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Effective Grading
A Tool for Learning and Assessment

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Making Assignments Worth Grading

The way to save time, make every moment count, and integrate grading, learning, and motivation is to plan your grading from the first moment you begin planning the course and to consider not only how you will shape goals but how your students will. To do otherwise—to regard grading as an afterthought—is to create wasted time, dead-end efforts, and post-hoc rationalizations as students question their grades. The first step in course planning is to make sure that the assignments and tests assess the learning you and your students most want to achieve. Such planning makes the time you spend grading exams and assignments worthwhile.

To help ensure that your time is well spent and that your grading leads to learning, we present six suggestions we have found most helpful for ourselves and for the faculty in our workshops. The suggestions follow a course-planning sequence:

1. Begin by considering what you want your students to learn.
2. Select tests and assignments that both teach and test the learning you value most.
3. Construct a course outline that shows the nature and sequence of major tests and assignments.
4. Check that the tests and assignments fit your learning goals and are feasible in terms of workload.
5. Collaborate with your students to set and achieve goals.
6. Give students explicit directions for their assignments.

We now explore each of these suggestions in detail.

SUGGESTION 1
Consider What You Want Your Students to Learn

Effective grading practices begin when the teacher says to herself, By the end of the course, I want my students to be able to... Concrete verbs such as define, argue, solve, and create are more helpful for course planning than vague verbs such as know or understand or passive verbs such as be exposed to. If you write, “I want students to think like economists,” elaborate on what that means. How does an economist think? Which aspects of that thinking do you want to cultivate in students?

When asked what he wanted students to be able to do by the end of his Western Civilization course, here’s how John Breihan, who teaches history at Loyola College in Maryland, responded. Using data gathered during a study of Breihan’s classroom (Walvoord and Breihan, 1991), we’ll follow more of Breihan’s course planning, teaching, and grading practices in this and subsequent chapters.

At the end of Western Civilization [a 100-level general education course for first-year students], I want my students to be able to

- Describe basic historical events and people
- Argue as a historian does:
  Take a position on a debatable historical issue
  Use historical data as evidence for the position
  Raise and answer counterarguments

Here’s an example from a math professor:

At the end of this math course, I want my students to be able to

- Solve [certain kinds of] mathematical problems
- Explain what they’re doing as they solve a problem and why they’re doing it

An instructor in a dental hygiene department responded this way:

At the end of the course, I want my students to

- Pass the state and federal board questions which deal with my area
- Demonstrate habits of critical thinking and problem solving
- Establish trust and cooperation with their patients

Here are examples from other teachers:
• A speech pathologist wrote that she wanted her students to “synthesize information from various sources to arrive at intervention tactics for the client.”

• An economist wanted students to “use economic theory to explain government policies and their effects.”

• A faculty member in design had the goal of helping students “analyze a design problem.”

• A physicist was helping students “be able to state physical concepts in their own words and discuss what they don’t know.”

• Another physicist aspired to have students “exit with a sense of wonder.”

Walvoord tried to describe *creativity* for a first-year composition essay:

> By the end of this course, I want my students to write a clear, coherent, well-organized and well-informed essay that gives the reader a sense of focus and that is also creative—that is, it does not merely state the obvious or sound cut-and-dried. Instead, the student shows creativity by making unusual connections, looking at something in a fresh way, noticing unusual relationships or aspects of the topic, pushing beyond surface observations, challenging what others take for granted, or taking a risk with a rhetorical technique, an unpopular idea, or a difficult topic.

Don’t be afraid at this stage to write down goals you may not be able to measure exactly. Our favorite ineffable goal came from a faculty workshop participant in a swine management department. She established several specific objectives for her students such as “outline a financial plan for a swine operation.” But at the end she wrote that she wanted her students to “appreciate the pig.” She said, “I can’t measure that, and I don’t know how to test it, but it’s important to me and my students, and I won’t give it up!” We didn’t think she should. Several of her workshop colleagues volunteered ideas (not all of them completely serious, we’ll admit) about how she could measure her students’ appreciation of the pig. Despite the hilarity, the point was serious: when you have goals that are ineffable but important, don’t let the quest for measurable or behavioral objectives dissuade you from those goals. Do your best to pin down how you recognize those qualities in student work. You may not be able to measure or grade everything that you care about, but at this early planning stage, we urge you to include your most precious goals. The sources in Resource 3.1 will help with concepts and phrasing to describe various kinds of student learning.
Resource 3.1.
Sources to Describe Learning Goals and Objectives.

All Disciplines

Angelo and Cross, 1993. Based on responses from nearly three thousand faculty members. Chapter Two presents fifty-two possible learning goals and a worksheet for faculty to identify and rank their own goals.


Bloom, 1956. Taxonomy of educational objectives both intellectual and affective. (See also Tittle and others, 1993.)


Gardiner, 1994. Review of research lists key student competencies identified by business, government, and educational leaders.

