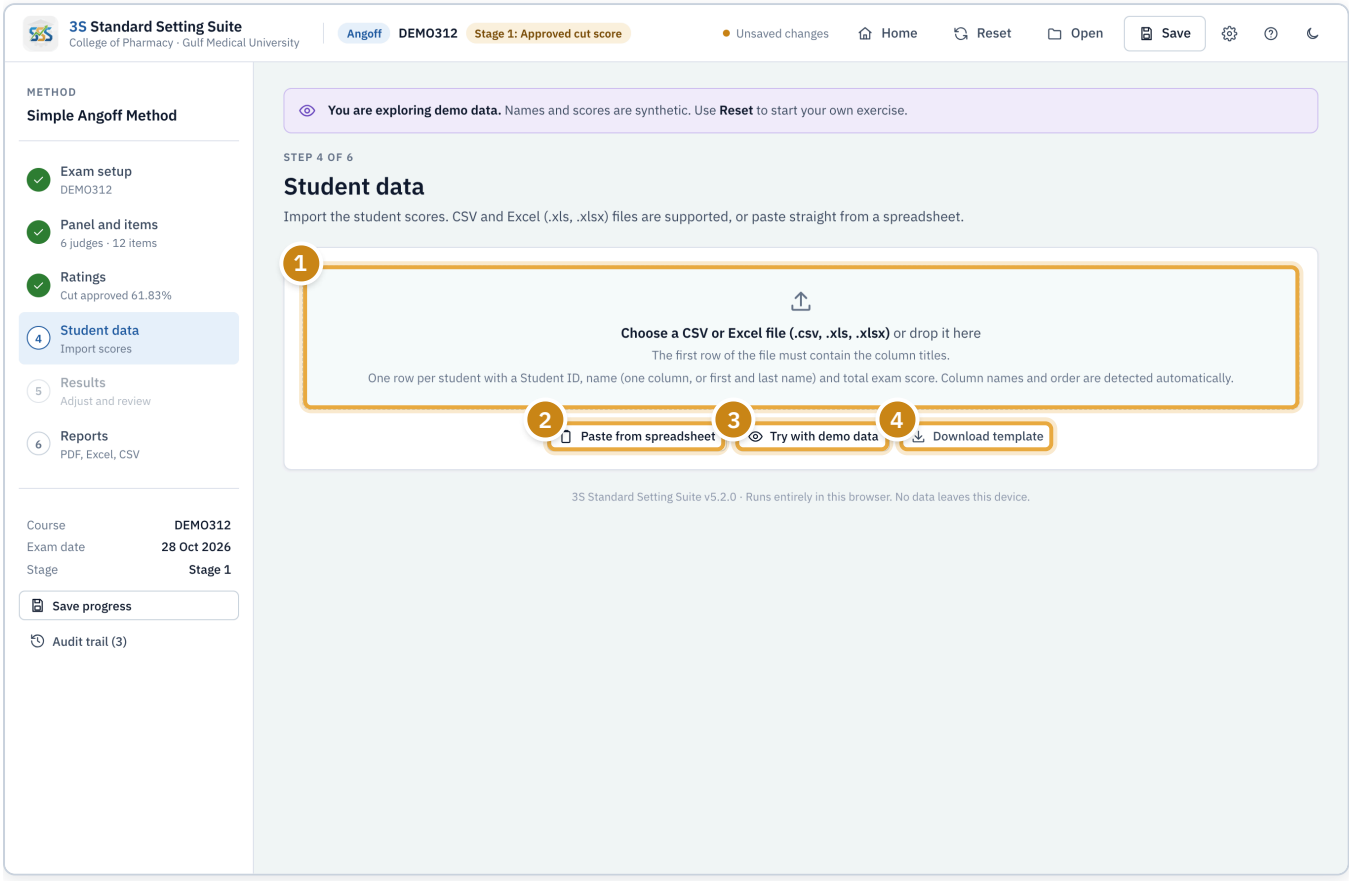


Figure 17. The Student data step before any list is imported.

1. Drop a file or click to choose one: **.csv, .xls or .xlsx** (TSV and TXT also work).
2. **Paste from spreadsheet**.
3. **Try with demo data**: a synthetic class list.
4. **Download template**.

Mapping the columns

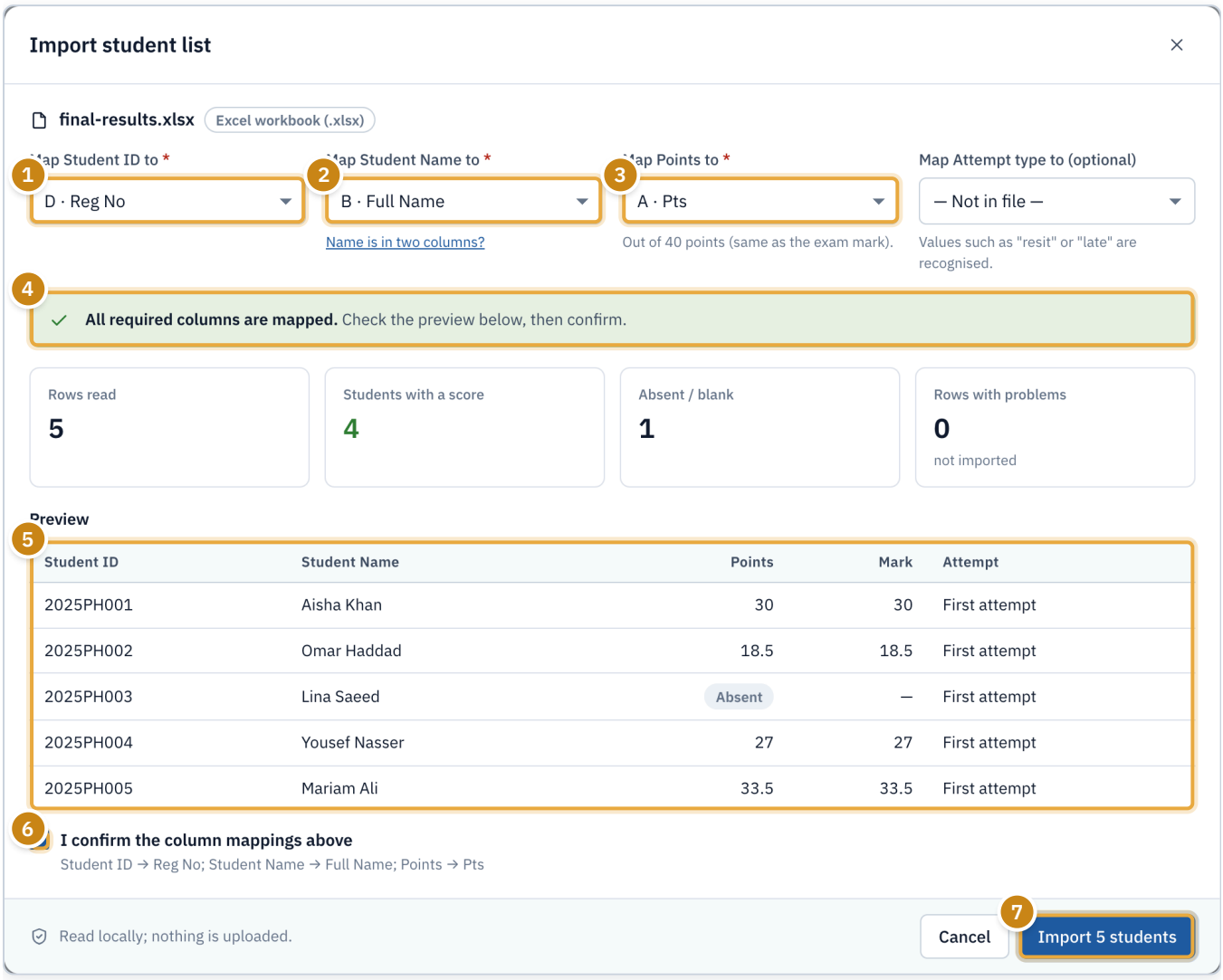


Figure 18. You choose which column holds each field; the column order in the file does not matter.

1. **Map Student ID to**: a dropdown of every column title in the file.
2. **Map Student Name to** (or first and last name, if the name is in two columns).
3. **Map Points to**: raw points out of the Total Exam Points.
4. Validation: missing or duplicate mappings are reported here.
5. Preview: ID, name, points and the converted mark; absence markers such as “abs” are recognised.
6. **I confirm the column mappings above** must be ticked.
7. **Import**.

- Rows with problems (no ID, unreadable or out-of-range scores, duplicate IDs) are listed and not imported.
- Blank cells and markers such as Abs, A, DNA, Ex, W or “-” are treated as **absent**.
- For Borderline Regression, map a **score** and a **global rating** column for every station.

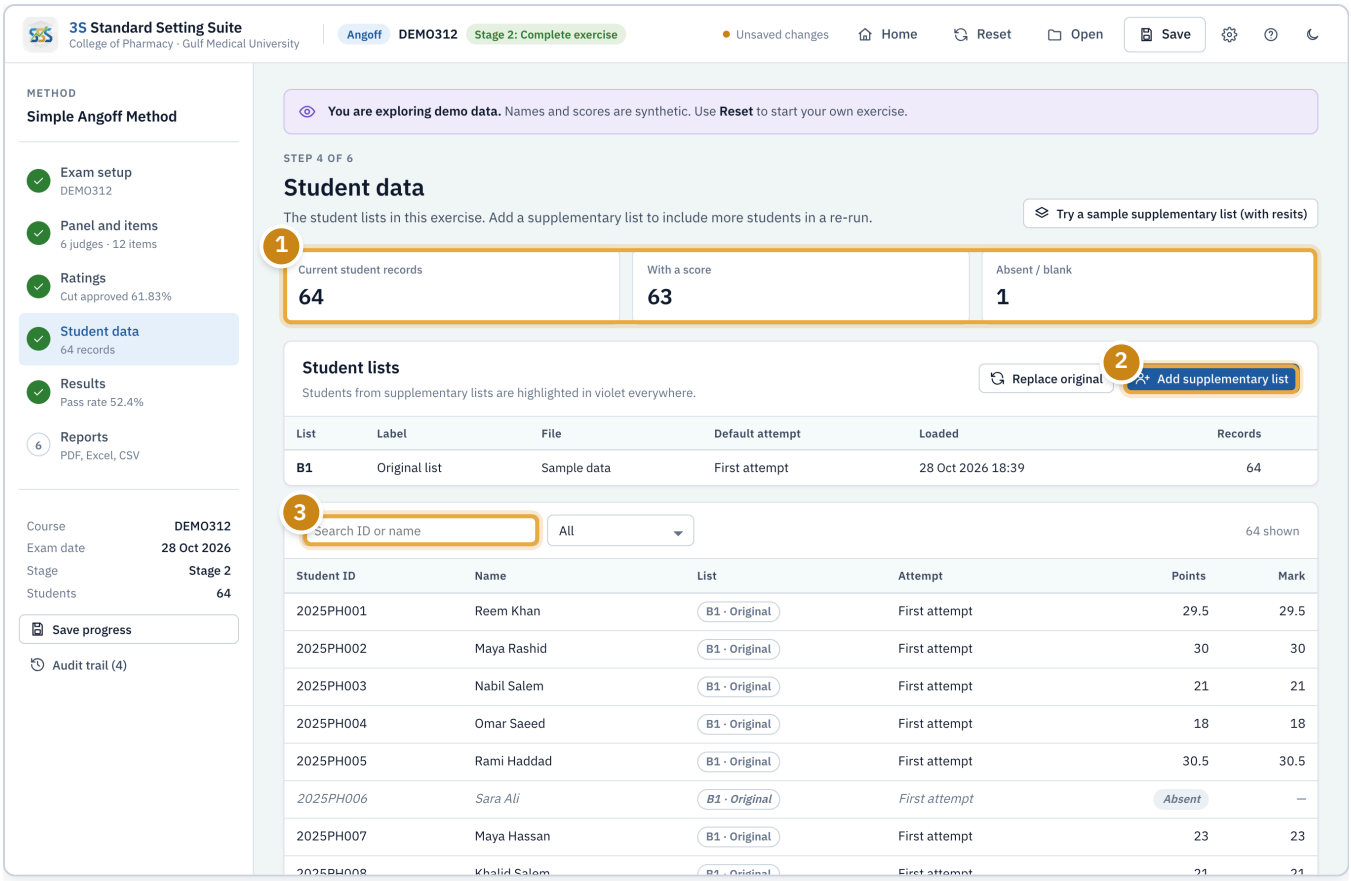


Figure 19. The Student data step after import.

