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# Integrating

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## & Differentiated Instruction

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### UNDERSTANDING *by* DESIGN

Connecting Content and Kids



Association for Supervision and  
Curriculum Development  
Alexandria, Virginia USA

**Read: Chapter 3. Take notes in your Dialectical Journal and write all your personal thoughts and questions into the second column of your journal.**

# 3

## WHAT REALLY MATTERS IN LEARNING? (CONTENT)

*What knowledge is truly essential and enduring?*

*What's worth understanding? What powerful ideas should all students encounter?*

*Can differentiation and standards coexist? How can we address required content standards while remaining responsive to individual students?*

Educators from preschool to graduate school typically face a common challenge: too much content to teach given the available time. The problem is magnified in certain fields, such as science and history, where the knowledge base continuously expands. This problem of content “overload” requires teachers to make choices constantly regarding what content to emphasize as well as what not to teach.

In recent years, national subject area associations, states, and provinces in North America have established content standards to specify what students should know and be able to do in the various disciplines during the K–12 school years. These standards are intended to focus teaching and learning, guide curriculum development, and provide a basis for accountability systems. Despite all good intentions and many positive effects, the standards movement has not solved the “overload” problem. In fact, instead of ameliorating the problem, the standards may have exacerbated it.

Consider the findings of researchers Robert Marzano and John Kendall (1998). Their analysis of 160 national and state-level content standards documents yielded a synthesis of 255 standards and 3,968 benchmarks that students are expected to know and do in various subject areas. The researchers went on to calculate that if 30 minutes of instructional time were allocated to each identified benchmark (and many benchmarks

require much more time to teach and learn), an additional 15,465 hours (approximately nine more years of school) would be required for students to learn them all! Such ambitious content demands can seem daunting to educators attempting to teach and assess the standards.

In addition to the amount of content identified, standards may be stated in ways that make them difficult to address. Some standards are too big. Consider this one: Students will “recognize how technical, organizational, and aesthetic elements contribute to the ideas, emotions, and overall impact communicated by works of art.” Such a statement is simply too global to provide goal clarity and guidance to instruction and assessment. Different teachers in the arts could, in good faith, emphasize very different aspects of the content, while believing that their actions honor the standard.

Conversely, some standards are too small. For example, consider this 7th-grade state history standard that declares that students will “compare the early civilizations of the Indus River Valley in Pakistan with the Huang-He of China.” Although this statement provides a much sharper target than the previous example, the focus is too specific and seems somewhat arbitrary. This problem is exacerbated by high-stakes tests that rely on selected-response items to assess the discrete standards and benchmarks. When content is reduced to a series of “factlets” and assessments are built upon decontextualized items, teachers are faced with a laundry list to cover without a sense of priority. The larger, transferable concepts and processes can get lost in a sea of details.

Some states and provinces have attempted to address one or both problems by publishing companion “clarification” documents to explain the intent of the standards, identify more specific grade-level benchmarks, and specify performance indicators. Nonetheless, the challenges of content overload persist.

Content standards are not the only problem; textbooks frequently exacerbate the situation. To meet the requirements of textbook adoption committees looking for congruence with *their* state or provincial standards, commercial textbook companies in the United States and Canada strive to include as many standards and benchmarks as possible. The result is a surfeit of information, a “mile wide, inch deep” treatment of subject area knowledge.

So how can we address the content overload challenges posed by standards and textbooks? In their book *Understanding by Design*, Grant Wiggins

and Jay McTighe (2005) propose that learning results should be considered in terms of understanding the “big ideas” and core processes within the content standards. These ideas are framed around provocative “essential questions” to focus teaching and learning. The more specific facts, concepts, and skills (which are typically assessed on standardized tests) are then taught in the context of exploring and applying the larger ideas and processes. This approach is consistent with the recommendations of other experts in curriculum and assessment, such as Lynn Erickson (1998), who calls for “concept-based curriculum,” and Douglas Reeves (2002), who advocates framing “power standards” as a means of prioritizing content by focusing on transferable concepts and processes.