Gardner, 1983. Proposes a theory of multiple intelligences; implies new types of learning goals for education.

Greenwood (ed.), 1994. In preparation for national assessment of college students' learning, authors identify competencies in citizenship, critical thinking, problem solving, speaking and listening, reading and writing. (See especially p. 73 ["Seven Dispositions/Abilities for Good Thinking"], p. 73 ["Some Basic Problem Types"], and pp. 94–97 [References].)

Harrow, 1972. Behavioral objectives for psychomotor skills.


Jones and others, 1995. Reports a study of the views of faculty, employers, and policy makers on essential skills.

Mentkowski and Strait, 1983. Learning objectives and assessment at Alverno College. (Also ask for updated materials on learning and assessment at Alverno.)

National Center for Education Statistics, 1995. Attempt to identify skills that college graduates should possess in writing, speaking, listening, and critical thinking.

National Standards Project, forthcoming. The U.S. Department of Education, other federal agencies, and foundations have made grants to major professional and scholarly organizations to develop voluntary national standards for K–12 students in different subjects (math, arts, civics and government, geography, history, science, English, foreign languages). There are separate standards for content and performance. The standards are quite controversial, but they do provide language to describe what students should be able to do, and that language can be useful at the college level.


Powers and Enright, 1987. Reports a study of faculty views on skills needed for graduate study.


Rock, 1991. Ways to measure and teach higher-order cognitive skills.

Individual Disciplines

Search the ERIC database, using as descriptors:

• One or more of these subject headings:
  Competence
  Competency-Based Education
  Critical Thinking
  Education Outcomes
  Educational Assessment
  Educational Objectives
  Employment Qualifications
  Evaluation
  Evaluation Criteria
  Thinking Skills
• U.S.
• The level of education you want to include (such as higher education)
• The name of your discipline (For areas such as art, history, and health, which will be used in many contexts, add the word education [for example, art education, health education] or the word instruction [for example history instruction, mathematics instruction]. For English, use college English or writing [composition] or literature.)

Here are some references that emerged from such a search:

Science, Math, Engineering
American Association for the Advancement of Science, 1993
Lawson, Abraham, and Renner, 1989
Shavelson, 1991

Career and Technical
Felstehausen, 1995

Business
Sormunen, 1992
SUGGESTION 2
Select Assignments and Tests That Measure What You Value Most

Because grading is perhaps one of the most labor-intensive things faculty do, why spend the time grading work that doesn't address your most important goals? Try to ensure that any assignments, tests, and exams that you give and grade will teach and test the knowledge and skills you most want students to learn.

Some research indicates that many faculty do not achieve a good fit between the learning they say they want and the tests and assignments they actually give:

Faculty often state that they are seeking to develop students' abilities to analyze, synthesize, and think critically. However, research indicates that faculty do not follow their good intentions when they develop their courses. A formal review and analysis of course syllabi and exams revealed that college faculty do not in reality focus on these advanced skills but instead are far more concerned with students' abilities to acquire knowledge, comprehend basic concepts or ideas and terms, and apply this basic knowledge [National Center for Education Statistics, 1995, p. 167].

To ensure that your assignments and tests are assessing the learning you most care about, we suggest you use the sources listed in Resource 3.2, which includes a fuller treatment.

In this section we emphasize three main concepts that appear crucial to the validity and the motivational power of your tests and assignments:

1. Choose assignments that are likely to elicit from your students the kind of learning you want to measure. A combination of careful forethought, knowledge of your own students, and analysis of your students' work are the keys here. For example, the mathematician we mentioned who wanted his students to solve problems and explain the process realized that his existing testing and grading were putting too much emphasis on merely getting the right answers. So he added a requirement to some of his assignments and exams: students had to draw a vertical line down the center of a page, dividing it into two columns. In one column they solved the problem. In the opposite column they wrote in sentences, for each step, what they did and why they did it.

A psychologist with whom we worked wanted students to think critically. She was very proud of herself for giving essay tests—not just multiple-choice tests—in an introductory psychology course with a class of ninety students and no TA (teaching assistant). But when, in a workshop, she looked carefully at her grading processes and criteria, she saw that she was judging primarily mastery of facts,
Resource 3.2.

Sources About Assignment and Test Construction.