1. Counts of current records, students with a score and absences.
2. **Add supplementary list** (see chapter 9).
3. Search and filter the students.

8 Results

See the cut score in force, choose how marks are adjusted and review every student's outcome.

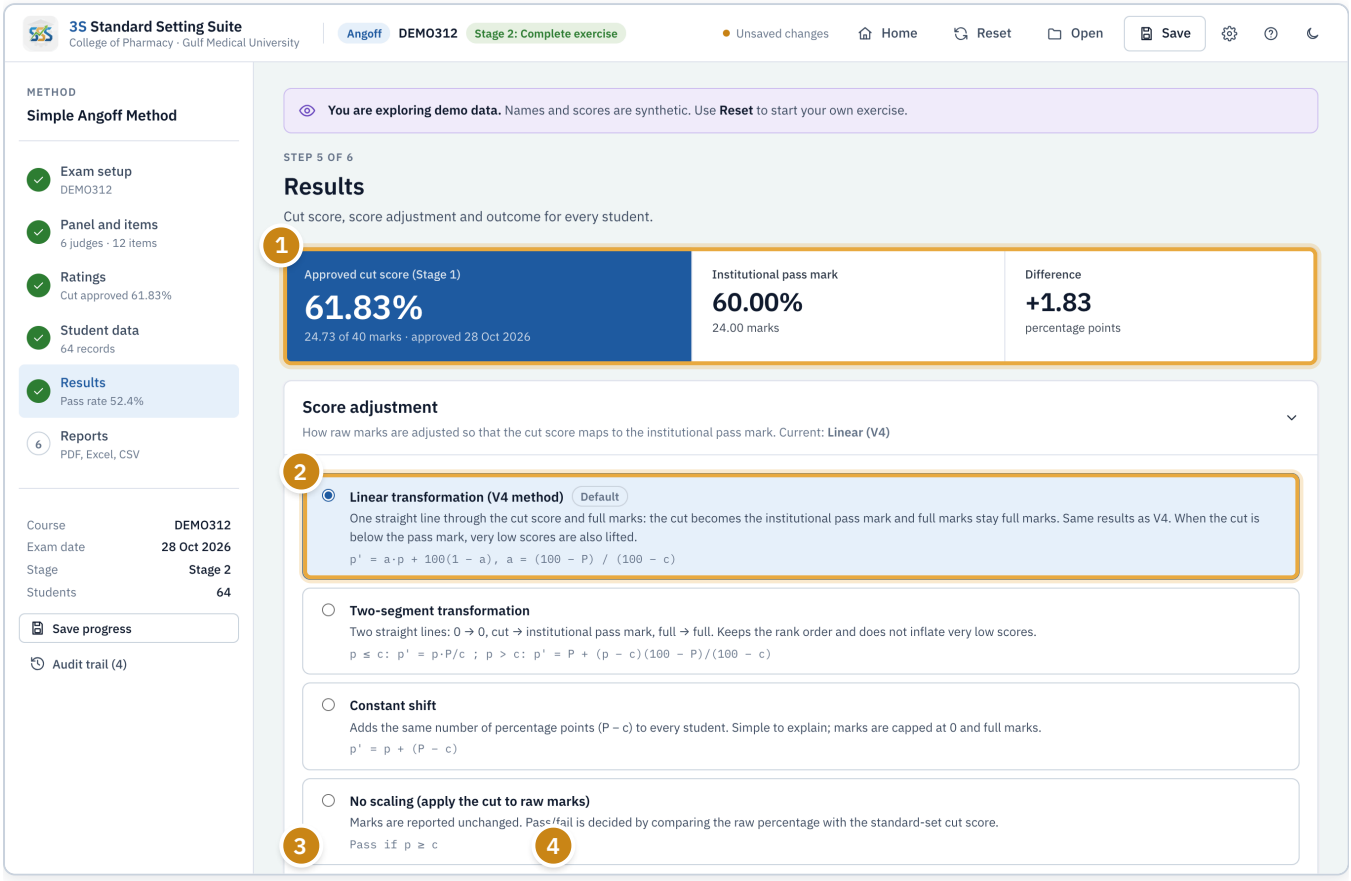


Figure 20. The top of the Results step.

1. The approved cut score, the institutional cut score and the difference.
2. **Score adjustment** options, each with an explanation and formula.
3. **Round reported marks to** (0.1 by default).
4. **Decide pass / fail on** the exact or the rounded mark.

Score adjustment	What it does
Linear transformation (V4 method), default	One straight line through the cut score and full marks: the cut becomes the institutional pass mark and full marks stay full marks.
Two-segment transformation	0 → 0, cut → pass mark, full → full. Keeps the rank order and does not inflate very low scores.
Constant shift	Adds the same number of percentage points to every student, capped at 0 and full marks.
No scaling	Marks are unchanged; pass/fail compares the raw percentage with the cut score.

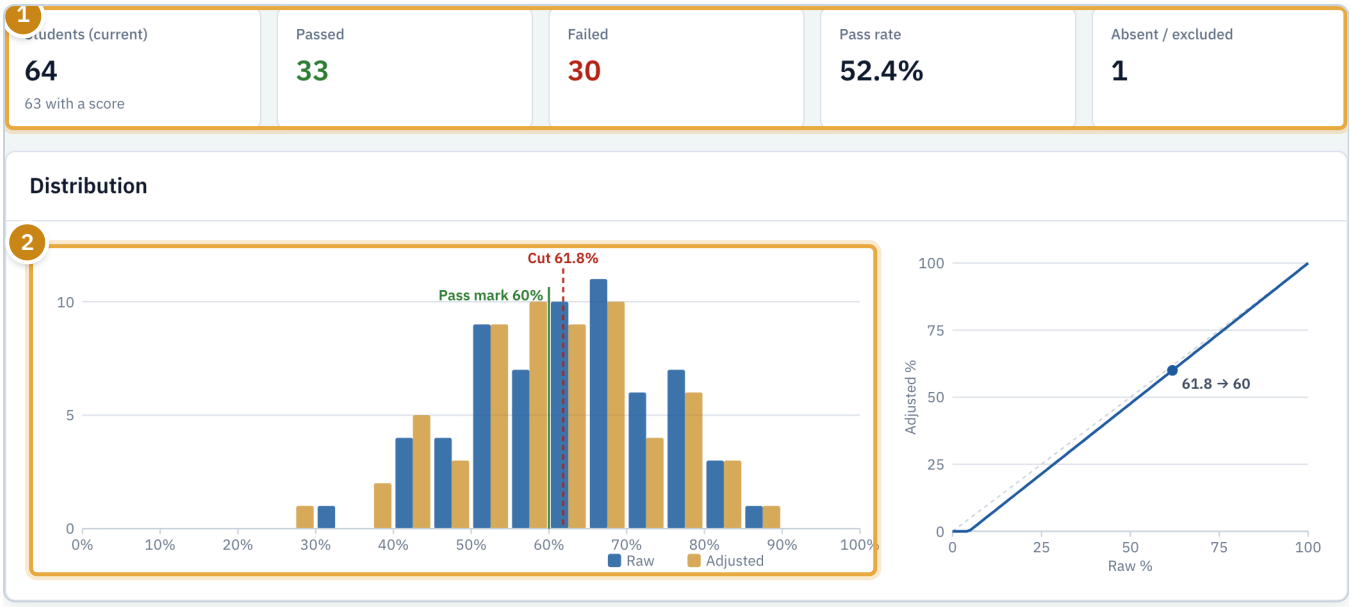


Figure 21. Outcome summary and distribution.

1. Students, passes, fails, pass rate and absences.
2. Raw (blue) and adjusted (amber) score distributions with the cut score and pass mark; the line chart shows the transformation.



Student ID	Name	List	Points	Raw mark	Raw %	Adjusted mark	Adjusted %	Change	Result
2025PH001	Reem Khan	B1 · Original	29.5	29.5	73.8	**29.0**	72.5	-0.5	Pass
2025PH002	Maya Rashid	B1 · Original	30	30.0	75.0	**29.5**	73.8	-0.5	Pass
2025PH003	Nabil Salem	B1 · Original	21	21.0	52.5	**20.1**	50.3	-0.9	Fail
2025PH004	Omar Saeed	B1 · Original	18	18.0	45.0	**16.9**	42.3	-1.1	Fail
2025PH005	Rami Haddad	B1 · Original	30.5	30.5	76.3	**30.0**	75.0	-0.5	Pass
2025PH006	*Sara Ali*	*B1 · Original*	–	–	–	–	–	–	*Absent*
2025PH007	Maya Hassan	B1 · Original	23	23.0	57.5	**22.2**	55.5	-0.8	Fail
2025PH008	Khalid Salem	B1 · Original	21	21.0	52.5	**20.1**	50.3	-0.9	Fail
2025PH009	Rana Salem	B1 · Original	21	21.0	52.5	**20.1**	50.3	-0.9	Fail
2025PH010	Layla Khan	B1 · Original	33.5	33.5	83.8	**33.2**	83.0	-0.3	Pass
2025PH011	Dana Mahmoud	B1 · Original	23.5	23.5	58.8	**22.7**	56.8	-0.8	Fail
2025PH012	Adel Mahmoud	B1 · Original	18.5	18.5	46.3	**17.5**	43.8	-1.0	Fail

Figure 22. Every student's points, raw and adjusted marks, change and result.

1. Search by ID or name.
2. Filter (original list, supplementary, pass, fail, absent).
3. Download the table as **CSV**.
4. Download the full **Excel** workbook.

> **Note** For Modified Cohen, Borderline Regression and Hofstee, the cut score is calculated from the student data on this step and approved here with **Approve cut score and results**.

9 Supplementary lists and resits

Add late, deferred or resit students to an exercise that has already been processed, without losing the earlier results.

When you open a saved session that already has results, 3S asks whether to **continue with the loaded cohort** or **add a supplementary student list and re-run**. You can also click **Add supplementary list** on the Student data step at any time.

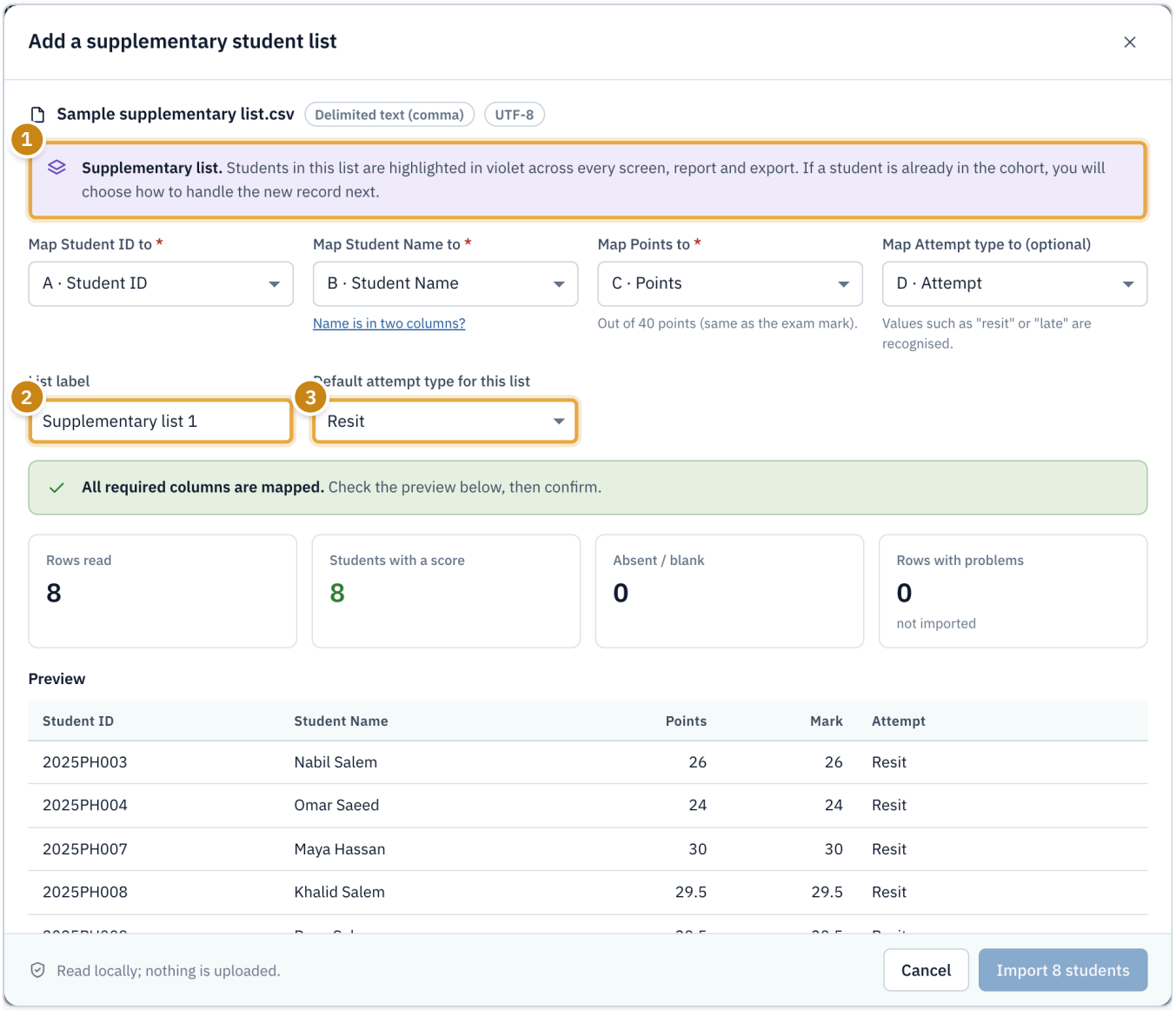


Figure 23. Importing a supplementary list.