So what does this approach look like in practice? Let’s revisit the two previous examples.

The first standard in the arts (“recognize how technical, organizational, and aesthetic elements contribute to the ideas, emotions, and overall impact communicated by works of art”) is very broad and needs a conceptual focus. Consider the following examples of “big ideas” and companion questions:

- Artists’ cultures and personal experiences inspire the ideas and emotions they express. *Where do artists get their ideas? In what ways do culture and experience inspire artistic expression?*
- Available tools and technologies influence the ways in which artists express their ideas. *How does the medium influence the message?*
- Great artists often break with established traditions, conventions, and techniques to express what they see and feel. *What makes art “great”?*

In the second example (“compare the early civilizations of the Indus River Valley in Pakistan with the Huang-He of China”), students would benefit from examining larger ideas and associated questions, such as these:

- The geography, climate, and natural resources of a region influence how its inhabitants live and work. *How does where people live influence how they live?*
- Cultures share common features while retaining unique qualities. *What makes a civilization? Are modern civilizations more “civilized” than ancient ones?*

- The past offers insights into historical patterns, universal themes, and recurring aspects of the human condition. *What can we learn from studying other places and times? How does the past affect us today?*

Notice that in both examples, the transferable “big ideas” and essential questions provide a conceptual lens through which the specific content in the standards may be addressed. More specific facts and skills are then taught in the context of the larger ideas and questions. This approach provides a means of managing large quantities of content knowledge, while supporting meaningful learning. When the curriculum, instruction, and assessment focus on such “big ideas” and essential questions, they signal to students and parents that the underlying goal of all school efforts is to improve student learning of important content, not merely to traverse a textbook or practice for standardized tests.

## Planning Backward

If we want students to explore essential questions and come to understand important ideas contained in content standards, then we’ll need to plan accordingly. To that end, we propose a three-stage backward design process for curriculum planning.

The concept of planning backward from desired results is not new. In 1949, Ralph Tyler described this approach as an effective process for focusing instruction. More recently, Stephen Covey (1989), in the best-selling book *Seven Habits of Highly Effective People*, reports that effective people in various fields are goal oriented and plan with the end in mind. Although not a new idea, we have found that the deliberate use of backward design for planning courses, units, and individual lessons results in more clearly defined goals, more appropriate assessments, and more purposeful teaching.

Backward planning asks educators to consider the following three stages:

**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? What essential questions will be explored?* In Stage 1, we consider our goals, examine established content standards (national, state, province, district), and review curriculum expectations. Because there is typically more “content” than can reasonably be addressed within the

available time, we are obliged to make choices. This first stage in the design process calls for clarity about priorities.

**Stage 2. Determine acceptable evidence.** *How will we know whether students have achieved the desired results? What will we accept as evidence of student understanding and proficiency?* Backward design encourages teachers and curriculum planners to “think like an assessor” before designing specific units and lessons. The assessment evidence we need reflects the desired results identified in Stage 1. Thus, we consider *in advance* the assessment evidence needed to document and validate that the targeted learning has been achieved. Doing so sharpens and focuses teaching.

**Stage 3. Plan learning experiences and instruction.** *What enabling knowledge and skills will students need to perform effectively and achieve desired results? What activities, sequence, and resources are best suited to accomplish our goals?* With clearly identified results and appropriate evidence of understanding in mind, we now think through the most appropriate instructional activities. The goal is to make our teaching engaging *and* effective for learners, while always keeping the end in mind.

We have found that backward design helps avoid two familiar “twin sins” of planning and teaching. The first “sin” occurs more widely at the elementary and middle levels and may be labeled “activity-oriented” instruction. In this case, teacher planning is focused on activities. Often, the activities are engaging, hands-on, and kid-friendly. Those are fine qualities as long as the activities are purposefully focused on clear and important goals *and* if they yield appropriate evidence of learning. In too many cases, however, activity-oriented planning and teaching are like cotton candy—pleasant enough in the moment but lacking long-term substance.