Anderson, Ball, Murphy, and Associates, 1975. Comprehensive encyclopedia, including technical aspects of test design.
Boud, Dunn, and Hegarty-Hazel, 1986. On laboratory skills.
Clegg and Cashin, 1986. Short summary on improving multiple-choice tests.
Dressel, 1976. Includes sections on basic considerations and on evaluating student experience and educational progress.
Haladyna, 1994. On developing and validating multiple-choice tests.
Jacobs and Chase, 1992. Handbook for faculty on test construction, validity, and reliability; advice for various types of tests. Includes section on computer-assisted testing.
Lowman, 1995 and 1996. General overview of testing and assignment-making, with special attention to motivation. (See in particular pp. 184-209 in the 1995 listing.)
Rock, 1991. How to test higher-order cognitive skills.
Scriven, 1991. Suggests replacing multiple choice with “multiple rating” formats, in which the student rates each member of a set. Claims this format avoids weaknesses of multiple-choice format.
Tobias, 1996. Based on previous studies of science departments, science teaching, and science students, recommends new practices for in-class exams in college-level science.
Weinstein, Goetz, and Alexander, 1988. Links testing to learning and study strategies.
vocabulary, and basic concepts. She promptly instituted a multiple-choice test for that elementary knowledge, and she focused her valuable grading and responding time on a take-home essay that truly elicited synthesis and evaluation from the learners.

Pay attention to what you name your assignments and tests and what those names mean to your students. A sociologist was asking for a "term paper" from his students and getting encyclopedia-based reports that did not meet his goals for the assignment. In a workshop, when asked to define what he really wanted, he realized he wanted a review of the literature, so he began to call it that. Two positive results ensued. First, students no longer imported notions of the term paper as an encyclopedia-based pastiche of paraphrased material on a topic; they had never written a review of the literature before, so they knew they had to listen very carefully to his instructions about the assignment. Second, he was forced to clarify for them and for himself what he meant and to teach them how to write a review of the literature.

Pay attention also to how polished or finished an assignment must be in order to fulfill your goals. A political scientist has his students construct a set of questions for a major term paper, compile an annotated bibliography, then write the introduction—but he does not have them complete the whole paper. He says, "By the time they've done the annotated bibliography and the introduction, they've learned what I most want them to learn."

The most important point is that a test or an assignment is a valid measurement only if it elicits from your students the kinds of learning you want to measure.

2. Choose assignments that are interesting and challenging to your students. The kinds of assignments and tests you give will influence students' motivation (Baird, 1987; Lowman, 1995, 1996). Consider creative kinds of assignments without being carried away by something "cute" that doesn't meet your needs. For example, an American historian asked students to write diary entries for a hypothetical Nebraska farm woman in the 1890s. He liked this assignment because it required that students know about economics, social class, transportation, gender roles, technology, family relations, religion, diet, and so on; yet it also gave students a chance to use their imaginations. He found that if he was explicit about his desire for them to use the diary to display the breadth of their historical knowledge, the assignment achieved his learning goals in an enjoyable way (see Appendix B for a list of types of assignments; see also Gibbs, Habeshaw, and Habeshaw, 1986).

3. Use peer collaboration. Do not automatically consider that every test or assignment must be completed by the individual student in isolation; consider assignments and tests that students complete in groups. An obvious advantage is that if students com-
plete an assignment in groups of four, you have one-fourth as many pieces of work to grade; but collaborative assignments can also have strong pedagogical and motivational advantages. One advantage is the power of peer interaction. As Astin (1996) puts it, summarizing his comprehensive study of factors that influence college students’ learning, “The strongest single source of influence on cognitive and affective development [in college] is the student’s peer group. . . . [T]he study strongly suggests that the peer group is powerful because it has the capacity to involve the student more intensely in the educational experience” (p. 126). Assignments that get students involved with one another and with the teacher may draw on this powerful force. Further, when well managed, collaborative work can increase students’ sense of their own control and power in the classroom (Perry, Menec, and Struthers, 1996).

The evidence for the potential of collaborative work to enhance student learning is so strong that a group of scholars, reviewing the literature on student learning and pedagogy, included cooperation among students as one of seven “principles of good practice” for undergraduate education (Chickering and Gamson, 1987). When poorly managed, however, collaborative assignments can decrease students’ sense of control and increase their anxiety and anger. Careful planning and guidance of students is crucial to success.

Suggestions for designing and managing collaborative assignments can be found in the literature on collaborative learning or cooperative learning—increasingly, the two terms are used to distinguish two ways of managing group learning. Resource 3.3 offers some sources.

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**Resource 3.3.**

**Sources About Collaborative and Cooperative Learning.**

The most important principle to remember is that successful group assignments are those that can be better done by the group than by an individual student. You must build into the task the qualities that will make it more productive for students to work together than to work alone. If you do that, the group’s motivation to work together, to solve group tensions, and to deal effectively with “free riders” (that is, nonparticipating students) will be strong.

SUGGESTION 3

Construct a Course Outline

Once you have decided the type of assignment or test you will give to students and its general features, the next step is to combine all your tests and assignments into a bare-bones course “skeleton” or outline so that you can see a broad profile of the course and can ask some important questions.

The course skeleton helps you see whether your assignments fit your course goals and whether they are manageable in terms of workload. The course skeleton helps you put together an “assignment-centered course.” Assignment here can mean a test, an exam, a project—any student task that teaches and tests student learning. Research suggests that the assignment-centered course enhances students’ higher order reasoning and critical thinking more effectively than the courses centered around text, lecture, and coverage (Kurfiss, 1988).