1. Supplementary students are highlighted in violet on every screen, report and export.
2. A label for the list.
3. The default attempt type (Resit, Late / deferred, First attempt).

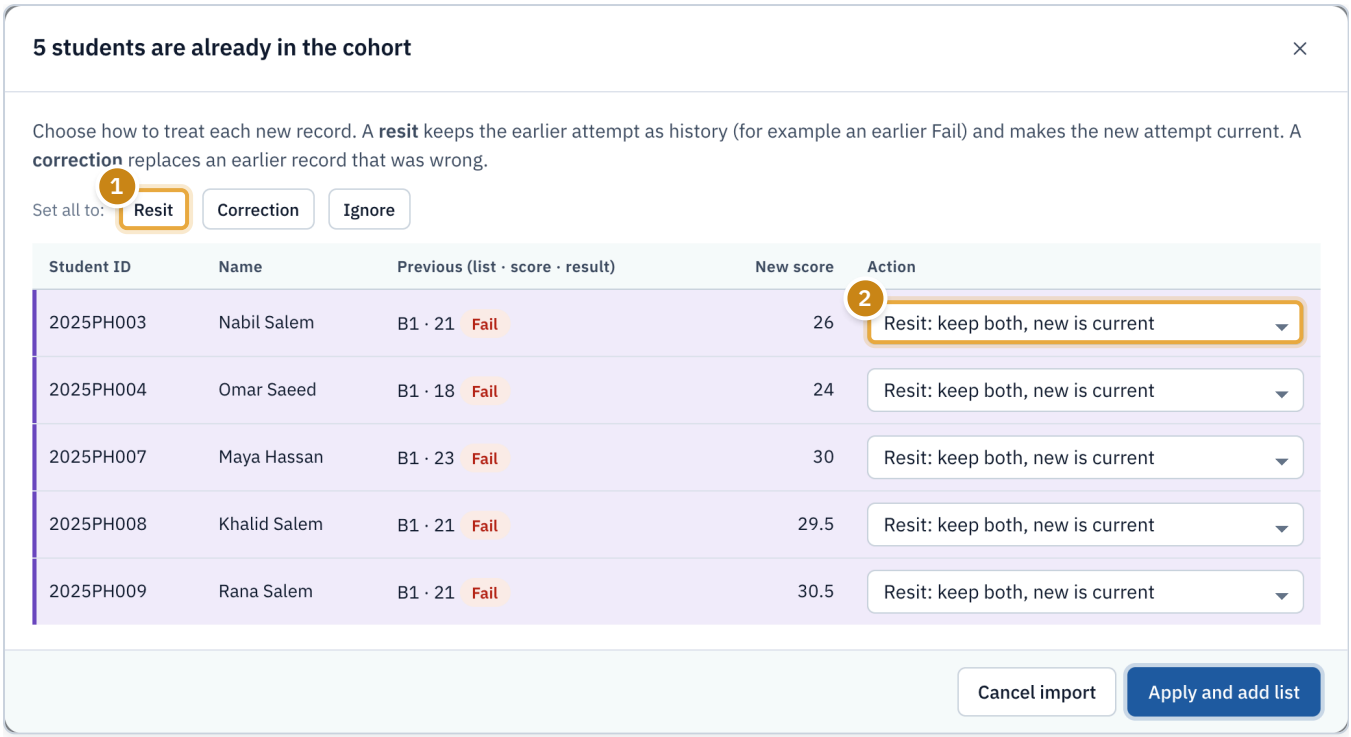


Figure 24. Students already in the cohort: choose what the new record means.

1. Set all at once: Resit, Correction or Ignore.
2. Or choose per student. **Resit** keeps the earlier attempt as history and makes the new one current; **Correction** replaces a wrong record.



Figure 25. Earlier attempts (greyed, “Earlier attempt”) sit directly above the new attempt, so an old Fail and a new Pass are never confused.

1. An earlier attempt.
2. The new, supplementary attempt.
3. Legend.

Cut score basis for student-based methods

For Modified Cohen, Borderline Regression and Hofstee the cut depends on student scores, so adding students could change it. 3S asks each time which basis to use and shows how many original students would change result.

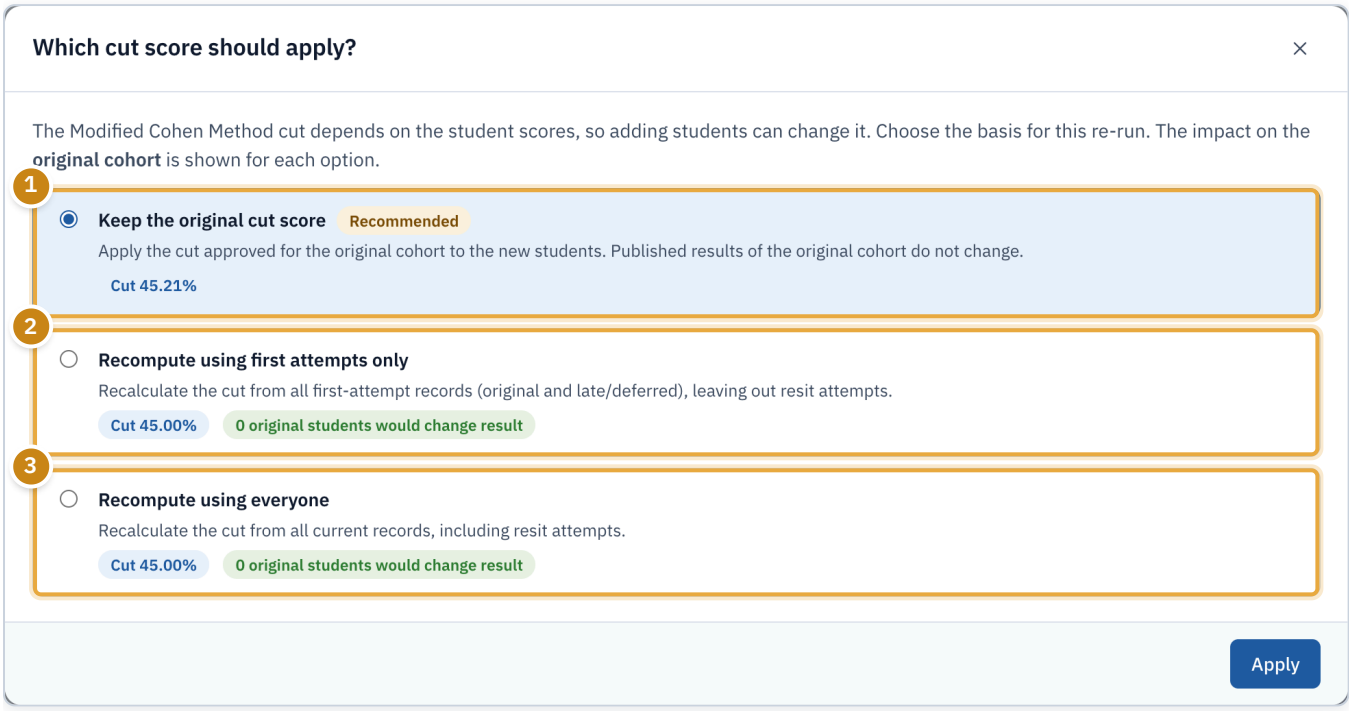


Figure 26. Choosing the cut basis after adding a supplementary list (Modified Cohen).

1. **Keep the original cut score** (recommended): published results do not change.
2. **Recompute using first attempts only**.
3. **Recompute using everyone**.

10 Method guides

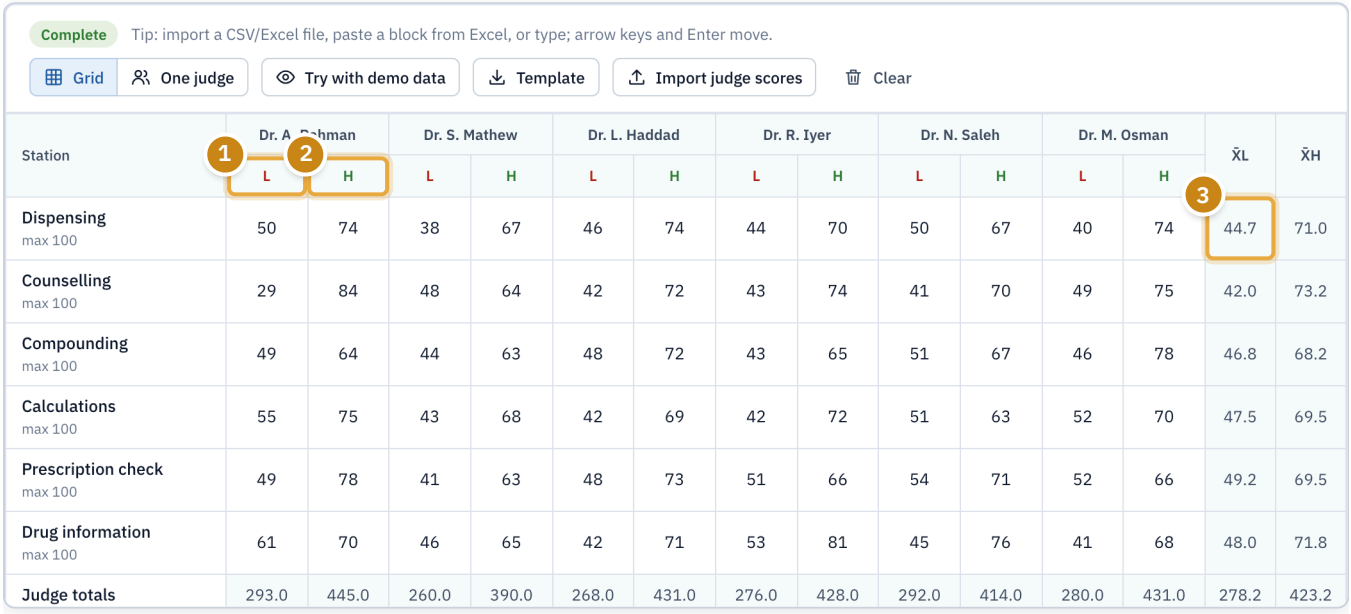
How each method calculates the cut score and what it needs from you.

Simple Angoff

- Each judge's cut is the weighted mean of their item ratings; the exam cut is the mean of the judges' cuts.
- Statistics: SD and standard error of the judges' cuts and a 95% confidence interval.
- Ratings as percentages (0–100) or probabilities (0–1).

$$\text{Judge cut} = \Sigma\, w_i \cdot r_i \;/\; \Sigma\, w_i \qquad \text{Cut} = \text{mean of judge cuts}$$

EZ (Equal Z)



Complete — Tip: import a CSV/Excel file, paste a block from Excel, or type; arrow keys and Enter move.

Grid | One judge | Try with demo data | Template | Import judge scores | Clear

Station	Dr. A. Rahman		Dr. S. Mathew		Dr. L. Haddad		Dr. R. Iyer		Dr. N. Saleh		Dr. M. Osman		X̄L	X̄H
	L	H	L	H	L	H	L	H	L	H	L	H		
Dispensing max 100	50	74	38	67	46	74	44	70	50	67	40	74	44.7	71.0
Counselling max 100	29	84	48	64	42	72	43	74	41	70	49	75	42.0	73.2
Compounding max 100	49	64	44	63	48	72	43	65	51	67	46	78	46.8	68.2
Calculations max 100	55	75	43	68	42	69	42	72	51	63	52	70	47.5	69.5
Prescription check max 100	49	78	41	63	48	73	51	66	54	71	52	66	49.2	69.5
Drug information max 100	61	70	46	65	42	71	53	81	45	76	41	68	48.0	71.8
Judge totals	293.0	445.0	260.0	390.0	268.0	431.0	276.0	428.0	292.0	414.0	280.0	431.0	278.2	423.2

Figure 27. EZ ratings: each judge gives L and H for every station.