The second “sin,” more prevalent at the secondary and collegiate levels, goes by the name of “coverage.” In this case, planning means reviewing the teacher’s edition and teaching involves a chronological march through the textbook. Indeed, some teachers act as if they believe that their job is to cover the book. In contrast, we believe that a teacher’s job is to teach for learning of important content, to check regularly for understanding on the part of all students, and to make needed adjustments based on results. The textbook may very well provide an important resource, but it should *not* constitute the syllabus.

Many teachers have observed that the backward planning process makes sense but feels awkward, as it requires a break from comfortable habits. We have found that when people plan backward, by design, they are much less likely to succumb to the problematic aspects of activity- or coverage-oriented teaching.

## A Planning Template

McTighe and Wiggins (2004) have developed a template to assist educators in focusing on important content while planning backward (see Figure 3.1). Figure 3.2 offers a set of planning questions to consider when using the template to plan a unit of study, a course, or a workshop.

Note that in Stage 1, designers are asked to specify desired understandings (Box U) and the companion essential questions (Box Q), reflecting the established learning goals, such as content standards (Box G). These elements help clarify content priorities and ensure that big ideas and important questions are prominent. The more specific knowledge and skill objectives are then listed in Boxes K and S.

Stage 2 distinguishes between two broad types of assessment—performance tasks and other evidence. The performance tasks (Box T) require students to transfer (i.e., to apply) their learning to a new and authentic situation as a means of assessing their understanding. Other evidence, such as traditional quizzes, tests, observations, and work samples (Box OE) help round out the picture of what students know and can do.

The vertical format of the template facilitates a check for alignment between Stages 1 and 2. One can readily see the extent to which the proposed assessments will provide valid and reliable evidence of the desired learning.

With results and evidence in mind, we now plan purposeful learning activities and directed teaching to help *all* students reach the desired achievements (Box L). It is here, in Stage 3, where the concerns for both content and kids combine in a plan for responsive teaching.

**FIGURE 3.1**  
**Planning Template**

Stage 1—Desired Results	
<b>Established Goal(s):</b> <span style="float: right;">G</span>	
<b>Understanding(s):</b> <i>Students will understand that . . .</i> <span style="float: right;">U</span>	<b>Essential Question(s):</b> <span style="float: right;">Q</span>
<i>Students will know . . .</i> <span style="float: right;">K</span>	<i>Students will be able to . . .</i> <span style="float: right;">S</span>
Stage 2—Assessment Evidence	
<b>Performance Task(s):</b> <span style="float: right;">T</span>	<b>Other Evidence:</b> <span style="float: right;">OE</span>
Stage 3—Learning Plan	
<b>Learning Activities:</b> <span style="float: right;">L</span>	

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**FIGURE 3.2**  
**Planning Template with Design Questions**