In the assignment-centered model, the teacher begins not by asking, What should I cover in this course? but What should my students learn to do? Coverage does not disappear under the assignment-centered model: basic facts, concepts, and procedures are still important; lectures may be used as a pedagogical device; textbooks may be assigned and read. However, the course planning process begins by focusing on the assignments, tests, and exams that will both teach and test what the teacher most wants students to know. The rest of the course is then structured to help students learn what they need to know if they are to do well on the tests and assignments. The course skeleton helps teachers achieve this initial focus on student learning.

To illustrate the difference between the assignment-centered model and the coverage-centered model, imagine a hypothetical teacher planning a Western Civilization course that is a general education requirement for first-year students. The hypothetical professor might first begin to think about the course when her department head says, “Jane, will you teach ‘Western Civ’ this fall?” She next checks (or composes) the catalogue description, which tells the content of the course: Western Civilization from
1500 to the end of the Cold War, emphasizing such-and-such themes. Now she plans the fifteen weeks, saying to herself, Let's see. I'd like to use Burke and Paine, Marx, Lafore, and Heart of Darkness in addition to the textbook. I'll cover 1500 to 1800 in six weeks and get through the French Revolution by midterm. Then in the second half of the course, I'll cover 1800 to the present. Her outline of the course might look like this:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Renaissance and Reformation</td>
</tr>
<tr>
<td>2</td>
<td>Seventeenth-Century Crisis</td>
</tr>
<tr>
<td>3</td>
<td>Absolutism</td>
</tr>
<tr>
<td>4</td>
<td>Age of Reason</td>
</tr>
<tr>
<td>5</td>
<td>French Revolution</td>
</tr>
<tr>
<td>6</td>
<td>Burke, Reflections, and Paine, Rights of Man</td>
</tr>
<tr>
<td>7</td>
<td>MIDTERM</td>
</tr>
<tr>
<td>8</td>
<td>Industrial Revolution</td>
</tr>
<tr>
<td>9</td>
<td>Marx, Communist Manifesto</td>
</tr>
<tr>
<td>10</td>
<td>Imperialism</td>
</tr>
<tr>
<td>11</td>
<td>Conrad, Heart of Darkness</td>
</tr>
<tr>
<td>12</td>
<td>World War I</td>
</tr>
<tr>
<td>13</td>
<td>Lafore, Long Fuse</td>
</tr>
<tr>
<td>14</td>
<td>World War I, World War II, and the Cold War</td>
</tr>
<tr>
<td>15</td>
<td>FINAL</td>
</tr>
</tbody>
</table>

Note that in her conversation with herself, the subject of her sentences is I. The most common verb is cover. This teacher is already well launched on the coverage-centered model. Next, she will compose her syllabus. It will go something like this:

Tues., Sept. 5: Social and religious background of the Renaissance and Reformation. Read ch. 1 and 2 in textbook.
Thurs., Sept. 7: Economic and political background of the Renaissance and Reformation. Read ch. 3 in textbook; Machiavelli handout.

When students first see this syllabus, they are likely to assume that in class the teacher will tell them about the topics. They might also assume that they need not necessarily read the chapter before they come to class, because the teacher will lecture. Thus the traditional course-planning process and the syllabus that results from it can trap both the faculty member and the students into the coverage-centered model.

Assessment in this coverage-centered scheme is also problematic. Once the teacher has filled in the topics she has to cover, she is likely to say to herself, I'll use essay tests at midterm and final, with questions on lecture, textbook, and supplementary readings.
The midterm will cover 1500 to 1800. I’ll have a comprehensive final, covering all the course material, but I’ll weight it in favor of 1800 to the present. And I’ll assign a term paper due near the end of the course. Students can choose which of the supplementary readings they’ll cover in their term papers.

In this coverage-centered planning process, the tests and papers are added at the end, and their implied role is to test coverage.

When asked what she wants students to achieve at the end of the course, this faculty member is likely to say that she wants students not merely to describe events but also to analyze and construct arguments about historical issues. However, her exams and term paper are not likely to elicit coherent arguments with full evidence and answers to counterarguments. Essay exams may be merely what one teacher calls “fact dumps.” Research indicates that many students experience school reading as a collection of discrete facts to be memorized and regurgitated on tests (Geisler, 1994). Further, some students have taken essay exams that were graded in this way: the teacher went through the student’s answer, placing a check mark next to every fact or idea that “counted,” and the student’s score was the total of the check marks. The smart person’s way of taking such a test is to dump as much information as possible as quickly as possible. Moreover, if the students see the exam question for the first time when they walk into the class and then have twenty minutes or fifty minutes to write a cogent argument, are they likely to produce a cogent, tightly argued, thoroughly logical essay?

