2. What do I typically do to track student progress?

The teacher facilitates tracking of student progress on one or more learning goals using a formative approach to assessment.

<table>
<thead>
<tr>
<th>Teacher Evidence</th>
<th>Student Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher helps students track their individual progress on the learning goal.</td>
<td>When asked, students can describe their status relative to the learning goal using the scale or rubric.</td>
</tr>
<tr>
<td>Teacher assigns scores using a scale or rubric that depicts student status relative to the learning goal.</td>
<td>Students systematically update their status on the learning goal.</td>
</tr>
<tr>
<td>Teacher uses formal and informal means to assign scores to students.</td>
<td></td>
</tr>
<tr>
<td>Teacher charts the progress of the entire class on the learning goal.</td>
<td></td>
</tr>
</tbody>
</table>

How Am I Doing?

<table>
<thead>
<tr>
<th>4 Innovating</th>
<th>3 Applying</th>
<th>2 Developing</th>
<th>1 Beginning</th>
<th>0 Not Using</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracking student progress</td>
<td>I adapt and create new strategies for unique student needs and situations.</td>
<td>I facilitate tracking of student progress using a formative approach to assessment, and I monitor the extent to which students understand their level of performance.</td>
<td>I facilitate tracking of student progress using a formative approach to assessment, but I do so in a somewhat mechanistic way.</td>
<td>I use the strategy incorrectly or with parts missing.</td>
</tr>
</tbody>
</table>
Element 2: What do I typically do to track student progress?

**Strategies**

To create formative assessments, the teacher designs assessment tasks that correspond to 2.0, 3.0, and 4.0 content (as specified on the scale for each learning goal). For 2.0 content, forced-choice or selected-response tasks (multiple-choice, matching, true/false, or fill-in-the-blank items) are most appropriate. For 3.0 and 4.0 content, short or extended constructed-response tasks (short written or oral responses, essays, oral reports, demonstrations, or performances) are most appropriate.

The teacher can grade these assessments using a simplified scale (without half-point scores, see table C.1, page 89) or a complete scale. Following is the generic form of the complete scale (see table C.3).

**Table C.3: Generic Form of the Complete Scale**

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td>More complex learning goal</td>
</tr>
<tr>
<td>3.5</td>
<td>In addition to score 3.0 performance, partial success at score 4.0 content</td>
</tr>
<tr>
<td>3.0</td>
<td>Target learning goal</td>
</tr>
<tr>
<td>2.5</td>
<td>No major errors or omissions regarding score 2.0 content, and partial success at score 3.0 content</td>
</tr>
<tr>
<td>2.0</td>
<td>Simpler learning goal</td>
</tr>
<tr>
<td>1.5</td>
<td>Partial success at score 2.0 content, but major errors or omissions regarding score 3.0 content</td>
</tr>
<tr>
<td>1.0</td>
<td>With help, partial success at score 2.0 content and score 3.0 content</td>
</tr>
<tr>
<td>0.5</td>
<td>With help, partial success at score 2.0 content, but not at score 3.0 content</td>
</tr>
<tr>
<td>0.0</td>
<td>Even with help, no success</td>
</tr>
</tbody>
</table>

The following scale has specific content filled in for score values 2.0, 3.0, and 4.0 (see table C.4).

**Table C.4: Complete Scale With Learning Goals for Specific Content**

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td>Students will be able to explain why Europeans explored and established settlements on other continents including Africa, Asia, and Australia.</td>
</tr>
<tr>
<td>3.5</td>
<td>In addition to score 3.0 performance, partial success at score 4.0 content</td>
</tr>
<tr>
<td>3.0</td>
<td>Students will be able to explain why Europeans explored and established settlements in the Americas.</td>
</tr>
<tr>
<td>2.5</td>
<td>No major errors or omissions regarding score 2.0 content, and partial success at score 3.0 content</td>
</tr>
</tbody>
</table>

Continued on next page →
| Score 2.0 | Students will be able to recognize facts about European exploration and settlement in the Americas. |
| Score 1.5 | Partial success at score 2.0 content, but major errors or omissions regarding score 3.0 content |
| Score 1.0 | With help, partial success at score 2.0 content and score 3.0 content |
| Score 0.5 | With help, partial success at score 2.0 content, but not at score 3.0 content |
| Score 0.0 | Even with help, no success |

**Response patterns**

The teacher identifies response patterns by deciding which items on an assessment represent 2.0, 3.0, and 4.0 content and scoring each item using a coding scheme (for example, C = correct, I = incorrect, P = partially correct). A score can then be assigned using the following guidelines:

- All items correct = 4.0
- All 3.0 and 2.0 items correct, partial credit for 4.0 items = 3.5
- All 3.0 and 2.0 items correct, no 4.0 items correct = 3.0
- All 2.0 items correct, partial credit for 3.0 items and/or 4.0 items = 2.5
- All 2.0 items correct, no 3.0 or 4.0 items correct = 2.0
- Partial credit for 2.0 items, partial or no credit for 3.0 and/or 4.0 items = 1.5

If a student does not answer any items correctly or does not complete any items, the teacher should meet with that student to determine his or her score, using the following guidelines:

- Independently, no items correct; with help, partial credit for 2.0 and 3.0 items = 1.0
- Independently, no items correct; with help, partial credit for 2.0 items but not for 3.0 items = 0.5
- Independently, no items correct; with help, no items correct = 0.0

If the pattern of responses does not fit any of the previous guidelines, the teacher might drop flawed items from the assessment, reclassify items at a higher or lower score value (based on the class's responses), or meet with a student and ask the student to verify his or her understanding of the content from specific items the student missed. The student might complete exercises or design a task that shows his or her understanding.

**Individual score-level assessments**

The teacher uses assessments that evaluate only one level of a scale (for example, only 2.0 content) to measure students' procedural knowledge (which builds on itself and requires competency at one level before progressing to the next) or to allow students to progress at their own pace through the levels of a scale.
Different types of assessments

The teacher uses obtrusive assessments (which interrupt the flow of classroom activity), unobtrusive assessments (which do not interrupt classroom activities), or student-generated assessments. Obtrusive assessments might be paper-and-pencil tests, demonstrations and performances, oral reports, or probing discussions (one-on-one conversations between the teacher and a student). Unobtrusive assessments are usually observations when the teacher sees the student demonstrating a particular type of knowledge and records a score for that student. Student-generated assessments involve students proposing tasks that will demonstrate their level of knowledge for a specific learning goal.

Formative grading

The teacher uses one or more of several different approaches to grading, each of which is summarized as follows:

- **Approach 1**—Each assessment in a unit allows students to score at the 2.0, 3.0, or 4.0 level. The students graph their scores throughout the unit, and the teacher uses that group of scores to assign a summative score at the end of the unit.

- **Approach 2**—The first assessment in a unit allows students to score at the 2.0, 3.0, or 4.0 level. After the first assessment, students move at their own pace, taking individual score-level assessments to move up to the next level.

- **Approach 3**—The teacher administers individual score-level assessments to the entire class, only moving up to the next level once the majority of students in the class has mastered the content at the current level.

- **Approach 4**—The teacher assigns students scores at the end of each unit, but they are allowed to improve those scores at any time during the year by demonstrating their competence at higher score levels, usually using student-generated assessments.

Charting student progress

The teacher provides students with charts on which they can record their progress on a learning goal over time, such as the following (see fig. C.1, page 94).
Student Progress Chart
Keeping Track of My Learning

Name: Courtney
Learning goal: Make and defend inferences about the causes of the Civil War
My score at the beginning: 1.5. My goal is to be at 3.0 by November 17.
Specific things I am going to do to improve: Work 15 minutes three times a week.

Learning Goal: Making and Defending Inferences About the Causes of the Civil War

a. Sept. 12
b. Oct. 18
c. Nov. 9
d. 

e. 
f. 
g. 
h. 
i. 
Summative score: 3.0

Figure C.1: Student progress chart.
Source: Adapted from Marzano, 2010.

The student sets a learning goal at the beginning of the unit and then tracks her scores on that learning goal throughout the unit. At the end of the unit, the teacher assigns a final or summative score to the student for the learning goal being tracked (see column S in the figure).

Charting class progress

The teacher uses a whole-class tracking chart to create a snapshot of the progress of a group of students, such as the following (see fig. C.2).
Strategies for Reflective Practice

Class Progress Chart
Recording Student Achievement—Classroom

Teacher name: Mrs. Iosey
Measurement topic: Persuasive essays
Class/subject: Language arts Grading period/time span: 3rd Quarter
Total number of students represented on this graph: 95

![Graph showing progress]

1. 1-12 Holiday Celebrations Essay
2. 1-23 Pollution Essay
3. 2-3 Presidential Essay
4. 2-14 Valentine Essay
5. 2-29 Scientific Theory Essay
6. 3-8 Seasonal Essay
7. 3-21 Environmental Essay
8. 
9. 
10. 

Figure C.2: Class progress chart.
Source: Adapted from Marzano, 2006.

