

planning, is thus the essence of understanding by design. What is difficult for many teachers to see (but easier for students to feel) is that, without such explicit and transparent priorities, many students find day-to-day work confusing and frustrating.

### The twin sins of traditional design

More generally, weak educational design involves two kinds of purposelessness, visible throughout the educational world from kindergarten through graduate school, as noted in the Introduction. We call these the "twin sins" of traditional design. The error of activity-oriented design might be called "hands-on without being minds-on"—engaging experiences that lead only accidentally, if at all, to insight or achievement. The activities, though fun and interesting, do not lead anywhere intellectually. As typified by the apples vignette in the Introduction, such activity-oriented curricula lack an explicit focus on important ideas and appropriate evidence of learning, especially in the minds of the learners. They think their job is merely to engage; they are led to think the learning *is* the activity instead of seeing that the learning comes from being asked to consider the *meaning* of the activity.

A second form of aimlessness goes by the name of "coverage," an approach in which students march through a textbook, page by page (or teachers through lecture notes) in a valiant attempt to traverse all the factual material within a prescribed time (as in the world history vignette in the Introduction). Coverage is thus like a whirlwind tour of Europe, perfectly summarized by the old movie title *If It's Tuesday, This Must Be Belgium*, which properly suggests that no overarching goals inform the tour.

As a broad generalization, the activity focus is more typical at the elementary and lower middle school levels, whereas coverage is a prevalent secondary school and college problem.

Yet, though the apples and world history classrooms look quite different with lots of physical activity and chatter in the former versus lecturing and quiet note taking in the latter, the design result is the same in both cases: No guiding intellectual purpose or clear priorities frame the learning experience. In neither case can students see and answer such

questions as these: What's the point? What's the big idea here? What does this help us understand or be able to do? To what does this relate? Why should we learn this? Hence, the students try to engage and follow as best they can, hoping that meaning will emerge.

#### MISCONCEPTION ALERT!

*Coverage* is not the same as *purposeful survey*. Providing students with an overview of a discipline or a field of study is not inherently wrong. The question has to do with the transparency of purpose. *Coverage* is a negative term (whereas *introduction* or *survey* is not) because when content is "covered" the student is led through unending facts, ideas, and readings with little or no sense of the overarching ideas, issues, and learning goals that might inform study. (See Chapter 10 for more on coverage versus uncoverage.)

Students will be unable to give satisfactory responses when the design does not provide them with clear purposes and explicit performance goals highlighted throughout their work. Similarly, teachers with an activity or coverage orientation are less likely to have acceptable answers to the key design questions: What should students understand as a result of the activities or the content covered? What should the experiences or lectures equip them to do? How, then, should the activities or class discussions be shaped and processed to achieve the desired results? What would be evidence that learners are en route to the desired abilities and insights? How, then, should all activities and resources be chosen and used to ensure that the learning goals are met and the most appropriate evidence produced? How, in other words, will students be helped to see *by design* the purpose of the activity or resource and its helpfulness in meeting specific performance goals?

We are advocating the reverse of common practice, then. We ask designers to start with a much more careful statement of the desired results—the priority *learnings*—and to derive the curriculum from the performances called for or implied in the goals. Then, contrary to much common practice, we ask designers to consider the following questions after framing the goals: What would count as evidence of such achievement? What does it look like to meet these goals? What, then, are the implied *performances* that should make up the assessment, toward which all teaching and learning should point? Only after answering these questions can we logically derive the appropriate teaching and learning experiences so that students might perform successfully to meet the standard. The shift, therefore, is away from starting with such questions as "What book will we read?" or "What activities will we do?" or "What will we discuss?" to "What should they walk out the door able to understand, regardless of what activities or texts we use?" and "What is evidence of such ability?" and, therefore, "What texts, activities, and methods will best enable such a result?" In teaching students for understanding, we must grasp the key idea that *we are coaches of their ability to play the "game" of performing with understanding, not tellers of our understanding to them on the sidelines.*

### The three stages of backward design

We call this three-stage approach to planning "backward design." Figure 1.1 depicts the three stages in the simplest terms.

#### Stage 1: Identify desired results

What should students know, understand, and be able to do? What content is worthy of understanding? What *enduring* understandings are desired?

#### Design Tip

To test the merits of our claims about purposelessness, we encourage you to side up to a student in the middle of any class and ask the following questions:

What are you doing?