1. L: highest score that indicates without doubt an incompetent examinee.
2. H: lowest score that indicates without doubt a competent examinee.
3. Station means of L and H.

$$Z = (\bar{X}H - \bar{X}L) \;/\; (SEL + SEH) \qquad \text{Cut} = \bar{X}L + Z \cdot SEL$$

X̄L and X̄H are the means of the judges' total L and H scores, and SEL and SEH their standard errors. If all judges agree exactly, the cut is set midway between X̄L and X̄H with a warning (Yang et al., 2022).

Modified Cohen

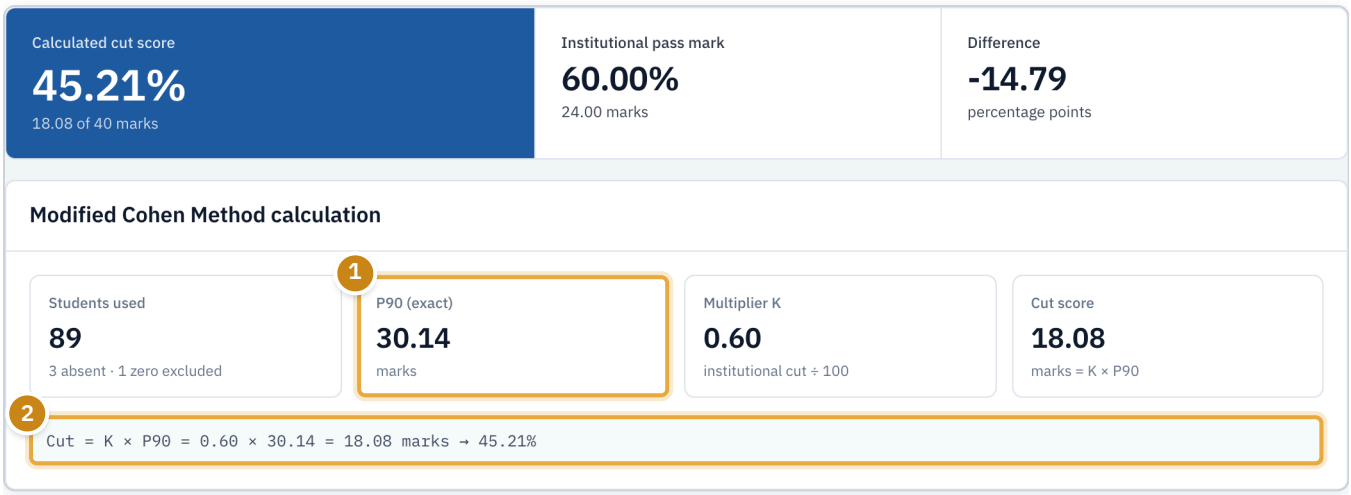


Figure 28. Modified Cohen calculation on the Results step.

1. The 90th-percentile score (exact, by linear interpolation as in Excel PERCENTILE.INC).
2. The formula with the values used.

```
Cut (marks) = K × P90 K = institutional cut score ÷ 100
```

Students with 0 points are treated as absent by default (Settings › Policy). Taylor (2011).

Borderline Regression

Borderline Regression Method calculation

1

Station	n	Intercept	Slope	R²	Cut	Max
Station 1	60	3.42	3.01	0.85	**9.43**	20
Station 2	60	2.98	3.16	0.84	**9.31**	20
Station 3	60	3.91	2.84	0.85	**9.58**	20
Station 4	60	3.73	2.87	0.83	**9.47**	20
Station 5	60	3.34	3.08	0.83	**9.50**	20
Station 6	60	3.61	3.03	0.79	**9.67**	20
Station 7	60	4.01	2.87	0.82	**9.76**	20
Station 8	60	4.86	2.61	0.88	**10.07**	20
Total					**76.79**	160

2

`Station cut = intercept + slope × 2.0 (borderline grade) ; exam cut = Σ station cuts = 76.79 of 160.00 → 47.99%`

3

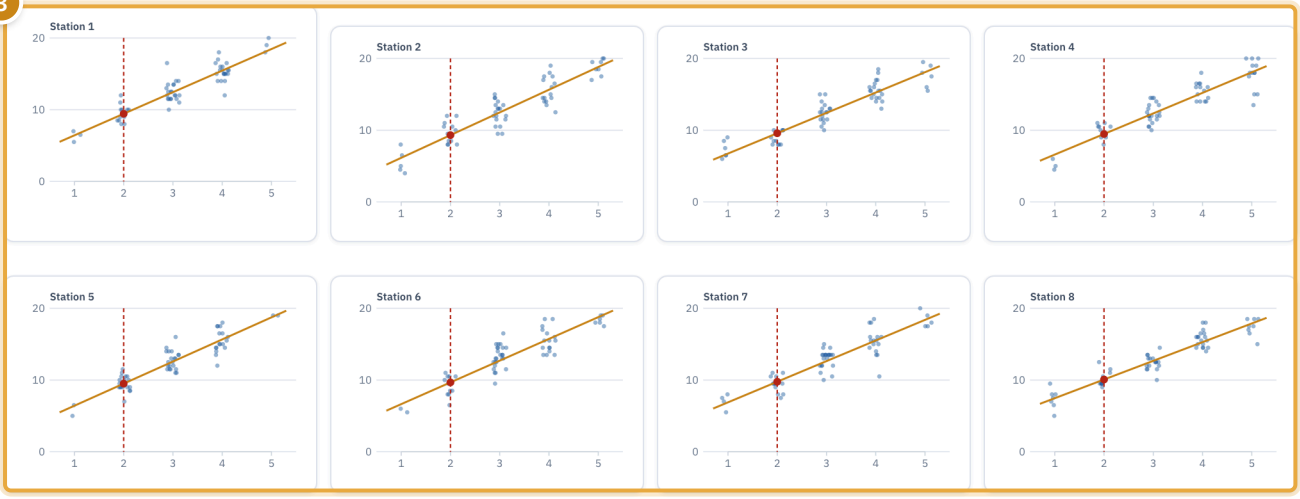


Figure 29. Borderline Regression: one regression per station.

1. Station intercept, slope, R² and cut (weak relationships flagged).
2. Formula and global rating scale.
3. Scatter plot and regression line for each station.

> `Station cut = intercept + slope × borderline grade Exam cut = Σ station cuts`

Hofstee

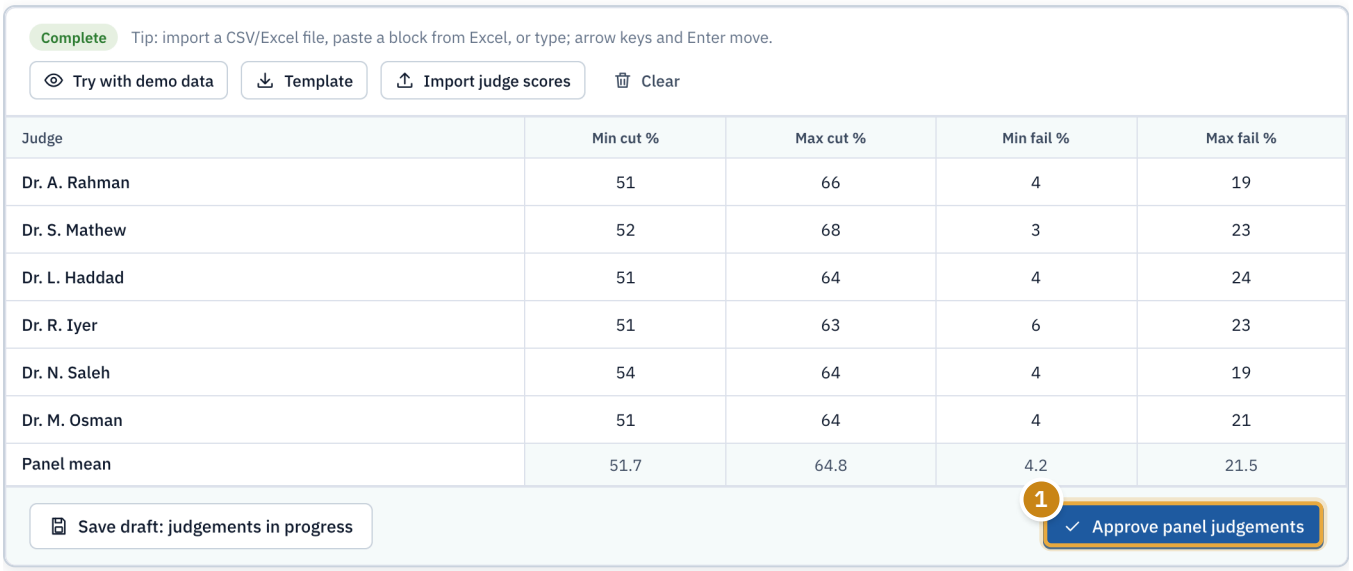


Figure 30. Hofstee judgements: four values per judge.

1 **Approve panel judgements** (Stage 1).

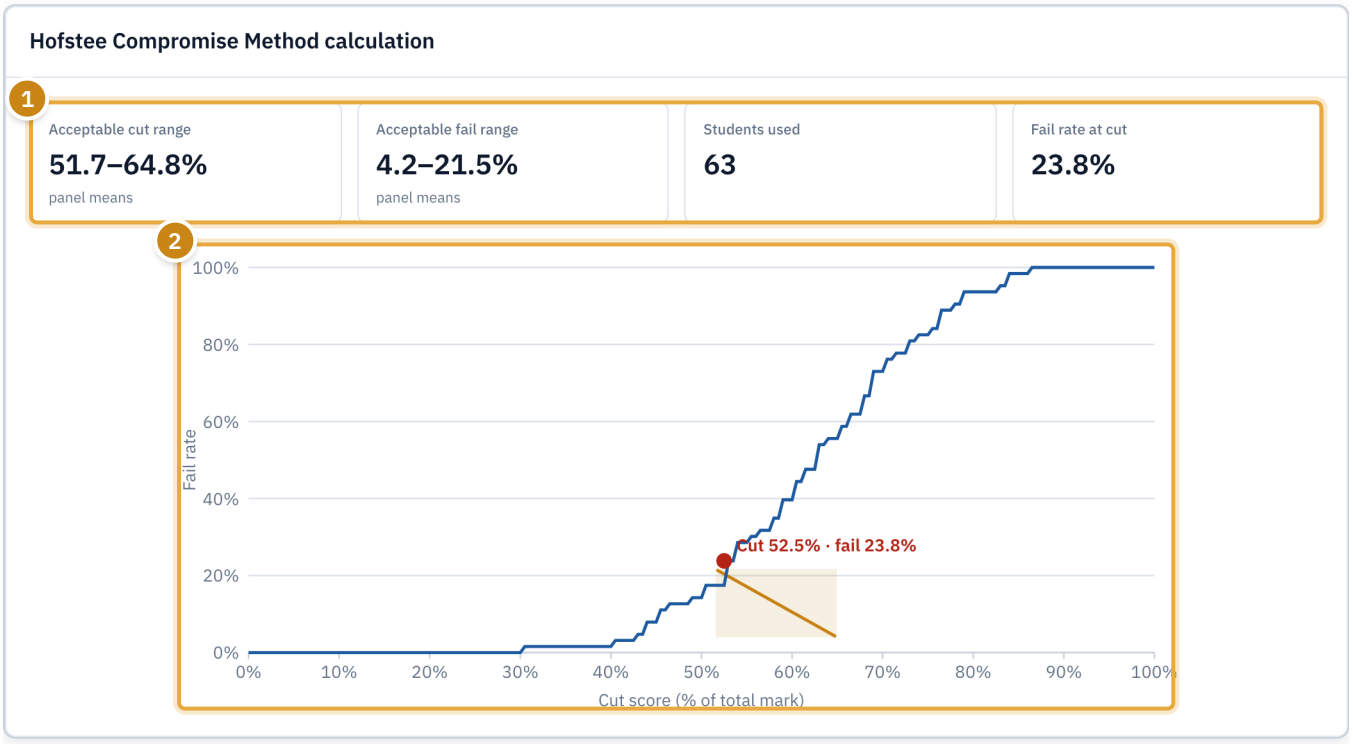


Figure 31. The cut is where the fail-rate curve crosses the panel's box.