Technology Links

- Use learner response systems or voting websites (such as www.polleverywhere.com) to collect evidence of students' levels of learning.
- When using learner response systems, display voting results anonymously, and ask students to suggest activities that will help the class achieve the learning goals.
- Use social networking and other communication websites and devices to allow students to post and discuss what they understand and what they need more help with.
- Allow students to submit their work electronically (by email or as an online post). The teacher can provide feedback electronically, and students can respond to the feedback and resubmit their work.
- Use audio and video recordings to provide verbal feedback or to record teacher-student conferences for students to review later.
Design Question 1
What Will I Do to Establish and Communicate Learning Goals, Track Student Progress, and Celebrate Success?

Module 3

Designing and Using Formative Assessments

The Scale for Learning Goals introduced in Module 2 (see Figure 2.2) was designed with formative assessment in mind. In this module, we address how this scale can be used to design and score formative assessments and how those assessments can be used to provide students with feedback that can dramatically enhance their learning.

Typically, a teacher will progress through a unit of instruction and give an assessment at the end to summarize the learning of students. Although the teacher might give some shorter quizzes along the way, the clear emphasis is on the assessment at the end of the unit. End-of-unit assessments typically are referred to as “summative assessments.” The problem with relying on summative assessments only is that they don’t provide students with feedback while they are learning new content. If teachers knew exactly how each student was progressing through a unit, they might be able to provide additional assistance. Likewise, if students knew how they were progressing, they would have the opportunity to work harder or to ask for assistance. An approach that provides students with feedback right from the beginning is referred to as “formative.” Formative assessments are both powerful measurement tools and powerful instructional tools.

Reflecting on Your Current Beliefs and Practices

Before examining the strategies in this module, take some time to examine your current beliefs and practices by answering the following questions:
1. How well do you understand the defining characteristics of formative assessments? What are those characteristics?

2. How do you use formative assessments in your classroom?

3. What do you do to provide feedback to students consistently throughout a unit of instruction?

4. What do you do to show students that they have gained in knowledge throughout your units of instruction?

5. How do your grading policies support formative assessment?

**Recommendations for Classroom Practice**

This module addresses the following strategies for Design Question 1:
- Designing and scoring formative assessments
- Using a variety of types of assessments
- Keeping track of student progress over time
• Celebrating final status and knowledge gain
• Grading in a formative system

Designing and Scoring Formative Assessments

In Module 2 we introduced the scale depicted in Figure 3.1. In Module 2 we also explained that this generic scale should be translated into a specific scale for each learning goal in the unit. If a unit has two learning goals, two scales should be constructed. This is much easier than it might seem because a teacher need only identify content for Scores 2.0, 3.0, and 4.0.

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td>In addition to Score 3.0 performance, in-depth inferences and applications that go beyond what was taught.</td>
</tr>
<tr>
<td>3.5</td>
<td>In addition to Score 3.0 performance, in-depth inferences and applications with partial success.</td>
</tr>
<tr>
<td>3.0</td>
<td>No major errors or omissions regarding any of the information and processes (simple or complex) that were explicitly taught.</td>
</tr>
<tr>
<td>2.5</td>
<td>No major errors or omissions regarding the simpler details and processes (Score 2.0 content) and partial knowledge of the more complex ideas and processes (Score 3.0 content).</td>
</tr>
<tr>
<td>2.0</td>
<td>No major errors or omissions regarding the simpler details and processes but major errors or omissions regarding the more complex ideas and processes (Score 3.0 content).</td>
</tr>
<tr>
<td>1.5</td>
<td>Partial knowledge of the simpler details and processes (Score 2.0 content) but major errors or omissions regarding the more complex ideas and procedures (Score 3.0 content).</td>
</tr>
<tr>
<td>1.0</td>
<td>With help, a partial understanding of some of the simpler details and processes (Score 2.0 content) and some of the more complex ideas and processes (Score 3.0 content).</td>
</tr>
<tr>
<td>0.5</td>
<td>With help, a partial understanding of some of the simpler details and processes (Score 2.0 content) but not the more complex ideas and processes (Score 3.0 content).</td>
</tr>
<tr>
<td>0.0</td>
<td>Even with help, no understanding or skill demonstrated.</td>
</tr>
</tbody>
</table>

FIGURE 3.1

Scale for Learning Goals and Formative Assessments


To illustrate, assume that an elementary social studies teacher is teaching a unit on local economics. One of the learning goals she identifies is that students will understand how local economics contributes to the community. The specific scale the teacher might design for this learning goal is shown in Figure 3.2. As described in Module 2, this scale
would be translated, with teacher guidance, into student-friendly language. For Score 4.0, 3.0, and 2.0 content, the class as a whole would generate specific examples so that students have clear guidance as to expected outcomes.