There might also be problems in this class with the term paper. Students might submit cut-and-paste pastiches of library sources, following the “term paper” models they learned in other settings. Schwegler and Shamoon (1982) found that students they surveyed often described the term paper or research paper as a collection and combination of sources, not as an exploration, an analysis, or an argument. The term term paper may carry undesirable meanings for your students.

The true failure of the coverage-centered course is the set of assumptions it fosters about what school means:

- Sitting in lecture taking down what teachers say
- Studying lecture notes and the textbook the night before the test
- Regurgitating the right answers on the test

As part of a research project Walvoord and others conducted (Walvoord, McCarthy, and others, 1991), a student interviewed described to the interviewer her expectations on the first day of a
Western Civilization course: "I remember going in there thinking, O.K., this is just a basic history course, you know. It's not going to be a lot of work; you know what I mean. It's just going to be basically all lecture, and then I'm going to have to restate what he told me on an exam" (p. 99). Another student said, "I haven't done things like this before. In high school we took the answers straight from the book. I am not in the habit of developing arguments" (p. 102). The coverage-centered course may affirm these students' notions of the educational process.

In contrast, the assignment-centered model provides ways to address these problems. To see what an assignment-centered course might look like, let's examine Breihan's Western Civilization course skeleton (Exhibit 3.1). The information we present here comes from a course he taught and Walvoord observed. (The success for student learning was documented in Walvoord and Breihan, 1991.)

First, notice that there is no term paper. Instead, Breihan concentrated on three argumentative essays. He gave students the essay questions ahead of time so they could prepare, rather than write hastily to answer a question they had not seen before. He fashioned questions that would require them to synthesize what they had studied.

To keep them from merely copying sources, he asked them to draft an essay in class without notes. Then he responded to the drafts, and students revised their essays out of class and resubmitted them. For the first essay, revision was mandatory. For the second, it was optional. For the third (the final exam), it was not possible.

In his assignment-centered course skeleton, Breihan focused on a type of assignment that he believed had the best chance of eliciting from his students the careful arguments he most valued. He kept the paper load manageable. He structured the writing experiences so that students had the time and conditions necessary to produce coherent arguments. (The skeleton does not include minor assignments such as response to reading, map quizzes, and the like.)

We suggest that you begin your course planning in this same way. Your discipline may be quite different from history—you may have labs or clinics in addition to class. But the same principle applies: state what you want your students to learn, then list the major assignments and tests that will both teach and test that learning. You will want to describe the basic type of test or assignment and perhaps a few of the most salient characteristics. If you are planning multiple-choice exams, problem-solving exams, or short-answer exams, include a summary of the skills and knowledge that
Exhibit 3.1.  **Skeleton for 100-Level Western Civilization Course.**

I want my students to define and describe historical events.

Most of all, I want my students to use historical data to develop the elements of an argument:

- Taking a position
- Backing the position with evidence
- Answering counterarguments

1

2  10 Same, but on Industrial Revolution and Imperialism

3

4

5

6 Argumentative essay on Age of Reason, French Revolution

7  15 Same, but on World War I, World War II, and the Cold War

8
Exhibit 3.2.  Skeleton for Senior Biology Course.

I want my students to use the scientific method to conduct original scientific research and to communicate their research orally and in writing to the scientific community.

1

2

3 11 Original scientific research project, presented in written and oral reports

4

5

6

7 15 Grant proposal

8
the exam will test. List only the major exams and tests. At this early stage, you do not want to list the smaller classroom tasks that support the completion of your major assignments. In fact, it is possible to have a course skeleton that contains only one or two major assignments. For example, Exhibit 3.2 is the course skeleton for Anderson’s senior-level biology course. There will be many smaller assignments, activities, tests, and quizzes along the way, but Anderson helps herself to concentrate on the essentials by making a skeleton that shows just the assignments and tests she cares about the most.

**SUGGESTION 4**

**Check Tests and Assignments for Fit and Feasibility**

As you examine your assignment-centered course skeleton, ask yourself two questions regarding fit and feasibility:

1. *Fit:* Do my tests and assignments fit the kind of learning I most want?

2. *Feasibility:* Is the workload I am planning for myself and my students reasonable, strategically placed, and sustainable?

Let’s examine several course skeletons that were problematic. What do you see as the major problem with the course skeleton in Exhibit 3.3?

Laying out his course in this skeletal way helped the sociology professor realize that his tests and exams did not very well fit the learning he most wanted. Students were likely to study all night before the exams, using their texts and class notes, a procedure not likely to elicit thoughtful application of sociological perspectives to what they saw around them. The term paper was likely to appear to them as a library exercise, also unrelated.

The professor decided to change his assignments to fit more closely with what he wanted students to learn. He abandoned the term paper and the exams and instead asked his students, every other week, to write a journal in which they applied sociological analysis to something they had observed. However, the word *journal*, as he discovered the next semester, was a mistake: students interpreted the term too loosely and did not give him the rigorous sociological analysis he wanted. So he renamed the assignment *sociological analysis*. He explained that he wanted students to analyze some event or situation they observed in light of the sociological viewpoints they had been studying.

For example, suppose students had been studying the writings of French sociologist Émile Durkheim. A student attended his
Exhibit 3.3.  Problematic Skeleton for an Introductory Sociology Course.

Students: Primarily nonmajors fulfilling general education requirements.

I want my students to be able to apply sociological analysis to what they see around them.

1

2

3

4

5

6  14 Term paper

7  15 Final exam: essay and objective

8 Midterm exam: essay and objective
cousin’s bar mitzvah. For his analysis that week, the student might ask himself, What would Durkheim make of this? The professor stated three criteria for the analysis: (1) the student had to summarize accurately the sociological perspective—in this case, Durkheim’s views; (2) the student had to include the kinds of specific details that sociologists observe (it did not suffice to say “the food was great”); and (3) the student had to link the theories and the observations in a reasonable and thoughtful way, applying Durkheim’s perspective to the bar mitzvah.

These changes helped the sociology professor not only fit his assignments and tests to student learning but also spread the workload across the semester.

Exhibit 3.4 is another example of a course skeleton in trouble—this time because of workload. When asked about fit, this professor affirmed his current choice of the case method, saying, “I know there is some controversy in my field about whether the case method really does teach decision making, but it works as well as anything I know.” The real problem was that, as this class grew to forty students, the professor said he was “going to die” if he couldn’t get a handle on the paper load.

Colleagues in a workshop asked him, “Can the students write fewer cases?” He answered, “No, there are eight units in the course. I can’t drop a unit because students need all of them, and they are all mandated by our business accrediting agency. And if they don’t write on each unit, they don’t learn it.” Then colleagues asked, “Do students need to do a full five- to eight-page case study each time?” That question was the solution to the workload problem.

The business professor began to ponder whether, for some of the full case studies, especially early in the course, he could design shorter assignments that would help students learn what they needed. He had long recognized that there was a cohort of students in his class who wrote one mediocre case study after another. The papers were coming at him so fast, and there were so many of them, that he didn’t have time to give these students the guidance they needed to improve, so next time they repeated their mistakes.

In particular, he noted that weaker students tended to stay too close to the chronological order of the case materials. Students were given sales figures, a history of the firm, interviews with employees and managers, descriptions of the firm’s branches, copies of relevant legislation that governed the firm’s operations, and so on, all in deliberately random order. Some students read through this case material, making suggestions along the way but never fully transcending its sequence.

A second but related problem was that students tended to recommend low-level “band-aid” solutions. They would say, “This
Exhibit 3.4. Problematic Skeleton for Business Management Course.

I want my students to make business decisions, using the tools we have been studying.

1  9 Written case analysis

2 Written case analysis 10

3 11 Written case analysis

4 Written case analysis 12

5 13 Written case analysis

6 Written case analysis 14

7 15 Written case analysis as final exam

8 Written case analysis
person and that person need to talk to one another more often," or "The company should put more resources into its aluminum business," but they would not see the deeper underlying structural problems.

What could this professor do, in a one-page assignment in week two, to help students with these problems? The professor tried having students write down the single most important problem they saw in that week’s case and then list three pieces of evidence from the case out of chronological order. However, he found that, so early in the semester, students could not yet identify the underlying problem. So he focused the first assignments on building-block skills. In the very first assignment, in week two, he asked students to analyze the life stage of the business (a topic they had covered in the textbook). Was the business in question an infant business? A mature business? They had studied the kinds of problems typically associated with these life stages, so he asked them to place the business in its appropriate stage and then ask whether it exhibited problems typical for that stage. In so doing, he propelled them out of a read-and-suggest mode and gave them a larger conceptual framework. He also facilitated their use of the language by which business professionals describe the basic underlying problems of businesses. In the fourth week, he asked them for another short but more complex assignment, and he proceeded this way until in the eighth week they wrote their first full case analysis. The teacher reported that the cases were now better than before.

A biologist used the same principle in a different form. Weekly lab reports were killing him; yet, like the business teacher, he was reluctant to give up having his students write for each lab. He realized that some of his students were writing twelve mediocre lab reports; they never seemed to get the reports right, and he had to read and grade all those repetitively mediocre works. He finally asked himself, What do I want? and answered, I want students to learn to produce a good lab report—not twelve mediocre lab reports. So he decided to teach lab report writing more thoroughly and to use short, well-sequenced assignments to build students’ skills. Instead of asking for a full lab report on each lab, he would require, on the first two labs, that students write just the first section, the Introduction. He would concentrate on helping students do that section well. Then, for the next two labs, he would ask for the Introduction and the Methods and Materials section, and so on through the parts of the scientific report. He not only cut his paper load that way but was able to give more focused instruction to help his students master one section at a time. By the end of the semester, they were writing complete reports that he judged to be substantially better than those he had received in earlier semesters.
A literature teacher used a similar principle of substituting shorter and less formal assignments for longer, more formal ones. She came up with the concept of the “start.” On each major unit of the course, she asked her students to do a one- or two-page “start” for an essay of literary analysis. The “start” might be a thesis sentence that captured the main idea of the planned essay, and then an outline. If students did not feel comfortable outlining, the “start” could be a freewrite, a list of ideas, or a draft of the introductory paragraphs of the planned paper. These “starts” were treated as informal writing and were discussed in class. About two-thirds through the semester, the instructor asked students to choose their strongest “start” and begin working it into a polished paper of literary analysis. In this way, she kept them writing on every significant piece of literature, thus enhancing their learning, and she also worked intensively with them, over time, to help them shape good essay ideas. She gave limited ongoing response to their weekly work, partly in class and partly through written comments, but she only had to fully grade and mark one long, finished formal essay.