1 Mean acceptable ranges and the fail rate at the cut.

2 The Hofstee chart.

11 Reports and exports

Preview each report inside 3S, print it or save it as PDF, and download the data as CSV or Excel.

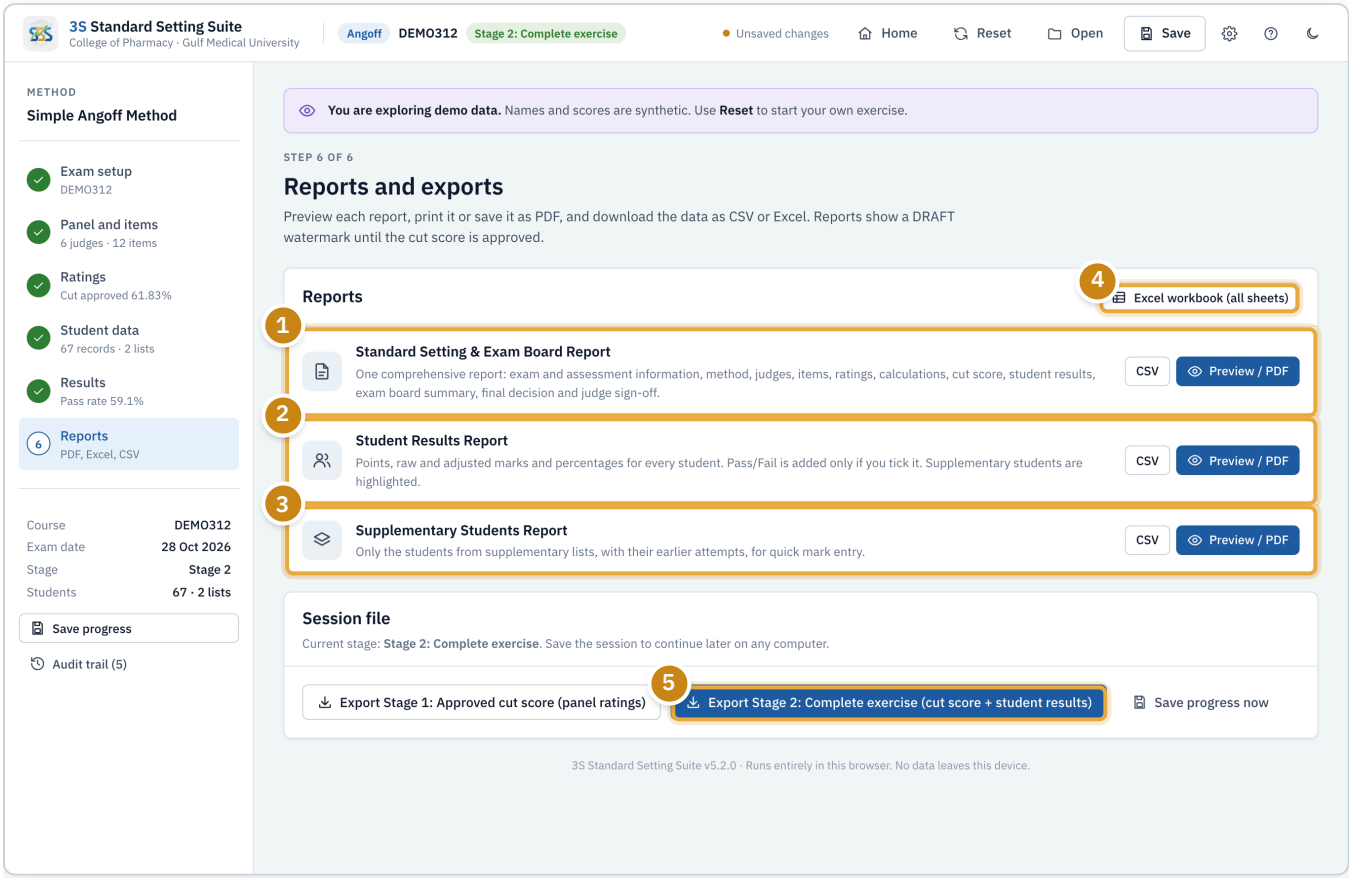


Figure 32. The Reports step.

1. **Standard Setting & Exam Board Report**.
2. **Student Results Report**.
3. **Supplementary Students Report** (when supplementary lists exist).
4. **Excel workbook** with all sheets.
5. **Export Stage 2 / complete exercise** session file.

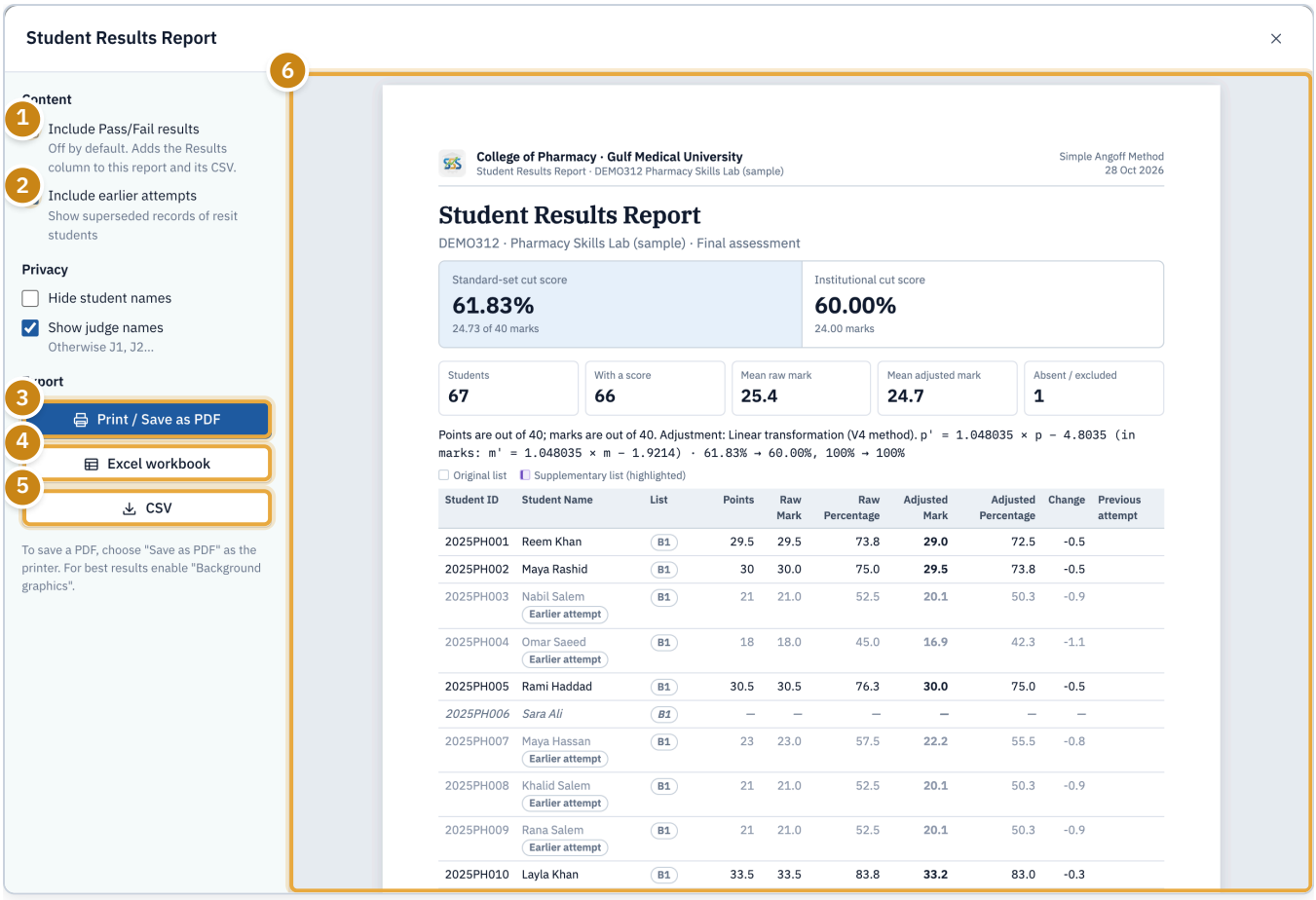


Figure 33. Report preview with options and exports.

1. **Include Pass/Fail results**: unticked by default.
2. **Include earlier attempts** of resit students.
3. **Print / Save as PDF** (choose “Save as PDF” and enable “Background graphics”).
4. **Excel workbook**.
5. **CSV** with the same columns as the report.
6. Live preview.

Standard Setting & Exam Board Report

One comprehensive report in twelve sections: exam information, assessment information, standard setting method, judges, items, judge ratings, calculations, cut score, student results, exam board summary, final decision and judge sign-off, followed by appendices with the formulas and the audit trail. A DRAFT watermark appears until the cut score is approved.



College of Pharmacy
Gulf Medical University

SIMPLE ANGOFF METHOD

Standard Setting & Exam Board Report

DEMO312 · Pharmacy Skills Lab (sample)
Final assessment

Date of exam	Assessment type
28 Oct 2026	SAQ (Short Answer Questions)
Total exam points / mark	**Institutional cut score**
40 / 40	60.00%
Status	**Prepared by**
Approved 28 Oct 2026	Sample user

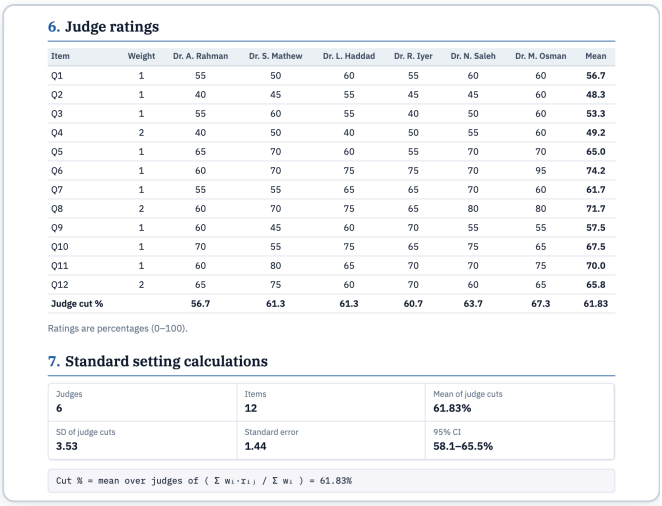
Standard-set cut score	Cut score in marks	Pass rate (after adjustment)
61.83%	24.73	59.1%

Report 3S-ANGOFF-202610281839-DE5FF3
College of Pharmacy · Gulf Medical University
Standard Setting & Exam Board Report · DEMO312 Pharmacy Skills Lab (sample)

Generated 28 Oct 2026 18:39
Simple Angoff Method
28 Oct 2026

1. Exam information

Figure 34. Report cover with the logo, exam details and the cut score.



6. Judge ratings

Item	Weight	Dr. A. Rahman	Dr. S. Mathew	Dr. L. Haddad	Dr. R. Iyer	Dr. N. Saleh	Dr. M. Osman	Mean
Q1	1	55	50	60	55	60	60	**56.7**
Q2	1	40	45	55	45	45	60	**48.3**
Q3	1	55	60	55	40	50	60	**53.3**
Q4	2	40	50	40	50	55	60	**49.2**
Q5	1	65	70	60	55	70	70	**65.0**
Q6	1	60	70	75	75	70	95	**74.2**
Q7	1	55	55	65	65	70	60	**61.7**
Q8	2	60	70	75	65	80	80	**71.7**
Q9	1	60	45	60	70	55	55	**57.5**
Q10	1	70	55	75	65	75	65	**67.5**
Q11	1	60	80	65	70	70	75	**70.0**
Q12	2	65	75	60	70	60	65	**65.8**
Judge cut %		**56.7**	**61.3**	**61.3**	**60.7**	**63.7**	**67.3**	**61.83**

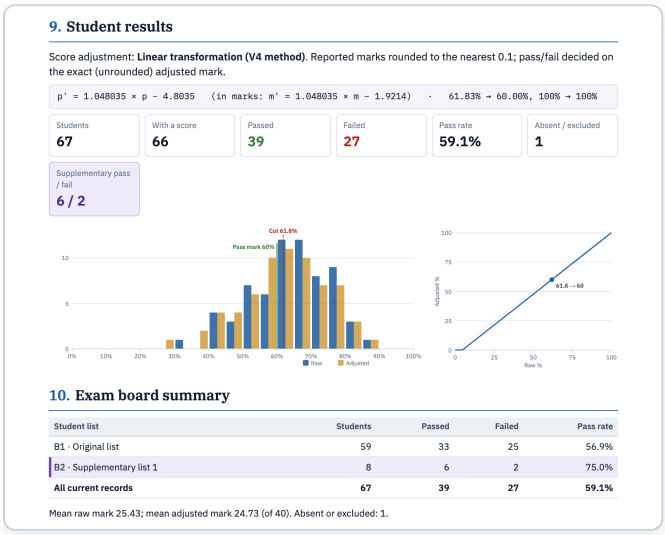
Ratings are percentages (0–100).