The next task for the teacher is to design assessments that address the content in the scale. If a scale is well written, this is a fairly straightforward process, requiring only that

| FIGURE 3.2 |
| Scale for Local Economics |

| Score 4.0 | In addition to Score 3.0 performance, in-depth inferences and applications that go beyond what was taught, such as |
| Score 3.5 | In addition to Score 3.0 performance, in-depth inferences and applications with partial success. |
| Score 3.0 | While engaged in tasks that address economics throughout the world, the student demonstrates an understanding of important information, such as |
| | - Examples of uses of revenue in the local community (e.g., explaining and exemplifying how revenue in the community can be used for a specific purpose like staffing and maintenance of a community recreation center). |
| | The student makes no major errors or omissions. |
| Score 2.5 | No major errors or omissions regarding the Score 2.0 elements and partial knowledge of the Score 3.0 elements. |
| Score 2.0 | No major errors or omissions regarding the simpler details and processes, such as |
| | - Recognizing and recalling isolated details, such as |
| |  - permit fees help provide revenue to many local communities, |
| |  - some industries decline over time, and |
| |  - some types of work are available in each community throughout a state. |
| | However, the student exhibits major errors or omissions with Score 3.0 elements. |
| Score 1.5 | Partial knowledge of the Score 2.0 elements but major errors or omissions regarding the Score 3.0 elements. |
| Score 1.0 | With help, a partial understanding of some of the Score 2.0 elements and some of the Score 3.0 elements. |
| Score 0.5 | With help, a partial understanding of some of the Score 2.0 elements but not the Score 3.0 elements. |
| Score 0.0 | Even with help, no understanding or skill demonstrated. |

the teacher follow the content described in Scores 2.0, 3.0, and 4.0. To illustrate, the teacher who designed the scale in Figure 3.2 might write the following item for Score 2.0:

Provide an example or illustration for each of the following statements:
- Permit fees help provide revenue to many local communities.
- Some industries decline over time.
- Some types of work are available in each community throughout a state.

For Score 3.0, the teacher might construct the following item:

Write a short paragraph explaining how revenue in the local community can be used for a specific purpose. Provide examples of the type of revenue that would most likely be used for that purpose.

Finally, for Score 4.0, the teacher might construct the following item:

Select a specific business in the local community and analyze how the local economy has helped or hindered that business. Justify your reasons for making that determination.

These items would be combined in a single assessment like that in Figure 3.3.

Questions for Score 2.0 content typically employ the following formats: true-false items, multiple-choice items, fill-in-the-blank items, and short-answer items. Questions for Score 3.0 and Score 4.0 content typically employ constructed-response formats.

---

**FIGURE 3.3**

**Three-Part Assessment**

Part 1. Provide an example or illustration for each of the following statements:
- Permit fees help provide revenue to local communities.
- Some industries decline over time.
- Some types of work are available in each community throughout a state.

Part 2. Write a short paragraph explaining how revenue in the local community can be used for a specific purpose. Provide examples of the type of revenue that would most likely be used for that purpose.

Part 3. Select a specific business in the local community and analyze how the local economy has helped or hindered that business. Justify your reasons for making that determination.
would receive a score of 3.0. If the student answered all items in all three parts correctly, he would receive a score of 4.0.

Now let’s consider some other patterns. Suppose a student answered some of the items in Part 1 correctly but no others. The student would receive a score of 1.5, indicating partial credit on the simpler details and processes (i.e., the Score 2.0 elements). Now assume the student answered all items in Part 1 correctly and received partial credit on the items in Part 2. The student would receive a score of 2.5. Finally, assume the student answered the items correctly in Part 1 and Part 2 and received partial credit on the items in Part 3. The student would receive a score of 3.5. In summary, by analyzing the pattern of responses across the three different types of items (Score 2.0 items, Score 3.0 items, and Score 4.0 items), scores of 1.5 to 4.0 can be assigned. However, scores of 0, 0.5 and 1.0 require teacher-student interaction.

One thing common to the score values of 0, 0.5, and 1.0 is that they all include the phrase with help, meaning that the teacher must interact with students to determine these score values. We should make one caveat here. The implication is not that a teacher must meet with every student after every assessment. Rather, a teacher would meet only with those students whose responses on the assessment indicated no knowledge of the content. There will probably be very few such students for any given assessment. With these students, the teacher might go over specific assessment items, giving guidance and hints. For example, consider again the assessment in Figure 3.3. With a particular student the teacher might say, “Maria, let’s go over a few of these items. I know you understand a great deal of this because I’ve heard you answer some of these same questions in class. Let’s take the first question. Tell me what you remember about the permit fees. Let me give you some clues . . . .”