Stage 1—Desired Results	
<b>Established Goal(s):</b> <span style="float: right;">G</span> <ul style="list-style-type: none"> <li>What relevant goals (e.g., content standards, course or program objectives, learning outcomes) will this design address?</li> </ul>	
<b>Understanding(s):</b> <span style="float: right;">U</span> <i>Students will understand that . . .</i> <ul style="list-style-type: none"> <li>What are the big ideas?</li> <li>What specific understandings about them are desired?</li> <li>What misunderstandings are predictable?</li> </ul>	<b>Essential Question(s):</b> <span style="float: right;">Q</span> <ul style="list-style-type: none"> <li>What provocative questions will foster inquiry, understanding, and transfer of learning?</li> </ul>
<i>Students will know . . .</i> <span style="float: right;">K</span> <ul style="list-style-type: none"> <li>What key knowledge and skills will students acquire as a result of this unit?</li> <li>What should they eventually be able to do as a result of such knowledge and skill?</li> </ul>	<i>Students will be able to . . .</i> <span style="float: right;">S</span>
Stage 2—Assessment Evidence	
<b>Performance Task(s):</b> <span style="float: right;">T</span> <ul style="list-style-type: none"> <li>Through what authentic performance task(s) will students demonstrate the desired understandings?</li> <li>By what criteria will "performances of understanding" be judged?</li> </ul>	<b>Other Evidence:</b> <span style="float: right;">OE</span> <ul style="list-style-type: none"> <li>Through what other evidence (e.g., quizzes, tests, academic prompts, observations, homework, journals) will students demonstrate achievement of the desired results?</li> <li>How will students reflect upon and self-assess their learning?</li> </ul>
Stage 3—Learning Plan	
<b>Learning Activities:</b> <span style="float: right;">L</span> <ul style="list-style-type: none"> <li>What learning experiences and instruction will enable students to achieve the desired results? How will the design</li> </ul> <p>W = Help the students know <b>Where</b> the unit is going and <b>What</b> is expected? Help the teacher know <b>Where</b> the students are coming from (prior knowledge, interests)?</p> <p>H = <b>Hook</b> all students and <b>Hold</b> their interest?</p> <p>E = <b>Equip</b> students, help them <b>Experience</b> the key ideas, and <b>Explore</b> the issues?</p> <p>R = Provide opportunities to <b>Rethink</b> and <b>Revise</b> their understandings and work?</p> <p>E = Allow students to <b>Evaluate</b> their work and its implications?</p> <p>T = <b>Be Tailored</b> (personalized) to the different needs, interests, and abilities of learners?</p> <p>O = <b>Be Organized</b> to maximize initial and sustained engagement as well as effective learning?</p>	

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## Frequently Asked Questions About Backward Design

Predictable questions arise as teachers begin to use backward design for planning. We'll address three of the most frequent questions here.

*How do we identify the “big ideas” that we want students to understand? How do we develop the accompanying essential questions?*

We suggest using national, state, or provincial content standards as a starting point. Often, the standards themselves, or companion clarification documents, present important ideas contained within. A more specific strategy involves “unpacking” the nouns and verbs in the standards. The nouns point to “big ideas” and companion questions, whereas the verbs are suggestive of the assessments. Because one needs a solid base of content knowledge to identify the enduring ideas and essential questions, we recommend planning with a partner or team whenever possible. In this case, two (or three) heads are almost always better.

Another process involves interrogating the content using questions such as these: Why exactly are we teaching \_\_\_\_? What do we want students to understand and be able to do five years from now? If this unit is a story, what's the moral? What couldn't people do if they didn't understand \_\_\_\_?

Finally, we encourage people to “work smarter” by consulting resources such as the UbD Exchange Web site (<http://ubdexchange.org>), which contains thousands of examples of unit designs in UbD format, as well as numerous Web links for finding “big ideas,” essential questions, performance assessment tasks, and rubrics. It makes no sense to reinvent the wheel.

*Do you have to follow the template order (top to bottom) when you design?*

No. Backward design does not demand a rigid sequence. Although there is a clear logic to the template, the planning process typically unfolds in an iterative, back-and-forth fashion. The template is important not as a series of boxes in a prescribed order but as a tool for developing a coherent, purposeful, and efficient design for learning. Many teachers report that once they become familiar with backward design through using the physical template, they develop a “mental template”—a way of thinking and planning. Like any effective graphic organizer or process tool, the template leaves a cognitive residue that enhances curriculum planning.

*Can you use the three stages of backward design to plan a lesson as well as a unit?*

We recommend the unit as a focus for backward design because the key elements of the template—big idea understandings, essential questions, and performance assessments—are complex and require more time than is available within a single lesson. However, we have found that when lessons (Stage 3) are planned under an umbrella of desired results (Stage 1) and appropriate assessments (Stage 2), more purposeful teaching and improved learning follow.

## Standards and Responsive Teaching: Planning for Content *and* Kids

In the previous section, we proposed a three-stage “backward design” process for planning units and courses. Now, we’ll examine that process more closely with differentiation in mind.