7. Standard setting calculations

Judges	Items	Mean of judge cuts
6	12	61.83%
SD of judge cuts	**Standard error**	**95% CI**
3.53	1.44	58.1–65.5%

`Cut % = mean over judges of ( Σ wᵢ·rᵢⱼ / Σ wᵢ ) = 61.83%`

Figure 35. Judge ratings and standard setting calculations.



9. Student results

Score adjustment: **Linear transformation (V4 method)**. Reported marks rounded to the nearest 0.1; pass/fail decided on the exact (unrounded) adjusted mark.

`p' = 1.048035 × p − 4.8035  (in marks: m' = 1.048035 × m − 1.9214)  ·  61.83% → 60.00%, 100% → 100%`

Students	With a score	Passed	Failed	Pass rate	Absent / excluded
67	66	39	27	59.1%	1

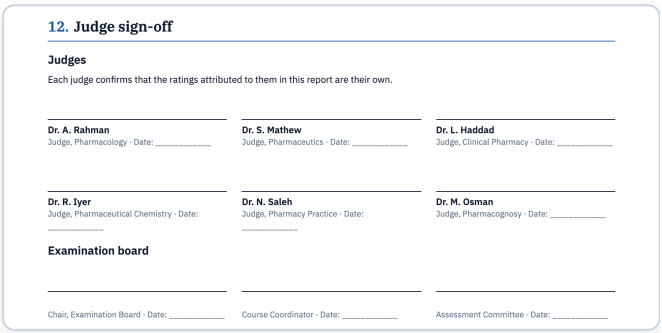
Supplementary pass / fail: 6 / 2

10. Exam board summary

Student list	Students	Passed	Failed	Pass rate
B1 · Original list	59	33	25	56.9%
B2 · Supplementary list 1	8	6	2	75.0%
All current records	**67**	**39**	**27**	**59.1%**

Mean raw mark 25.43; mean adjusted mark 24.73 (of 40). Absent or excluded: 1.

Figure 36. Cut score and student results with charts.



12. Judge sign-off

Judges

Each judge confirms that the ratings attributed to them in this report are their own.

Dr. A. Rahman Judge, Pharmacology · Date: _____	**Dr. S. Mathew** Judge, Pharmaceutics · Date: _____	**Dr. L. Haddad** Judge, Clinical Pharmacy · Date: _____
Dr. R. Iyer Judge, Pharmaceutical Chemistry · Date: _____	**Dr. N. Saleh** Judge, Pharmacy Practice · Date: _____	**Dr. M. Osman** Judge, Pharmacognosy · Date: _____

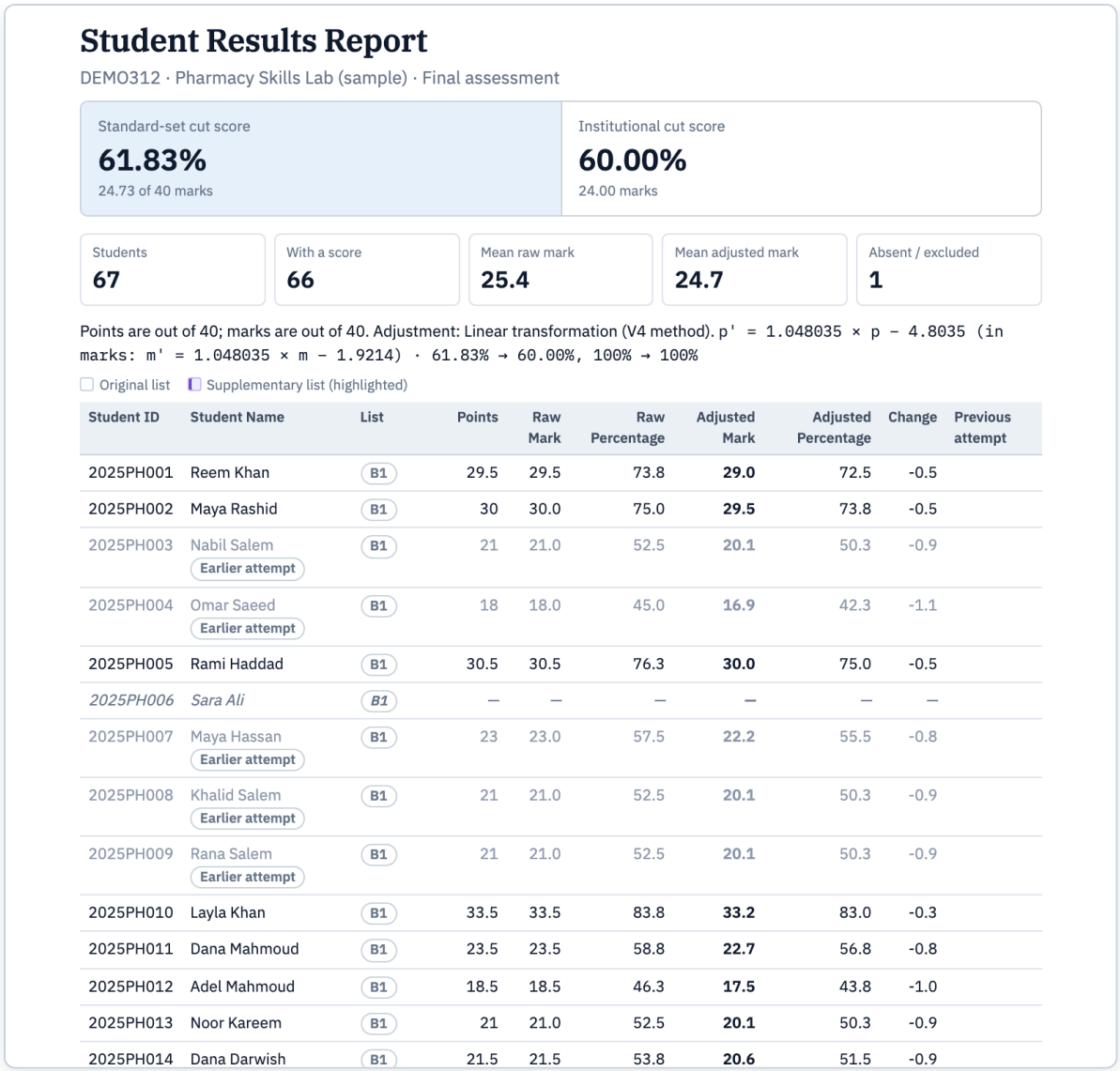
Examination board

Chair, Examination Board · Date: _____	Course Coordinator · Date: _____	Assessment Committee · Date: _____

Figure 37. Exam board summary, final decision and judge sign-off by name.

Student Results Report

Columns in this order: **Points, Raw Mark, Raw Percentage, Adjusted Mark, Adjusted Percentage, Change**, then **Results (Pass/Fail)** only when the option is ticked. The CSV export has exactly the same columns.



Student Results Report

DEMO312 · Pharmacy Skills Lab (sample) · Final assessment

Standard-set cut score	Institutional cut score
61.83%	**60.00%**
24.73 of 40 marks	24.00 marks

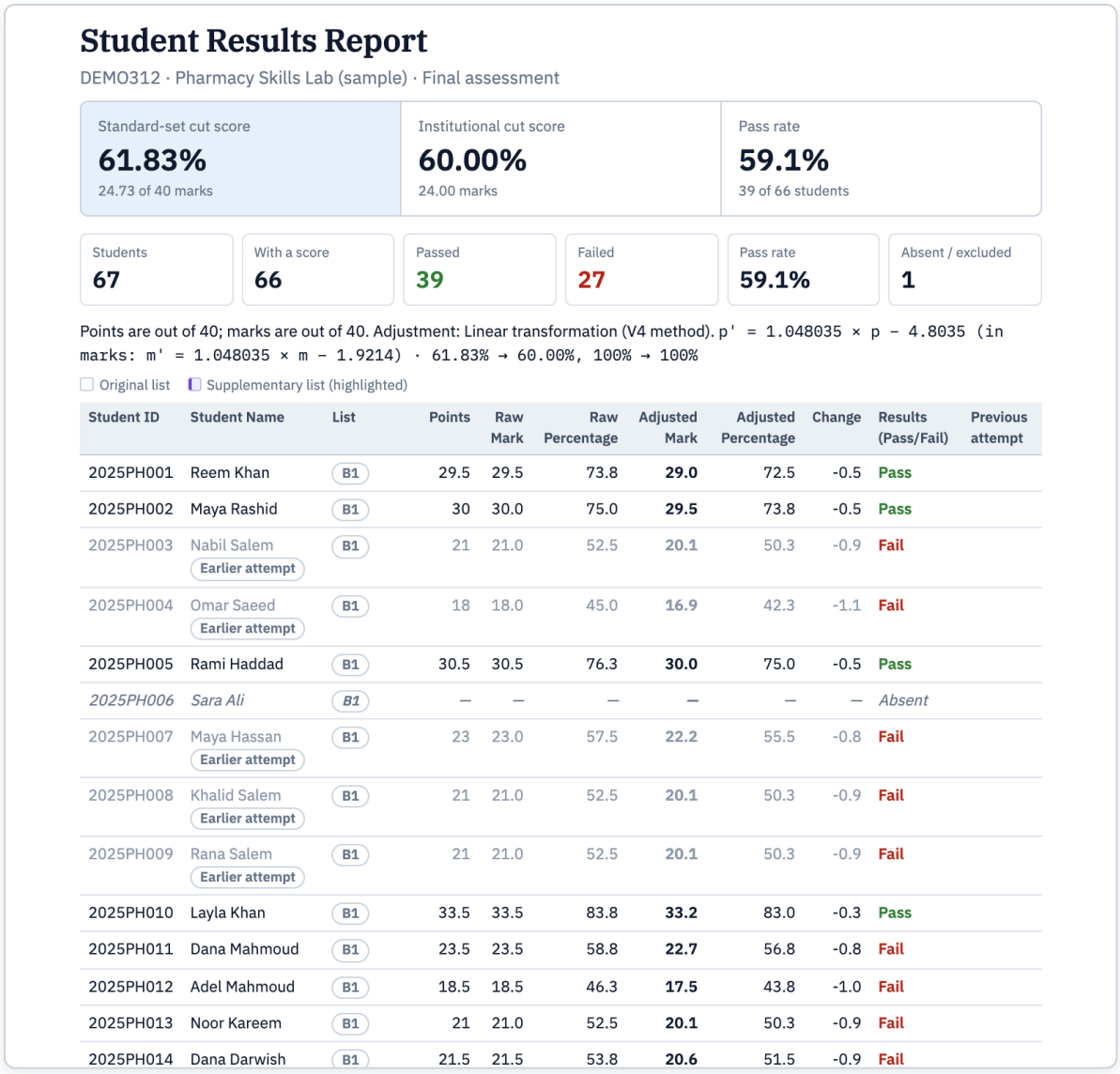
Students	With a score	Mean raw mark	Mean adjusted mark	Absent / excluded
67	**66**	**25.4**	**24.7**	**1**

Points are out of 40; marks are out of 40. Adjustment: Linear transformation (V4 method). `p' = 1.048035 × p − 4.8035 (in marks: m' = 1.048035 × m − 1.9214)` · `61.83% → 60.00%, 100% → 100%`

☐ Original list ▯ Supplementary list (highlighted)

Student ID	Student Name	List	Points	Raw Mark	Raw Percentage	Adjusted Mark	Adjusted Percentage	Change	Previous attempt
2025PH001	Reem Khan	B1	29.5	29.5	73.8	**29.0**	72.5	-0.5	
2025PH002	Maya Rashid	B1	30	30.0	75.0	**29.5**	73.8	-0.5	
2025PH003	Nabil Salem Earlier attempt	B1	21	21.0	52.5	**20.1**	50.3	-0.9	
2025PH004	Omar Saeed Earlier attempt	B1	18	18.0	45.0	**16.9**	42.3	-1.1	
2025PH005	Rami Haddad	B1	30.5	30.5	76.3	**30.0**	75.0	-0.5	
2025PH006	*Sara Ali*	*B1*	—	—	—	—	—	—	
2025PH007	Maya Hassan Earlier attempt	B1	23	23.0	57.5	**22.2**	55.5	-0.8	
2025PH008	Khalid Salem Earlier attempt	B1	21	21.0	52.5	**20.1**	50.3	-0.9	
2025PH009	Rana Salem Earlier attempt	B1	21	21.0	52.5	**20.1**	50.3	-0.9	
2025PH010	Layla Khan	B1	33.5	33.5	83.8	**33.2**	83.0	-0.3	
2025PH011	Dana Mahmoud	B1	23.5	23.5	58.8	**22.7**	56.8	-0.8	
2025PH012	Adel Mahmoud	B1	18.5	18.5	46.3	**17.5**	43.8	-1.0	
2025PH013	Noor Kareem	B1	21	21.0	52.5	**20.1**	50.3	-0.9	
2025PH014	Dana Darwish	B1	21.5	21.5	53.8	**20.6**	51.5	-0.9	

Figure 38. Student Results Report, default: no Pass/Fail column and no pass counts.



