Assessment for Learning
Designing an Alternative to Grades

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Grading Scale

- Converts scores to grades
  - **Cut points** divide scores into categories
- Grades are still treated as qualitative differences
  - Categories are interpreted as different kinds of student
  - No one cares about differences within a category
Traditional Grades

- Points and grades communicate value but not meaning
  - Provide information about how well you performed
  - Don’t provide information about how you performed
  - Interpreting and acting on results is hard
  - Promote a fixed mindset
**Grades + Feedback**

<table>
<thead>
<tr>
<th>Comments group</th>
<th>Grades group</th>
<th>Grades plus Comments group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session 1</td>
<td>M</td>
<td>High 19 Low 10 High 19 Low 10</td>
</tr>
<tr>
<td>Session 2</td>
<td>M</td>
<td>High 25 Low 17 High 16 Low 12</td>
</tr>
</tbody>
</table>

**Comments**

“Maybe it is possible to think of [more; more different; more unusual] ideas.”

**Grades**

“Here is how you did relative to the other students in your class.”

Grades + Feedback

<table>
<thead>
<tr>
<th>Comments group</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Percentage of subjects recalling evaluation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comment alone</td>
<td>84 (93\textsuperscript{a})</td>
<td>---</td>
</tr>
<tr>
<td>Grade alone</td>
<td>---</td>
<td>89</td>
</tr>
<tr>
<td>Grade plus Comment</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

\textsuperscript{a} --- per cent who recalled only one component of the comment.

Comments

“Maybe it is possible to think of [more; more different; more unusual] ideas.”

Grades

“Here is how you did relative to the other students in your class.”

Grades + Feedback

• If you give students grades and feedback, students don’t learn from the feedback
Traditional Feedback

- Corrections and comments communicate meaning but at a cost
  - Provide information about how you performed
  - Don’t provide information about how far you’ve progressed
  - Provide too much information
  - Interpreting and acting on results is hard
  - Promote a fixed mindset
Competency-Based Reporting

- Reporting performance on each standard or skill
- Provides information on strengths and weaknesses

### Linear Equations and Functions Assessment

**Standards Cover Sheet**

<table>
<thead>
<tr>
<th>STUDENT NAME:</th>
</tr>
</thead>
</table>

**Content Standards Key:**

- 3 = Meeting standard. Demonstrates solid knowledge and understanding.
- 1 = Not meeting grade level standard. Showing minimal progress.

<table>
<thead>
<tr>
<th>Problem #</th>
<th>Standard Addressed</th>
<th>LEVEL</th>
<th>Precision Error</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8.EE.5-a: Graph by making a table</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>8.F.1-c: Identifying a solution to a linear equation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3a</td>
<td>8.F.4-g: Writing a function</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3b</td>
<td>8.F.1-b: Domain and range</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>8.F.4-c: Slope</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>8.F.4-a: Slope</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Alternative Grading Scales

- Lipstick on a pig
  - Still based on cut points
  - Perfect is still the target

- Lipstick on an **uglier** pig
  - Milestones less well defined
  - Harder to understand
  - Time consuming to calibrate
Alternative Grading Scales

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Progress Maps

Sequence of learning objectives

- Step 1
- Step 2
- Step 3
- Step 4
- Step 5

- Problems
  - Linear equations → quadratic equations
- Concepts
  - Mass → density → buoyancy
- Skills
  - Analysis → evaluation
### Progress Maps

**Sequence of learning objectives**

**Communication**

<table>
<thead>
<tr>
<th>Accurate</th>
<th>Sufficient</th>
<th>Efficient</th>
<th>Precise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correctly describe procedures, findings, etc.</td>
<td>Provide <em>all</em> the information the audience needs to understand and evaluate the analysis</td>
<td>Provide <em>only</em> the information the audience needs in a way that makes it easy to digest</td>
<td>Use error- and distraction-free organization, formatting, word choice, grammar, etc.</td>
</tr>
</tbody>
</table>
## Progress Maps

### Sequence of learning objectives

<table>
<thead>
<tr>
<th>Explaining</th>
<th>Testing</th>
<th>Revising</th>
<th>Critiquing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesize initial explanations for patterns in the data</td>
<td>Gather evidence that supports the explanations and that calls them into question</td>
<td>Adjust the explanations to be more consistent with the data</td>
<td>Identify potential flaws and additional data to collect to further test the explanations</td>
</tr>
</tbody>
</table>
Progress Maps

Traffic light reporting

- **Move on**
  - Work on later steps
- **Proceed with caution**
  - Practice this step
- **Stop here**
  - Focus on learning this step

Not 100%, perfect, or “mastered”
**Progress Maps**

**Traffic light reporting**

<table>
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<td>Provide <em>only</em> the information the audience needs in a way that makes it easy to digest</td>
<td>Use error- and distraction-free organization, formatting, word choice, grammar, etc.</td>
<td>No comments</td>
</tr>
<tr>
<td>Positive comments</td>
<td>Things to fix or practice with <em>some</em> examples</td>
<td>Feedback on what to do differently</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
• Collection of progress maps
  • Not every progress map needs the same number of steps

Target

Analysis

Communication

Critical Evaluation

Application of Research Methods
Progress Profile

- Can be summarized with a grade if needed
  - e.g., reaching at least Target on all maps = B+

Diagram:

- Analysis
- Communication
- Critical Evaluation
- Application of Research Methods

Target
Progress Maps

- Progress maps communicate meaning and progress
  - Provide information about how you performed
  - Provide information about how far you’ve progressed
  - Provide just enough information
  - Interpreting and acting on results is easier
  - Promote a growth mindset
Model of Instruction

- Guides curriculum and pedagogy
  - Identifies intermediate learning objectives
  - Suggests a sequence for learning them
  - What is foundational and should be focused on first?
  - How do you build on that foundation?
Grades + Feedback

Traditional Grading Scale
- Reductive single grade
- Grade undermines feedback
- Feedback is specific to the assessment
- Too much feedback

Progress Profile
- Profile of strengths and weaknesses
- Feedback is foregrounded
- Students can apply feedback in future
- Students know what to focus on next
Traditional Grading Scale

- Reinforces a fixed mindset
- ‘A’ students don’t push themselves
- ‘F’ students give up

Progress Profile

- Reinforces a growth mindset
- Every student has a next step
- Every next step is within reach
Student & Teacher Roles

Traditional Grading Scale

- How points are assigned can be mysterious
- Students ignore feedback or use it to challenge grades
- Teacher often has to act as the judge

Progress Profile

- Progress maps make criteria explicit for everyone
- Students can interpret and act on results
- Teacher can focus on being the coach
Assessment Experience

Traditional Grading Scale

- People do it because they have to
- Assessment interrupts learning

Progress Profile

- People do it to collect useful info
- Assessment is another learning opportunity