Based on the interaction with the student, the teacher could assign a score of 1.0, 0.5, or 0. If the student was able to answer some Score 2.0 items and some Score 3.0 items with help, she would receive a 1.0. If the student was able to answer, with help, Score 2.0 items correctly but not Score 3.0 items, she would receive a score of 0.5. If the student could not answer any of the items correctly even with help, she would receive a score of 0.

Examples

Elementary Geography. This elementary teacher is scoring a test she designed on the characteristics of political regions versus economic regions. She notices that a majority of her students have missed items that were supposed to be easy—Score 2.0 content. She realizes that this situation means she either didn’t do a very good job teaching that content or it was much harder than she thought. For this particular test, she recalibrates the item, now counting it as Score 3.0 content. She will discuss the item and review that content with students when she returns their papers tomorrow.

Middle School Science. This middle school science teacher has given a test on the topic of mutualism. One of her students has done quite poorly on the test, attempting to answer
only a few questions. During a conference with the student, she goes over some of the items, reminding the student of discussions in class. With the teacher's guidance and help, the student is able to answer some of the Score 2.0 items and Score 3.0 items. The student is assigned a score of 1.0 on the assessment.

**Activity Box**

Contrast the method of designing and scoring formative assessments described in this section with the method you use.

---

**Designing Individual Score-Level Assessments**

The scale in Figure 3.2 regarding local economics deals with content that is based on information. It is declarative knowledge. Let's consider content that is more process or skill oriented (content that is procedural knowledge)—and, at the same time, consider designing individual score-level assessments. To illustrate, recall the scale for causal relationships presented in Module 2. It is reproduced in Figure 3.4.

To assess the content in Figure 3.4, the teacher might have students read a particular story such as *The Outsiders*, which depicts the struggles between two classes of students in an urban high school in the 1960s. The teacher might give students two weeks to read the book. Instead of developing one assessment for this learning goal, she would design an assessment at the beginning of the unit to determine students' knowledge of the Score 2.0 content—in this case, students' ability to recognize parts of the text that provide information about important causal relationships. This might be done by providing students with questions like the following:

In the first chapter of the book, the author provides us with some specific clues that something will happen later on. What are some of those clues? What specific events look like they will cause other things to occur later on? What are some words or phrases that tell you something might cause something else to happen?

All students would answer this question, and the teacher would score their responses. For this assessment, the highest score students could receive would be a 2.0 because the assessment addresses only this level of the scale.
FIGURE 3.4
Scale for the Learning Goal of Understanding Causal Relationships

| Grade 8 |
|-----------------|-------------------------------------------------------------------------------------------------|
| **Score 4.0**   | In addition to Score 3.0 performance, in-depth inferences and applications that go beyond what was taught, such as:  
|                 | * Explaining how a complex causal relationship in one story is similar to that in another story.  
| **Score 3.5**   | In addition to Score 3.0 performance, in-depth inferences and applications with partial success.  
| **Score 3.0**   | While engaged in grade-appropriate reading tasks, the student demonstrates an ability to:  
|                 | * Describe complex causal relationships (e.g., observing that the plight of Anne Frank in The Diary of Anne Frank is the result of causes ranging from the policies of the Nazis in Amsterdam to the childhood of Adolf Hitler).  
| **The student exhibits no major errors or omissions.** |
| **Score 2.5**   | No major errors or omissions regarding the Score 2.0 elements and partial knowledge of the Score 3.0 elements.  
| **Score 2.0**   | No major errors or omissions regarding the simpler details and processes, such as:  
|                 | * Identifying literary clues that indicate complex causal relationships (e.g., recognizing specific words and phrases that signal complex causal relationships).  
| **However, the student exhibits major errors or omissions with Score 3.0 elements.** |
| **Score 1.5**   | Partial knowledge of the Score 2.0 elements but major errors or omissions regarding the Score 3.0 elements.  
| **Score 1.0**   | With help, a partial understanding of some of the Score 2.0 elements and some of the Score 3.0 elements.  
| **Score 0.5**   | With help, a partial understanding of some of the Score 2.0 elements but not the Score 3.0 elements.  
| **Score 0.0**   | Even with help, no understanding or skill demonstrated.  


After students had read the entire book, the teacher would design a second assessment, this time focused on Score 3.0 content. The question posed to students might be this:

In the end, the “rich kids” and the kids from the “other side of the tracks” saw that they were more alike than different. Describe the specific events that led to this awareness on both sides.
Activity Box

Which of the two methods of designing and scoring formative assessments do you like better—the one in which assessments include Score 2.0, 3.0, and 4.0 content or the one in which Score 2.0 content is assessed separately from Score 3.0 content, and Score 3.0 content is assessed separately from Score 4.0 content? Explain your reasoning.