Student Results Report

DEMO312 · Pharmacy Skills Lab (sample) · Final assessment

Standard-set cut score	Institutional cut score	Pass rate
61.83%	60.00%	59.1%
24.73 of 40 marks	24.00 marks	39 of 66 students

Students	With a score	Passed	Failed	Pass rate	Absent / excluded
67	66	39	27	59.1%	1

Points are out of 40; marks are out of 40. Adjustment: Linear transformation (V4 method). `p' = 1.048035 × p − 4.8035 (in marks: m' = 1.048035 × m − 1.9214)` · 61.83% → 60.00%, 100% → 100%

☐ Original list ▯ Supplementary list (highlighted)

Student ID	Student Name	List	Points	Raw Mark	Raw Percentage	Adjusted Mark	Adjusted Percentage	Change	Results (Pass/Fail)	Previous attempt
2025PH001	Reem Khan	B1	29.5	29.5	73.8	**29.0**	72.5	-0.5	Pass	
2025PH002	Maya Rashid	B1	30	30.0	75.0	**29.5**	73.8	-0.5	Pass	
2025PH003	Nabil Salem Earlier attempt	B1	21	21.0	52.5	**20.1**	50.3	-0.9	Fail	
2025PH004	Omar Saeed Earlier attempt	B1	18	18.0	45.0	**16.9**	42.3	-1.1	Fail	
2025PH005	Rami Haddad	B1	30.5	30.5	76.3	**30.0**	75.0	-0.5	Pass	
2025PH006	*Sara Ali*	*B1*	—	—	—	—	—	—	*Absent*	
2025PH007	Maya Hassan Earlier attempt	B1	23	23.0	57.5	**22.2**	55.5	-0.8	Fail	
2025PH008	Khalid Salem Earlier attempt	B1	21	21.0	52.5	**20.1**	50.3	-0.9	Fail	
2025PH009	Rana Salem Earlier attempt	B1	21	21.0	52.5	**20.1**	50.3	-0.9	Fail	
2025PH010	Layla Khan	B1	33.5	33.5	83.8	**33.2**	83.0	-0.3	Pass	
2025PH011	Dana Mahmoud	B1	23.5	23.5	58.8	**22.7**	56.8	-0.8	Fail	
2025PH012	Adel Mahmoud	B1	18.5	18.5	46.3	**17.5**	43.8	-1.0	Fail	
2025PH013	Noor Kareem	B1	21	21.0	52.5	**20.1**	50.3	-0.9	Fail	
2025PH014	Dana Darwish	B1	21.5	21.5	53.8	**20.6**	51.5	-0.9	Fail	

Figure 39. The same report with “Include Pass/Fail results” ticked: pass counts and the Results (Pass/Fail) column are added.

Excel workbook

Sheets: Summary, Panel ratings, Judge statistics, Student results, Supplementary (if any) and Audit trail. Headers are frozen and supplementary students are tinted violet.

12 Saving, stages and session files

A session file stores the whole exercise so you can continue later on any computer.

Button	When	File name contains
Save (top bar) or Ctrl/Cmd + S	Any time	the current stage
Save draft: ratings in progress	Before the cut score is approved	Draft
Export Stage 1: Approved cut score (panel ratings)	After approval on the Ratings step (Angoff, EZ)	Stage1-CutScore
Export Stage 1: Approved panel judgements	Hofstee, after approving the judgements	Stage1-Panel
Export Stage 2: Complete exercise	After student results are processed	Stage2-Complete

- The top bar always shows the method, the course code and the current **stage** (Draft, Stage 1, Stage 2).
- Example file name: `3S_PHAR201_Angoff_Stage1-CutScore_20261028-1430.json`.
- Each file carries a SHA-256 fingerprint. A file edited outside 3S shows a warning when opened, and opening it anyway is recorded in the audit trail.
- Work is also autosaved in the browser and offered for resuming when 3S opens.
- Session files from earlier 5.x versions open in V5.2.

13 Settings and institutional policy

Defaults reproduce the behaviour of the original (V4) tool; adapt them to your institution and share them as a profile.

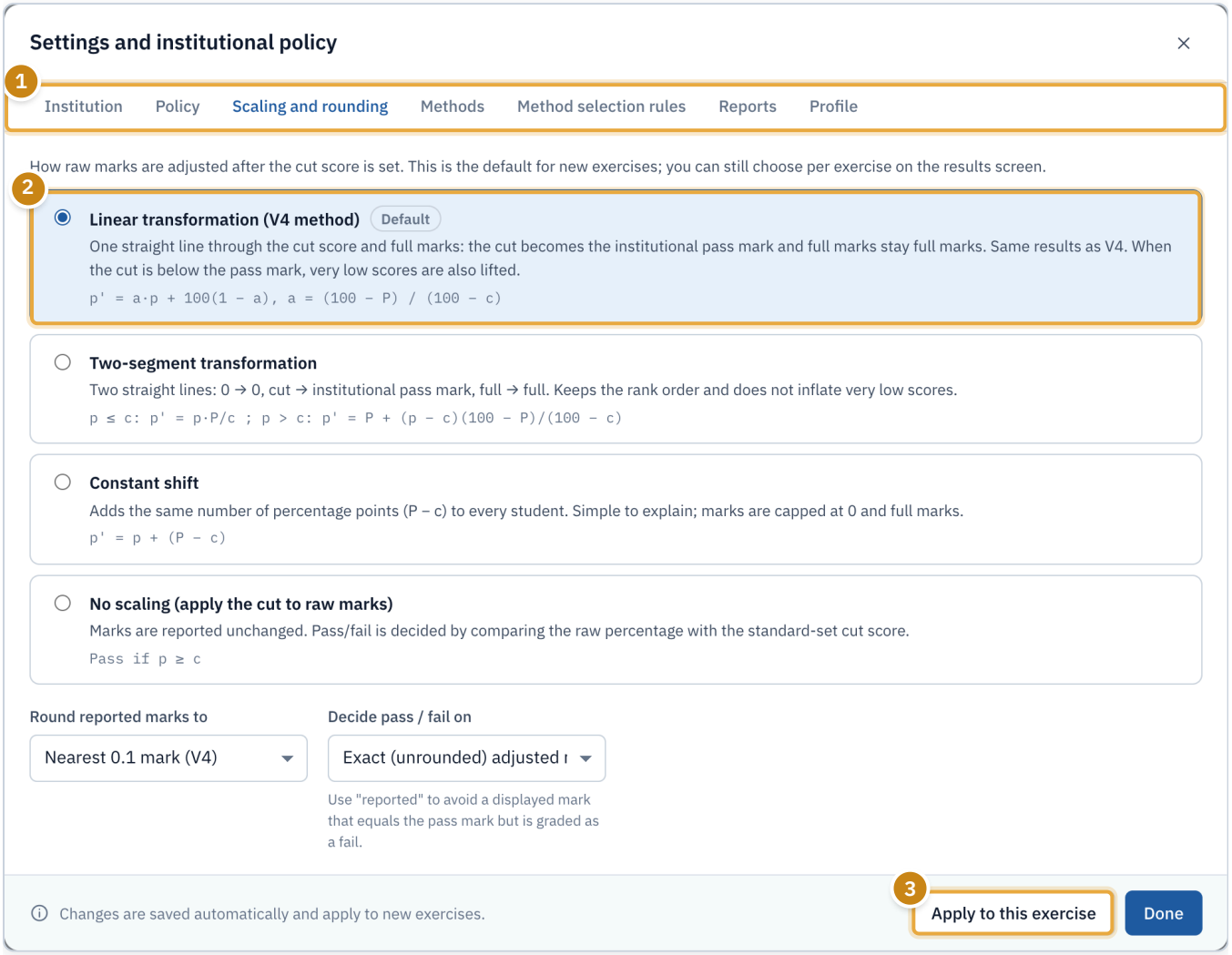


Figure 40. Settings › Scaling and rounding.

1. Tabs: Institution, Policy, Scaling and rounding, Methods, Method selection rules, Reports, Profile.
2. Default score adjustment with explanations.
3. **Apply to this exercise**: copy the settings into the open exercise.

Setting	Default
Institution	College of Pharmacy · Gulf Medical University
Default institutional cut score	60%
Minimum judges / if fewer	5 / block the calculation
Score adjustment / rounding / decide on	Linear (V4) / nearest 0.1 / exact mark
Modified Cohen	90th percentile, exact value, K = cut ÷ 100
Zero scores	Cohen: treated as absent; other methods: counted as 0

Setting	Default
Recommendation threshold	30 students
Report options	Pass/Fail off, rationale off, analytics off, charts on, sign-off on, appendices on

Use **Settings › Profile** to export the policy and import it on colleagues’ computers.

14 Audit trail, help and self-check

Every key decision is recorded, and the calculations can be verified on your own computer.

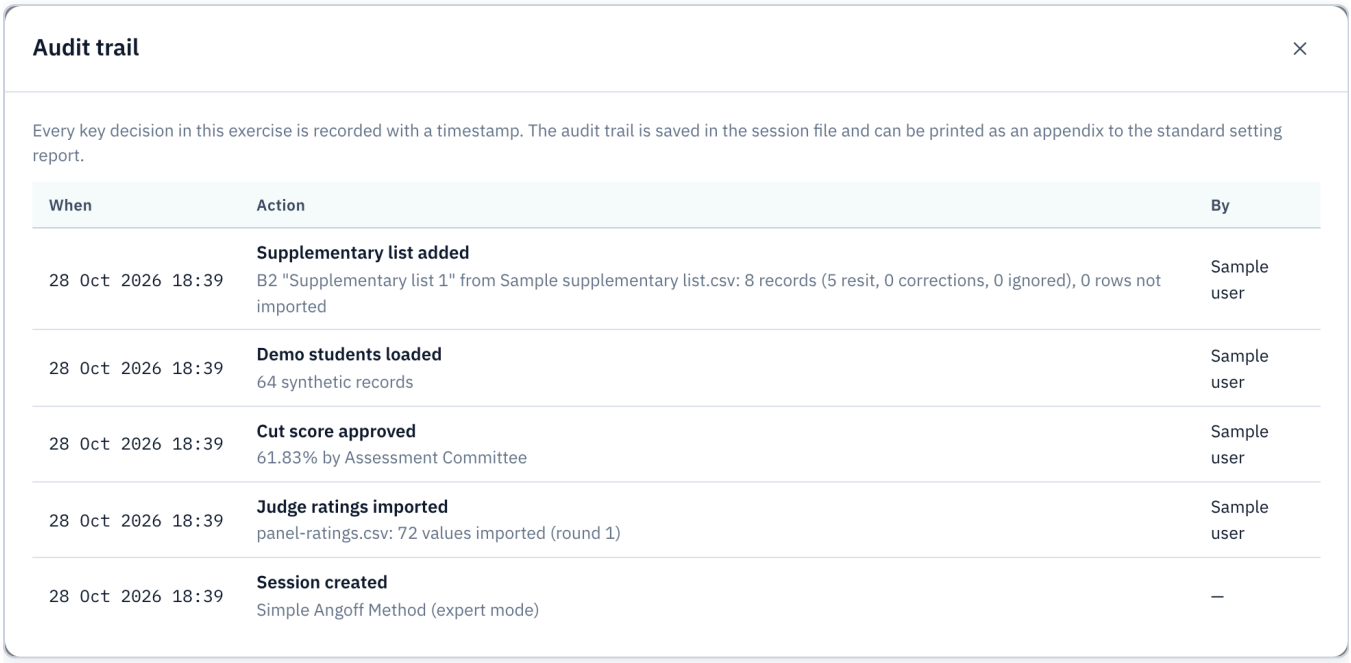


Figure 41. The audit trail (left menu): method choices, imports, approvals, unlocks and exports, with time and person.