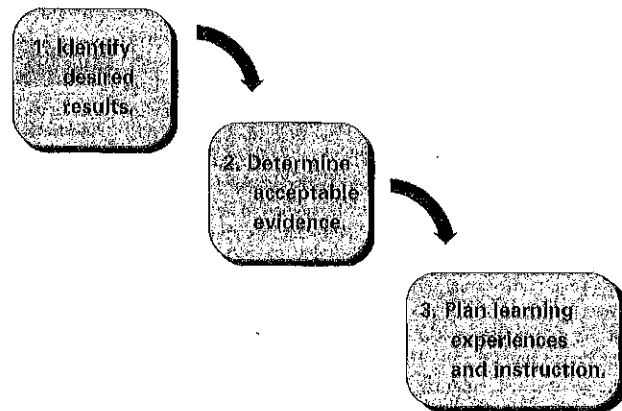
Why are you being asked to do it?

What will it help you do?

How does it fit with what you have previously done?

How will you show that you have learned it?

Figure 1.1

**UbD: Stages of Backward Design**

In Stage 1 we consider our goals, examine established content standards (national, state, district), and review curriculum expectations. Because typically we have more content than we can reasonably address within the available time, we must make choices. This first stage in the design process calls for clarity about priorities.

**Stage 2: Determine acceptable evidence**

How will we know if students have achieved the desired results? What will we accept as evidence of student understanding and proficiency? The backward design orientation suggests that we think about a unit or course in terms of the collected assessment evidence needed to document and validate that the desired learning has been achieved, not simply as content to be covered or as a series of learning activities. This approach encourages teachers and curriculum planners to first “think like an assessor” before designing specific units and lessons, and thus to consider up front how they will determine if students have attained the desired understandings.

**Stage 3: Plan learning experiences and instruction**

With clearly identified results and appropriate evidence of understanding in mind, it is now the time to fully think through the most appropriate instructional activities. Several key questions must be considered at this stage of backward design: What enabling knowledge (facts, concepts, principles) and

skills (processes, procedures, strategies) will students need in order to perform effectively and achieve desired results? What activities will equip students with the needed knowledge and skills? What will need to be taught and coached, and how should it best be taught, in light of performance goals? What materials and resources are best suited to accomplish these goals?

Note that the specifics of instructional planning—choices about teaching methods, sequence of lessons, and resource materials—can be successfully completed only after we identify desired results and assessments and consider what they imply. Teaching is a means to an end. Having a clear goal helps to focus our planning and guide purposeful action toward the intended results.

Backward design may be thought of, in other words, as purposeful task analysis: Given a worthy task to be accomplished, how do we best get everyone equipped? Or we might think of it as building a wise itinerary, using a map: Given a destination, what’s the most effective and efficient route? Or we might think of it as planning for coaching, as suggested earlier: What must learners master if they are to effectively perform? What will count as evidence *on the field*, not merely in drills, that they really get it and are ready to *perform with understanding, knowledge, and skill* on their own? How will the learning be designed so that learners’ capacities are developed through use and feedback?

This is all quite logical when you come to understand it, but “backward” from the perspective of much habit and tradition in our field. A major change from common practice occurs as designers must begin to think about assessment *before* deciding what and how they will teach. Rather than creating assessments near the conclusion of a unit of study (or relying on the tests provided by textbook publishers, which may not completely or appropriately assess our standards and goals), backward design calls for us to make our goals or standards specific and concrete, in terms of assessment evidence, as we begin to plan a unit or course.

The logic of backward design applies regardless of the learning goals. For example, when starting from a state content standard, curriculum designers need to determine the appropriate assessment evidence stated or implied in the standard. Likewise, a staff developer should determine what evidence will indicate that the adults have learned the intended knowledge or skill before planning the various workshop activities.

The rubber meets the road with assessment. Three different teachers may all be working toward the same content standards, but if their assessments vary considerably, how are we to know which students have achieved what? Agreement on needed evidence of learning leads to greater curricular coherence and

**MISCONCEPTION ALERT!**

When we speak of evidence of desired results, we are referring to evidence gathered through a variety of formal and informal assessments during a unit of study or a course. We are not alluding only to end-of-teaching tests or culminating tasks. Rather, the collected evidence we seek may well include traditional quizzes and tests, performance tasks and projects, observations and dialogues, as well as students’ self-assessments gathered over time.

more reliable evaluation by teachers. Equally important is the long-term gain in teacher, student, and parent insight about what does and does not count as evidence of meeting complex standards.

This view of focusing intently on the desired learning is hardly radical or new. Tyler (1949) described the logic of backward design clearly and succinctly more than 50 years ago:

*Educational objectives become the criteria by which materials are selected, content is outlined, instructional procedures are developed, and tests and examinations are prepared. . . .*

*The purpose of a statement of objectives is to indicate the kinds of changes in the student to be brought about so that instructional activities can be planned and developed in a way likely to attain these objectives. (pp. 1, 45)*

And in his famous book, *How to Solve It*, originally published in 1945, Polya specifically discusses "thinking backward" as a strategy in problem solving going back to the Greeks:

*There is a certain psychological difficulty in turning around, in going away from the goal, in working backwards. . . . Yet, it does not take a genius to solve a concrete problem working backwards; anyone can do it with a little common sense. We concentrate on the desired end, we visualize the final position in which we would like to be. From what foregoing position could we get there? (p. 230)*

These remarks are old. What is perhaps new is that we offer herein a helpful process, a template, a set of tools, and design standards to make the plan and resultant student performance more likely to be successful by design than by good fortune. As a 4th grade teacher from Alberta, Canada, put it, "Once I had a way of clearly defining the end in mind, the rest of the unit 'fell into place.'"

The twin sins of activity-based and coverage-based design reflect a failure to think through purpose in this backward-design way. With this in mind, let's revisit the two ficititious vignettes from the Introduction. In the apples vignette, the unit seems to focus on a particular theme (harvest time), through a specific and familiar object (apples). But as the depiction reveals, the unit has no real depth because there is no enduring learning for the students to derive. The work is *hands-on* without being *minds-on*, because students do not need to (and are not really challenged to) extract sophisticated ideas or connections. They don't have to work at understanding; they need only engage in the activity. (Alias, it is common to reward students for mere engagement as opposed to understanding; engagement is necessary, but not sufficient, as an end result.)

Moreover, when you examine the apples unit it becomes clear that it has no overt priorities—the activities appear to be of equal value. The students' role is merely to participate in mostly enjoyable activities, without having to demonstrate that they understand any big ideas at the core of the subject (excuse the pun). All activity-based—as opposed to results-based—teaching shares the weakness of the apples unit: Little in the design asks students to derive

intellectual fruit from the unit (sorry!). One might characterize this activity-oriented approach as "faith in learning by osmosis." Is it likely that individual students will learn a few interesting things about apples? Of course. But, in the absence of a learning plan with clear goals, how likely is it that students will develop shared understandings on which future lessons might build? Not very.

In the world history vignette, the teacher covers vast amounts of content during the last quarter of the year. However, in his hurried march to get through a textbook, he apparently does not consider what the students will understand and apply from the material. What kind of intellectual scaffolding is provided to guide students through the important ideas? How are students expected to use those ideas to make meaning of the many facts? What performance goals would help students know how to take notes for maximal effective use by the course's end? Coverage-based instruction amounts to the teacher merely talking, checking off topics, and moving on, irrespective of whether students understand or are confused. This approach might be termed "teaching by mentioning it." Coverage-oriented teaching typically relies on a textbook, allowing it to define the content and sequence of instruction. In contrast, we propose that results-oriented teaching employ the textbook as a resource but not the syllabus.

### A backward design template

Having described the backward design process, we now put it together in a useful format—a template for teachers to use in the design of units that focus on understanding.

Many educators have observed that backward design is common sense. Yet when they first start to apply it, they discover that it feels unnatural. Working this way may seem a bit awkward and time-consuming until you get the hang of it. But the effort is worth it—just as the learning curve on good software is worth it. We think of Understanding by Design as software, in fact: a set of tools for making you ultimately more productive. Thus, a practical cornerstone of Understanding by Design is a design template that is meant to reinforce the appropriate habits of mind needed to complete designs for student understanding and to avoid the habits that are at the heart of the twin sins of activity-based and coverage-based design.

Figure 1.2 provides a preliminary look at the UbD Template in the form of a one-page version with key planning questions included in the various fields. This format guides the teacher to the various UbD elements while visually conveying the idea of backward design. Later chapters present a more complete account of the template and each of its fields.

Although this one-page version of the template does not allow for great detail, it has several virtues. First, it provides a *gestalt*, an overall view of backward design, without appearing overwhelming. Second, it enables a quick check of alignment—the extent to which the assessments (Stage 2) and learning activities (Stage 3) align with identified goals (Stage 1). Third, the template