Using a Variety of Types of Assessments

Formative assessments as described in this module will use a variety of types of items and tasks. Certainly many formative assessments will use traditional types of paper-pencil formats that involve true-false items, multiple-choice items, fill-in-the-blank items, and short constructed-response items. In addition to these traditional approaches to assessment, a teacher should include some nontraditional techniques. Here we consider three: (1) the probing discussion, (2) unobtrusive observation, and (3) student-generated tasks.

The Probing Discussion

As its name indicates, the probing discussion involves the teacher talking with a student one-on-one and asking the student to explain something or demonstrate something. The advantage to this approach is that the teacher can obtain very specific information about a particular student’s knowledge. For example, a social studies teacher working on a learning goal involving local economics would simply sit down with a student and ask her how the money made in the community might be used by the community for specific projects. While doing so, the teacher could probe more deeply and determine the depth of the student’s knowledge by asking clarification questions. The teacher could also guide the inquiry to cover all aspects of the topic. If the Score 2.0 components on the scale addressed information about permit fees, the decline of certain industries, and specific types of work available in the community, the teacher could make sure these elements were addressed by the questions she asked. The student’s response to the probing discussion would be scored using the scale and entered into the teacher’s grade book. In short, a probing discussion can provide a comprehensive picture of a student’s knowledge because of the flexibility it provides the teacher in terms of addressing all the content in a particular scale.
Unobtrusive Observation

Unobtrusive observation means that the teacher observes a student demonstrating a particular type of knowledge without necessarily interacting with the student. For example, assume that a teacher has a learning goal that deals with solving a particular type of mathematics problem, such as computing the area of irregular shapes. The teacher might observe a student working on a problem of this type and notice that his methodology and answer are both correct. The teacher would score the student using the scale designed for this objective and enter the score into the grade book.

Student-Generated Tasks

A powerful assessment alternative is to have students generate their own tasks to demonstrate competence for specific values of the scale. To use this approach, a teacher would typically begin by designing and administering an assessment on a specific learning goal. Each student would have a score on this initial assessment. For example, one student might have a score of 2.0, indicating knowledge of the basic content, and another student might have a score of 3.0, indicating knowledge of the basic content and the more complex content that is explicitly taught. Next, the teacher would ask students to identify or design tasks that would warrant their moving up to the next score value. The student with a score of 2.0 might propose that she will write a brief explanation of the Score 3.0 content to move to that level. The student with a score of 3.0 might propose that he give a brief oral presentation involving the Score 4.0 content to justify moving to that level. The point here is that students take the responsibility for providing evidence that they should move to the next level of the scale.

Examples

Middle School Art. This teacher has designed a scale for a specific brushstroke technique. She notices that Andre is using the technique precisely while working on a specific painting and is even making adaptations beyond what was taught. In her grade book she records a score of 4.0 for this unobtrusive observation.

Elementary Science. As a form of formative assessment, this science teacher periodically asks individual students to come up to her desk and has a discussion with them about a specific learning goal. She does not provide hints or clues to the student. Rather, she asks the student to go into more depth regarding specific topics and to clarify specific answers. This type of interaction allows her to address the full range of content in a scale during one discussion with a student. She uses these discussions as a valuable form of formative assessment.
Activity Box

Describe ways you might use probing discussions, unobtrusive observations, or student-generated tasks to assess students.

Keeping Track of Student Progress over Time

Throughout a unit, students should graph their progress on specific learning goals. A graph of this sort is depicted in Figure 3.5. In this example, six scores have been recorded. The first assessment was on February 5; the next assessment was on February 12, and so on. The student's first score was 1.5, then 2.0, and so on. The student's final score in the set was 3.0. Graphically displaying student progress like this can be a powerful motivational tool because students can see their progress over time.

FIGURE 3.5
Tracking Student Progress

Keeping Track of My Learning

Name: L.H.
Measurement topic: Proportions
My score at the beginning: 2, My goal is to be at 3 by Apr. 15.
Specific things I am going to do to improve: Work 15 min. three times a week