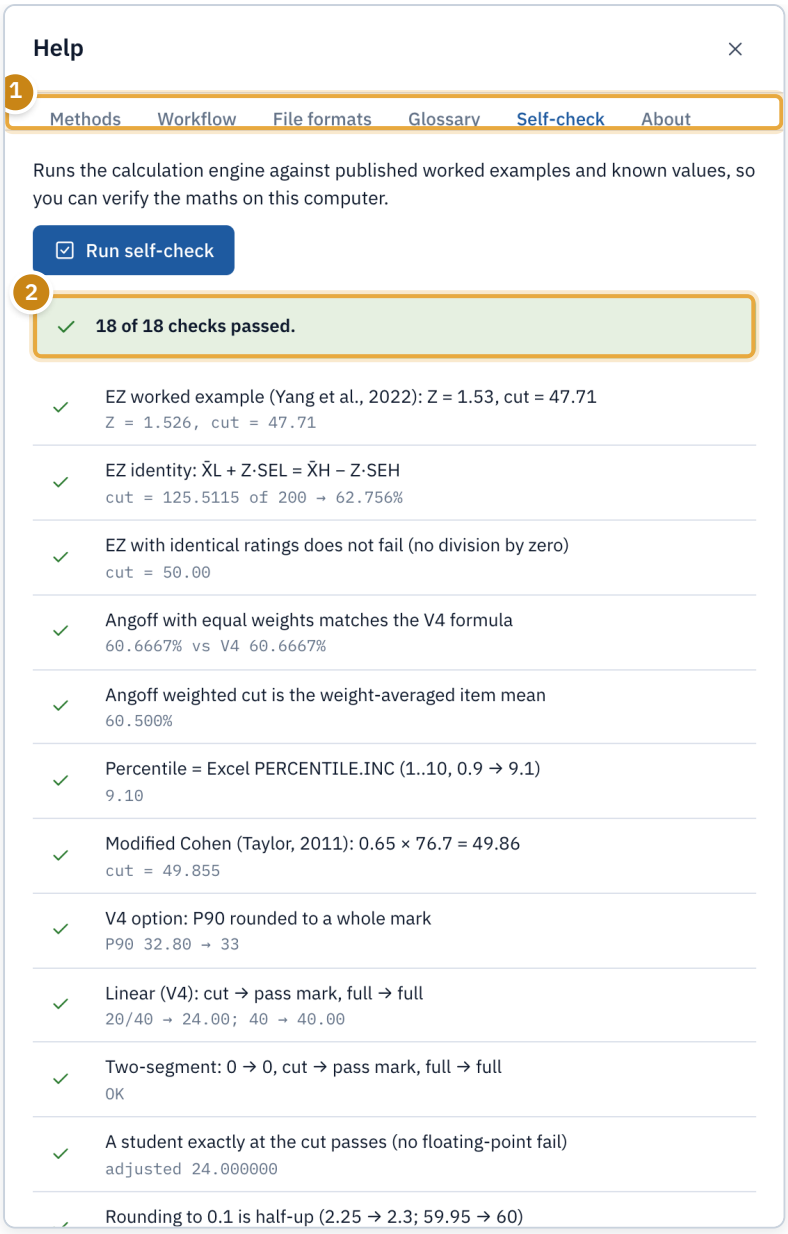


Figure 42. Help › Self-check recalculates published worked examples.

1. Help tabs: methods, workflow, file formats, glossary, self-check, about.
2. Result: all checks should pass.

> **Note** Unlocking an approved cut score always asks for a reason, which is stored in the audit trail and printed in the report appendix.

15 Phones, tablets and dark mode

3S adapts to small screens and to a dark theme.

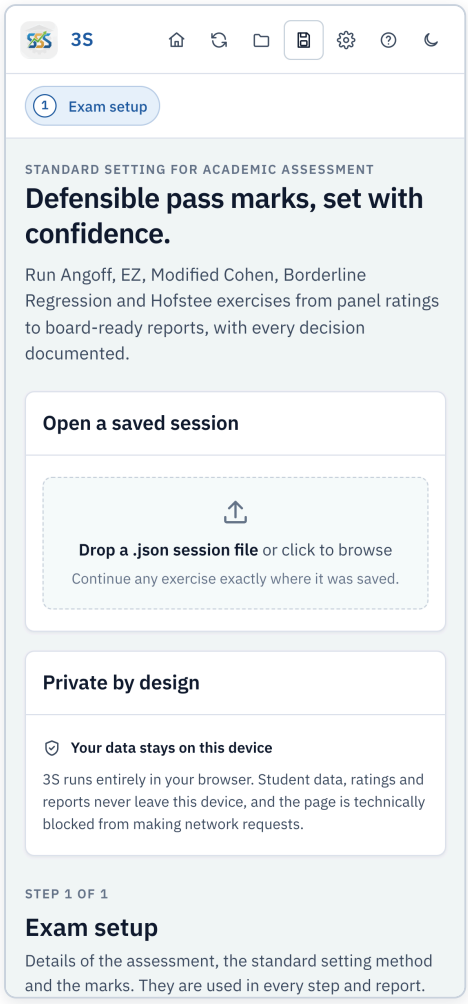


Figure 43. Phone: the Home page.

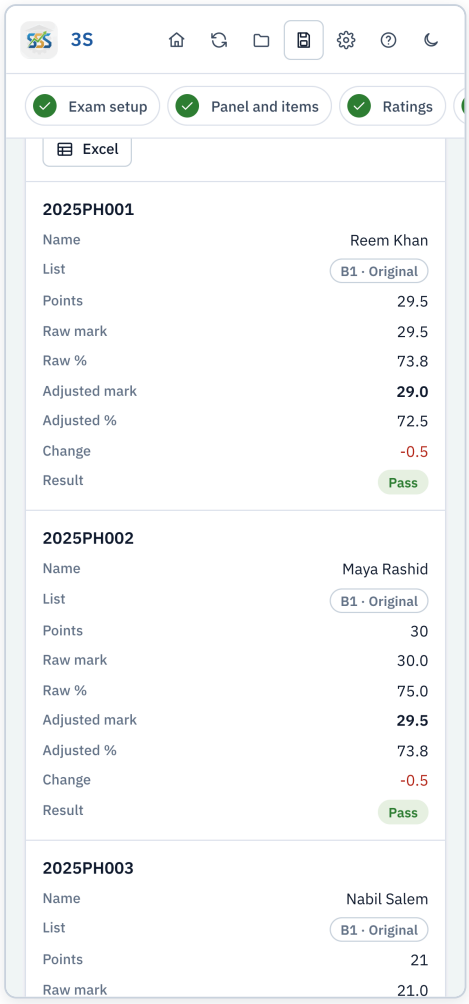


Figure 44. Phone: student results as cards.

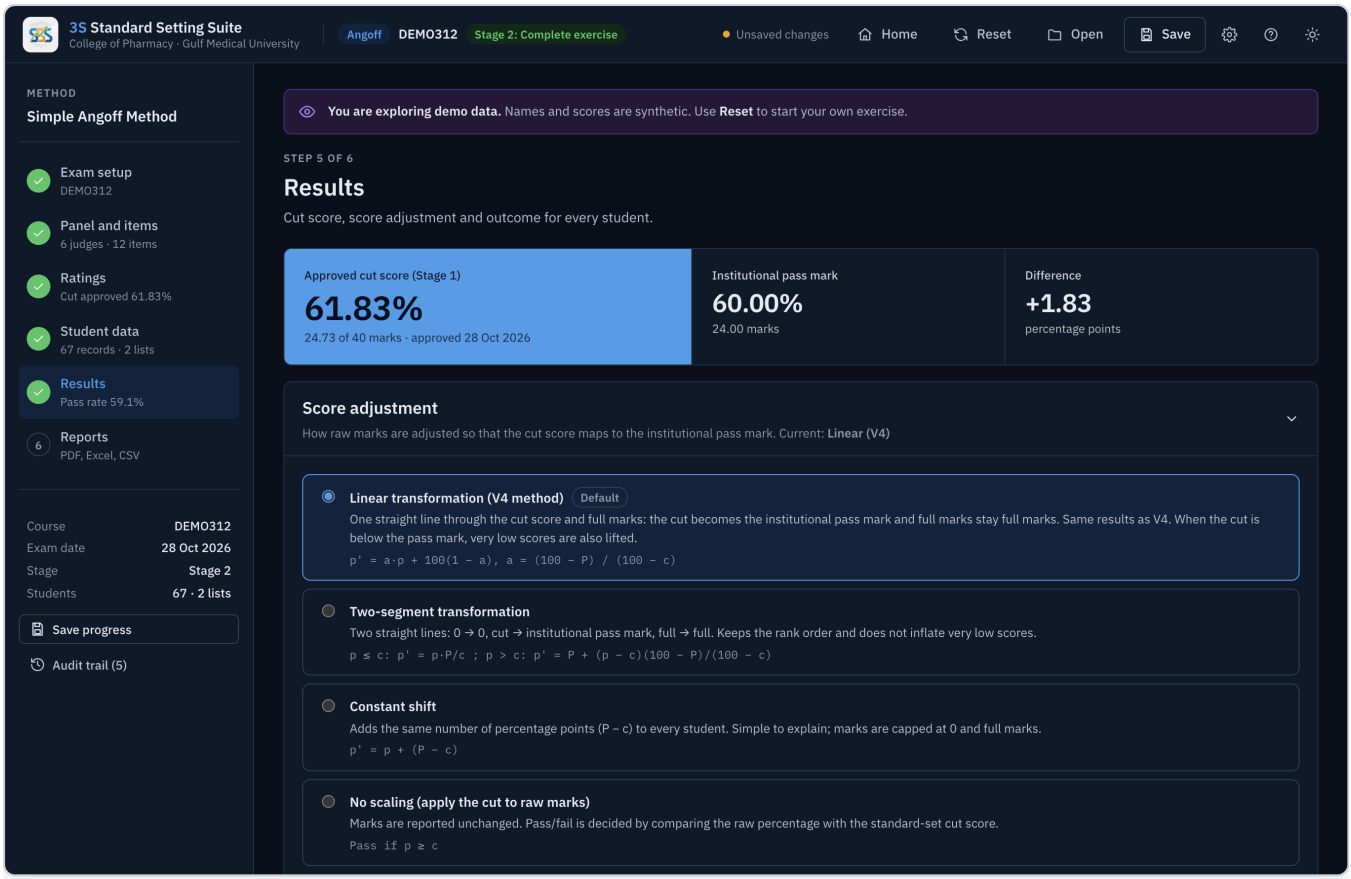


Figure 45. Dark mode (moon / sun icon in the top bar).

16 Troubleshooting and questions

Question	Answer
A step is greyed out.	Hover over it to see what is needed, for example approving the cut score first.
The cut score does not appear.	The panel under the ratings lists what is missing: empty or invalid ratings, too few judges, or exam setup fields.
My student file shows the wrong columns.	Make sure the first row holds the column titles, then pick the right column for Student ID, Name and Points.
Can I open old .xls files?	Yes, for student lists. Password-protected or Excel 95 files need to be re-saved as .xlsx or CSV.
Pass/Fail is missing from the Student Results Report.	Tick **Include Pass/Fail results** in the report preview; it is off by default.
I want to start again.	Click **Reset** (top bar). Save first if you want to keep the current exercise.
The PDF has no colours.	Enable “Background graphics” in the print dialog.
Where is my data stored?	Only on your computer: in the files you save and in the browser’s autosave.

Appendix A. Student file layout

Student ID	Student Name	Points	(other columns are ignored)
2025PH001	Aisha Khan	30	…
2025PH002	Omar Haddad	abs	…

Appendix B. Judge file layout

Judge	Item 1	Item 2	Item 3
Dr. A	65	70	75
Dr. B	60	68	72

For EZ, use two columns per station, for example “Dispensing L” and “Dispensing H”.

Appendix C. Glossary

Term	Meaning
Cut score	The score separating competent from not-yet-competent performance on this exam.
Institutional cut score	The default pass mark; adjusted marks are scaled so the cut score maps onto it.
Borderline student	A student just at the level of minimal competence.
P90	The score of the 90th-percentile student.

Term	Meaning
L / H	EZ: highest failing and lowest passing score per station.
SE	Standard error of the mean (SD ÷ √n).
Supplementary list	Students added after the first processing, such as late or resit candidates.
Earlier attempt	A superseded record kept as history for a resit student.

Keyboard shortcuts

Keys	Action
Ctrl/Cmd + S	Save the session file
Arrow keys, Enter	Move in the rating grid
Esc	Close a dialog
Browser Back	Previous step or close a dialog, without leaving 3S