In Stage 1 of backward design, we identify desired results, including relevant content standards. If appropriately selected, these established goals (placed in Box G of the template) serve as a focal point for teaching *all* students. The “big ideas” that we want students to come to understand (Box U) and their companion essential questions (Box Q) provide intellectual richness and promote transfer of learning. Like the content standards, desired understandings and questions should remain a constant target, regardless of differences in students’ background knowledge, interests, and preferred learning modalities. In other words, the big ideas and essential questions provide the conceptual pillars that anchor the various disciplines. We do not arbitrarily amend these based on *whom* we are teaching.<sup>1</sup> Of course, the nature and needs of learners should certainly influence *how* we teach toward these targets.

The more specific knowledge and skill objectives (Boxes K and S) are linked to the desired standards and understandings, yet some differentiation may well be needed here. Because students typically vary in their prior knowledge and skill levels, responsive teachers target their instruction to address significant gaps in knowledge and skills. Such responsiveness follows from effective diagnostic assessments that reveal if such prerequisite knowledge and skills exist. There is a place for sensitivity to student needs in Stage

1 without compromising the established standards or the integrity of subject areas.

The logic of backward design dictates that evidence derives from goals. Thus, in Stage 2, teachers are asked to “think like assessors” to determine the assessments that will provide the evidence for the identified knowledge, skills, and understandings in Stage 1. To this end, we have found it fruitful to examine the verbs in the content standard and benchmark statements because these suggest the nature of the needed evidence. A standard that uses verbs such as “know” or “identify” implies that an objective test could provide an appropriate measure. For example, a standard that calls for students to “know the capitals of states (or provinces)” could be assessed through a matching or multiple-choice test format.

However, a standard that expects students to “apply,” “analyze,” or “explain”—to thoughtfully use their knowledge and skill—demands different methods for verifying achievement. For example, if the standard states, “students analyze factors that influence location of capital cities,” then an appropriate assessment would expect an explanation of the influence of various geographic, economic, and political factors.

Along these lines, when we consider the big ideas we want students to “understand,” we need to concurrently consider the evidence that will show that students truly understand them. In this regard, Wiggins and McTighe (1998) propose that understanding is best revealed through various facets—when learners can *explain*, *interpret*, *apply*, *shift perspective*, *display empathy*, and *reflectively self-assess*. In other words, we need to match our assessment measures with our goals.

While the needed evidence, in general, is determined by the desired results, the *particulars* of an assessment can, nonetheless, be tailored to accommodate the uniqueness of students. Consider a science standard that calls for a basic understanding of “life cycles.” Evidence of this understanding could be obtained by having students explain the concept and offer an illustrative example. Such evidence could be collected in writing, but such a requirement would be inappropriate for an English language learner whose skills in written English are limited. Indeed, her difficulty expressing herself in writing could yield the incorrect inference that she does not understand life cycles. However, if she is offered flexibility in the response mode, such

as explaining orally or visually, we will obtain a more valid measure of her understanding.

It is important to note that although we may offer students options to show what they know and can do, we will use the *same* criteria in judging the response. In the previous example, a student's explanation of life cycles must be accurate, thorough, and include an appropriate illustrative example, *regardless* of whether the student responded orally, visually, or in writing. In other words, the criteria are derived primarily from the content goal, not the response mode. If we vary the criteria for different students, then we can no longer claim that our tests are standards based and criterion referenced.

Of course, feasibility must be considered. Teachers will need to find the practical balance point between completely individualized assessments and standardized, "one-size-fits-all" measures. Nonetheless, we believe that classroom assessments can indeed be responsive to students' differences while still providing reliable information about student learning.

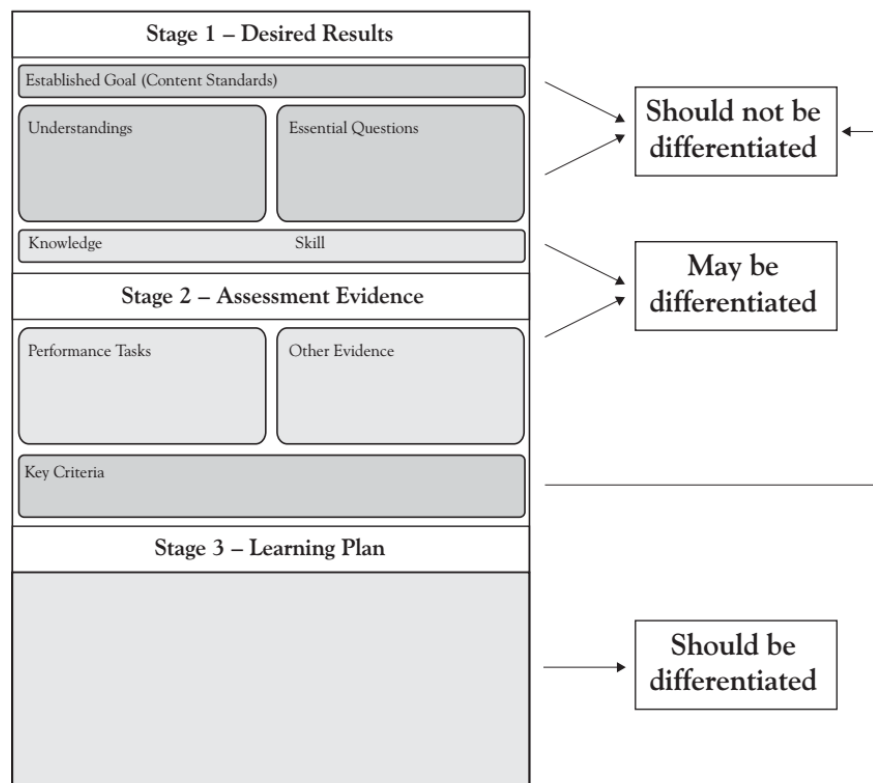
Finally, we come to Stage 3, where we develop our teaching and learning plan to help students achieve the desired results of Stage 1 and equip them for their "performances of understanding" in Stage 2. In Stage 3, responsive teaching flourishes as we consider variety in the background knowledge, interests, and preferred learning modalities of our students. A variety of specific approaches and techniques for responsive teaching will be discussed in later chapters.

We conclude this chapter by offering a visual summary of the preceding narrative—one way of representing the relationship between backward design and differentiation—in Figure 3.3. It supports the premise that enduring understandings, essential knowledge, and essential skills should be a steady focus for the vast majority of learners, that *how* students demonstrate proficiency can be responsive to student readiness, interest, and/or mode of learning, and that the steps leading students toward proficiency with the essentials should be differentiated in ways that maximize the growth of individual learners in regard to the essential learning goals.

A river needs banks to flow. Backward design provides the structure to support flexibility in teaching and assessing in order to honor the integrity of content while respecting the individuality of learners. The blending of UbD and DI provides stability of focus on essential knowledge, understanding,

**FIGURE 3.3****Applying Differentiation to the UbD Framework**

This organizer provides a general framework for thinking about where differentiation may apply in the Understanding by Design framework. There will be exceptions to the general rule of adhering to the same essential knowledge, understanding, and skill in the case of students who have extreme needs. For example, a student with an Individualized Education Program (IEP) or a student who is very new to the English language may need work with skills that are precursors to the ones specified in the framework. Similarly, an advanced learner who demonstrates proficiency with the essential knowledge and skill specified in the framework needs to work with more advanced knowledge and skill in order to continue developing as a learner. In regard to Assessment Evidence, although content goals assessed will remain constant for most learners, varying the mode of assessment will benefit many learners.



and skill and flexibility in guiding learners to the desired ends. The chapter that follows explores ways in which differentiation flows from and is shaped by quality curriculum.

## Note

1. In cases where Individualized Education Programs (IEPs) have been developed for exceptional students, then the particular goals of their plan are added to, or substituted for, the content standards as indicated by the IEP.