At the end of this chapter is an activity that asks you to sketch out an assignment-centered course skeleton. When you have completed your skeleton and asked your questions, you will have taken the key initial steps toward saving time in the grading process, integrating grading with learning and motivation, and enhancing students’ learning with the assignment-centered approach.

**Suggestion 5**

**Collaborate with Your Students to Set and Achieve Goals**

So far, we’ve been imagining the planning you do before you meet any of your students, and we’ve acted as though your goals are the only ones in your classroom. There is another powerful set of goals at work in your classroom—your students’ goals. Some faculty like to defer final establishment of the goals and syllabus until they meet with students once or twice, to let the students help set the goals of the course. But even if you take the liberty of establishing the goals without direct student input, you must find out about and relate to the goals your students have when they arrive. Ask them on the first day of class what they think the purpose of the class is and what they want to learn from it. Respond to their revelations. Through discussion, try to reach agreement and clear understanding about the goals of the course and the reasons for your major assignments and tests. Then ask students to write down their personal goals for learning in the course and some strategies by which they think they can accomplish those goals.
Ask them to recall the most successful course they've had in the past. What strategies worked for them there? Can they use or adapt those strategies for your class?

SUGGESTION 6

Make Assignment and Test Instructions Clear to Students

Once you have assignments and tests that assess what you most want your students to learn, it is time to ensure that your instructions will be clear to students. Students will complete the assignment they think you made, not the assignment you actually made. With sketchy or ambiguous instructions, you run the risk of having students draw on previous learning that may not be relevant or desirable in your situation. Students' propensity to do that was documented in an investigation in which Flower and her colleagues (Flower, 1990) gave first-year students a deliberately vague assignment to write a paper. Flower and her colleagues found that different students reading this vague assignment came up with quite different definitions of what their task was supposed to be. Some thought they should simply summarize the texts they had been assigned to read; some thought they should synthesize ideas around a controlling concept; others imagined something altogether different (see also Kantz, 1989; Walvoord and Sherman, 1991). How can we measure the learning we want to measure when students define the task so differently? With a careful and thorough assignment sheet, you can be more confident that an assignment is going to measure the knowledge and skills you want it to.

Anderson, the biologist whose course skeleton for the senior course on research we presented in Exhibit 3.2, developed a set of written instructions for her students as they worked on their original research papers (Exhibit 3.5). Anderson developed this assignment influenced by two conditions: first, her course did not have a lab attached, and there was no room for her students in the university’s science lab; second, many of her students would, at graduation, be hired by laboratories in commercial firms and would test the characteristics of commercial products.

Anderson used the acronym AMPS—Audience, Main point and purpose, Pattern and procedures, and Standards and criteria—to help her remember what needed to be included in an assignment sheet if students were to have the information they needed for solid writing decisions.

Another example of an effective assignment, from a different discipline and a different setup, is from Philip Way’s Economics 101 class at the University of Cincinnati (Exhibit 3.6).
Exhibit 3.5.  Anderson's Assignment for Senior Biology Course.

In this assignment you will compare two commercially available products on the basis of at least four criteria to determine which is the "better" product as operationally defined.

You will conduct original science research and compose a twelve-hundred- to fifteen-hundred-word original scientific research report.

Audience: Write for your peers as junior colleagues in the scientific community.

Main point and purpose: For you to learn and demonstrate use of the scientific method for original scientific research. The skills you will develop in this project are those used by many Towson University graduates in their jobs at companies such as Noxell [local firm that hires Towson graduates].

Pattern and procedures: Please follow a scientific report form. Your final copy should be typed or word processed and should contain the following components:

- Title (twenty-five words or fewer, with appropriate descriptors)
- Abstract
- Introduction
- Methods and materials section
- Results section
- Conclusions and implications section
- Reference section (only if needed; not required)
- Minimum of three graphics with self-contained labels
- Preference tests (if used) with an n (sample size) of 20+
- Statistics appropriate to your expertise

[How to conduct the pilot, the experiment, and write the report. Includes deadlines for early proposal and draft.]

Standards and criteria: In completing this assignment, demonstrate that you can conduct scientific inquiry. Your written report should demonstrate that you have formulated a hypothesis, designed a good experiment, controlled variables, operationally defined terms, and interpreted data appropriately. In addition, you should demonstrate that you understand the scope and sequence of the scientific report format and the importance of quantification to scientific writing.
Due Date: November 30

Objective

The aim of this assignment is to teach you how to carry out economic research, much as you would if you were employed in an entry-level economist position. Essentially, you will learn how to use economic theory and empirical data to analyze a policy issue.

Your Role

You are an aide to Congresswoman Thompson, who has not taken an economics course since 1962. She must, therefore, delegate economic analyses to you. Whenever you perform economic analyses for Congresswoman Thompson, bear in mind that she is concerned with advocating policies that improve economic growth, efficiency, employment, price stability, and equity.

The Research Issue

Congress is considering amending the Fair Labor Standards Act of 1938 to raise the minimum wage to $4.75 per hour from its current level of $4.25 per hour. You are told to analyze the proposal using economic theory and data. You must decide whether Congresswoman Thompson should support or oppose the proposal and justify your position in a report addressed to her.

The Report

Your report should contain the following elements:

A. An executive summary that states your position and summarizes the main reasons for your conclusion.

B. A definition of the criteria you are using to assess the implications of the change in the minimum wage. You should also indicate the relative weighting (importance) of the criteria. (Hint: remember the congresswoman's concerns.)

C. A theoretical analysis that supports your position. Examine the likely impact of the increase in the minimum wage on the criteria you have selected in (B). You should analyze the effects in terms of a minimum of three different diagrams:
   1. A production possibility frontier (perhaps to illustrate the effect on efficiency or growth).
   2. A supply-and-demand diagram (perhaps to illustrate the impact on unemployment or prices or equity).
   3. A production costs-supply diagram (perhaps to illustrate the effect on costs and prices or output).

Make sure you label your diagrams and explain the implications of your diagrams in terms of the assessment criteria.
D. An analysis of economic data that support your position. Quantitative and qualitative information concerning the effect of the increase in the minimum wage can be gathered from newspapers, magazines, reports by other economists, interviews, phone calls, and so on. A number of readings that may assist you in your research have been placed on reserve in the library. Make sure you summarize the evidence accurately, noting differences of opinion where they exist. Assess the reliability of the evidence. Reference your sources.

You should be succinct in your writing. Your paper should be two to three double-spaced typed pages plus diagrams. Style and grammar will be graded. You may find a style manual or the writing center helpful.

Note that the way in which you reach a position and the order in which you present the material need not be the same. I suggest that in order to form an opinion you (1) set criteria, (2) weight the criteria, (3) gather information, and (4) reach a conclusion.

Checklist

In order to ensure the quality of your work, it is suggested that you carefully proofread your paper and that you ask several of your classmates to review it as well in the light of the following list of hallmarks of a good paper:

1. A clear identification of the criteria used to justify your position.
2. A weighting scheme for the criteria.
3. A clear theoretical analysis of the impact of the increase in the minimum wage using three different diagrams.
4. A clear analysis of empirical data from primary or secondary sources.
5. A clear link between the theoretical and empirical analysis and the assessment criteria.
6. A clear stance on the minimum wage issue that is supported by the analysis.
7. Properly labeled and titled graphs.
8. Correct spelling and grammar.
10. Evidence of original thought; that is, your analysis is not simply a summary of others’ opinions or analyses but rather your own evaluation of the proposals in light of the criteria and weighting scheme you have chosen.

[The assignment is accompanied by a grading sheet showing the criteria and standards for each grade level. We display the grading sheet in Appendix C.]
Earlier in this chapter we stated that grading begins with the very first moments of course planning. We suggested that you begin by reminding yourself what you most want students to learn and then that you adopt the assignment-centered course as a mode of planning.

Now, we invite you to

1. List specifically what you want students to be able to do at the end of your course.

2. Select types of major tests and assignments that will measure whether students can accomplish those objectives.

3. Compose a course skeleton, beginning with what you want your students to learn and then sequencing your major tests and assignments carefully. Remember that your course skeleton need not contain every assignment or test—just the major ones.

4. Ask yourself the following questions:
   a. *Fit*: Is there a good fit between the learning I want and the assignments I have chosen?
   b. *Feasibility*: Is this work load reasonable, strategically placed, and sustainable for me and for my students?

If you have followed our suggested course-planning process, you now have a course skeleton that begins with what you want your students to learn, and that includes a sequence of major assignments that teach and test those goals and that constitute a sustainable workload.

We invite you now to do the following:

1. Draft instructions for one of the major tests or assignments on your course skeleton. Use the AMPS acronym mentioned earlier to help you.

2. Check your draft with a colleague outside your discipline. Colleagues should put themselves in the place of the student and point out any places where they are confused or lack needed information.