<table>
<thead>
<tr>
<th>Measurement Topic: Proportions</th>
</tr>
</thead>
<tbody>
<tr>
<td>a Feb. 5</td>
</tr>
<tr>
<td>b Feb. 12</td>
</tr>
<tr>
<td>c Feb. 20</td>
</tr>
<tr>
<td>d Feb. 28</td>
</tr>
<tr>
<td>e Mar. 12</td>
</tr>
<tr>
<td>f Mar. 26</td>
</tr>
<tr>
<td>g</td>
</tr>
<tr>
<td>h</td>
</tr>
<tr>
<td>i</td>
</tr>
<tr>
<td>j Final score</td>
</tr>
</tbody>
</table>
It is important to note that the teacher must assign a final score (the last column in Figure 3.5) for a learning goal based on her best judgment of the student’s final status. Certainly the student’s final score in the set (see Column f) is a good candidate for the final score. In this case that final score is a 3.0. If the teacher believes this is an accurate representation of the student’s true level of understanding or skill relative to the topic, then, indeed, 3.0 should be the final score. However, assume for a moment that the sample student depicted in Figure 3.5 received a final score on March 26 of 2.0. Would it be fair to assign this as the final score when the previous score is a 2.5? Students will vary in the scores they exhibit across a given topic for many reasons other than their knowledge. Sometimes they have good days; sometimes they have bad days. This is why teachers must use judgment when assigning a final score. If a student has a final score that is lower than previous scores or markedly higher than previous scores, the teacher should seek further information from the student so as to make an informed judgment about the student’s final status.

Examples

*Secondary Social Studies.* This social studies teacher is having students track their progress on their ability to analyze an opinion paper for bias. Students track their scores on the assessments on their individual progress charts. Periodically, students meet with the teacher to discuss how they might demonstrate competence at the next level of the scale.

*Elementary Reading.* This reading teacher has designed a scale to track students’ fluency while reading aloud. Periodically throughout the grading period, students read aloud in class and the teacher scores the students using the scale. Additionally, the students score themselves. Comparing and discussing these scores, the teacher and student come up with a score that reflects the student’s true status at that point in time.

### Activity Box
Describe how you might use or adapt the graphing approach to tracking student progress.

### Celebrating Final Status and Knowledge Gain

A unit of instruction should not end without celebrating student success. There are two approaches to doing so. The first and most common is to recognize final status—simply recognizing and celebrating each student’s final score on a scale for each learning goal.
In this scenario all students who received final scores of 4.0 for a given learning goal would be recognized, then all students who received a final score of 3.5, and so on.

A very different approach is to recognize knowledge gain for each student. Knowledge gain is the difference between where a student began the unit and where the student ended up. For example, consider the student in Figure 3.5. She started with a score of 1.5 and ended up with a score of 3.0. This represents a gain of 1.5 points on the scale. Over a unit or a quarter, the learning gain for each student on each learning goal can be represented on a bar graph.

One of the most powerful aspects of recognizing and celebrating knowledge gain is that virtually every student will have something to celebrate. One student might have started at a score of 2.0 for a given learning goal and ended up with a score of 3.5. Another student might have started with a score of 1.0 and ended up with a score of 2.5. Even though the final status for these two students is quite different (3.5 versus 2.5) their knowledge gain is the same—1.5 scale points.

Examples

*Elementary School Science.* This elementary science teacher has kept track of two learning goals over a three-week unit. At the end of the unit he has a celebration recognizing all students who attained final scores of 4.0 and 3.0 on the two objectives. He also acknowledges knowledge gain. He hands out certificates for gains of 0.5 points, 1.0 points, and so on. He finds that virtually every student has something to be proud of.

*Middle School.* All the teachers at Jefferson Middle School keep track of student progress on specific learning goals. At the end of each grading period, the school has two honor rolls. The first is traditional, celebrating final status on learning goals. The second is called the “on-a-roll.” It acknowledges and celebrates those students who have exhibited exceptional knowledge gain over the quarter.

**Activity Box**

Describe what you consider to be the relative merits of celebrating knowledge status and knowledge gain.

---

**Grading in a Formative System**

The final topic we address in this module is grading. Specifically, we address the following question: How does one grade when using rubrics or scales to track progress on learning
goals? The most straightforward approach would be to numerically summarize student status across various learning goals. For example, assume that for a given grading period a teacher addressed six learning goals. Two were addressed during the first three-week unit, two during the next three-week unit, and two during the last three-week unit. Also assume that a particular student received the following final scores for those six goals: 2.5, 3.0, 2.0, 4.0, 3.0, and 3.5. The numeric average of 3.0 would be a viable summary score representing typical final status for the student across the six learning goals.

In some schools teachers are required to use a scoring system like this:

- Advanced
- Proficient
- Basic
- Below Basic

To report student status using a system like this, a translation is required. Figure 3.6 shows one possible translation. To use this translation, the teacher would compute an average score for a student across the six learning goals as before, but she would then translate that average using the conversion shown for the four status categories. In this case, the student's average score of 3.0 across all six learning goals translates to the status of Proficient.

Many districts and schools use traditional $A, B, C, D,$ and $F$ letter grades. Again, a simple translation allows for this:

- $A = 3.00$ to 4.00
- $B = 2.50$ to 2.99
- $C = 2.00$ to 2.49
- $D = 1.00$ to 1.99
- $F = Below 1.00$

Finally, some districts and schools require an overall percentage score. To do this, the conversion scale in Figure 3.7 (or an adaptation of it) might be used. When translating to percentage scores, we recommend that teachers first translate scores for individual learning goals to a percentage score and then average those percentages. To illustrate, reconsider the following six rubric scores on six learning goals:
Learning Goal 1 = 2.5 = 80 percent
Learning Goal 2 = 3.0 = 90 percent
Learning Goal 3 = 2.0 = 70 percent
Learning Goal 4 = 4.0 = 100 percent
Learning Goal 5 = 3.0 = 90 percent
Learning Goal 6 = 3.5 = 95 percent
Average percent = 87.5 percent

Here the score of 2.5 on Learning Goal 1 translates to 80 percent, the score of 3.0 on Learning Goal 2 translates to 90 percent, and so on. The average of these percentage scores is 87.5 percent.

**FIGURE 3.6**
Conversion to Advanced, Proficient, Basic, and Below Basic

<table>
<thead>
<tr>
<th>Level</th>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced</td>
<td>4.0</td>
<td>In addition to Score 3.0 performance, in-depth inferences and applications that go beyond what was taught. Score 3.5: In addition to Score 3.0 performance, in-depth inferences and applications with partial success.</td>
</tr>
<tr>
<td>Proficient</td>
<td>3.0</td>
<td>No major errors or omissions regarding any of the information and processes (simple or complex) that were explicitly taught. Score 2.5: No major errors or omissions regarding the simpler details and processes (Score 2.0 content) and partial knowledge of the more complex ideas and processes (Score 3.0 content).</td>
</tr>
<tr>
<td>Basic</td>
<td>2.0</td>
<td>No major errors or omissions regarding the simpler details and processes but major errors or omissions regarding the more complex ideas and processes (Score 3.0 content). Score 1.5: Partial knowledge of the simpler details and processes (Score 2.0 content) but major errors or omissions regarding the more complex ideas and processes (Score 3.0 content).</td>
</tr>
<tr>
<td>Below Basic</td>
<td>1.0</td>
<td>With help, a partial understanding of some of the simpler details and processes (Score 2.0 content) and some of the more complex ideas and processes (Score 3.0 content). Score 0.5: With help, a partial understanding of some of the simpler details and processes (Score 2.0 content) but not the more complex ideas and processes (Score 3.0 content). Score 0.0: Even with help, no understanding or skill demonstrated.</td>
</tr>
</tbody>
</table>

FIGURE 3.7
Conversion Scale to Percentages

<table>
<thead>
<tr>
<th>Scale (Rubric) Score</th>
<th>Percentage Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td>100</td>
</tr>
<tr>
<td>3.5</td>
<td>95</td>
</tr>
<tr>
<td>3.0</td>
<td>90</td>
</tr>
<tr>
<td>2.5</td>
<td>80</td>
</tr>
<tr>
<td>2.0</td>
<td>70</td>
</tr>
<tr>
<td>1.5</td>
<td>65</td>
</tr>
<tr>
<td>1.0</td>
<td>60</td>
</tr>
<tr>
<td>Below 1.0</td>
<td>50</td>
</tr>
</tbody>
</table>

Examples

_{Elementary Language Arts.} Over a nine-week period, this elementary language arts teacher has obtained final status scores for her students on five learning goals. Her school requires that she assign one of the following categories to each student: Advanced, Proficient, Basic, or Below Basic. These categories must be assigned as an overall language arts score. The teacher averages the five final status scores for each student and then translates the average score to the categories required by the district.

_{High School Biology.} This biology teacher has tracked students’ progress on seven goals over the nine-week quarter. He has to use percentage scores on the report cards, so he converts the final scores on learning goals into percentages. Even though the report card in his school is very traditional, he believes he has a powerful system that allows students to see not only their final status on specific learning goals but also their knowledge gain.

Activity Box

Which of the grading techniques presented in this section do you prefer? Explain your answer.
Checking for Understanding

Use the following rating scale to assess your current level of understanding and your comfort level regarding the key strategies and processes presented in this module:

4 = I understand and already fully implement this strategy in my classroom.
3 = I understand this strategy, but I need to practice using it in my classroom.
2 = I can explain this strategy, but I am not fully confident that I can use it.
1 = I do not understand this strategy, and I do not currently use it in my classroom.

1. Designing and scoring formative assessments

Based on my rating, I may need to revisit the following:

2. Using a variety of types of assessments

Based on my rating, I may need to revisit the following:

3. Keeping track of student progress over time

Based on my rating, I may need to revisit the following:

4. Celebrating final status and knowledge gain

Based on my rating, I may need to revisit the following:

5. Grading in a formative system

Based on my rating, I may need to revisit the following: