

JIGSAW READING—ESSENTIAL QUESTIONS: WHAT, WHY, HOW

~ FROM ESSENTIAL QUESTIONS BY MCTIGHE & WIGGINS

A

Two Sides of a Coin

Although we have characterized essential questions as being important for stimulating student thinking and inquiry, this is not their sole function. In the body of work known as *Understanding by Design* (McTighe & Wiggins, 2004; Wiggins & McTighe, 2005, 2007, 2011, 2012), we propose that education should strive to develop and deepen students' understanding of important ideas and processes so that they can transfer their learning within and outside school.

Accordingly, we recommend that content (related goals) be unpacked to identify long-term transfer goals and desired understandings. Part of this unpacking involves the development of associated essential questions. In other words, EQs can be used to effectively frame our key learning goals. For example, if a content standard calls for students to learn about the three branches of government, then questions such as "When does a government overstep its authority?" or "How might we guard against governmental abuses of power?" help stimulate student thinking about why we need checks and balances, what the framers of the Constitution were trying to achieve, and other governmental approaches to balancing power. Note that the question has more than one answer, even if in the United States we have grown accustomed to our particular answer. In this sense, the question is still open, not closed.

We'll have more to say about how to come up with good essential questions in later chapters, but for now try this simple thought experiment. If the content you are expected to teach represents "answers," then what questions were being asked by the people who came up with those answers? This conceptual move offers a useful strategy both for seeing a link between content standards and important questions and for coming up with ways of engaging students in the very kind of thinking that is required to truly understand the content. In short, expert knowledge is the result of inquiry, argument, and difference of opinion; the best questions point to hard-won big ideas that we want learners to come to understand. The questions thus serve as doorways or lenses through which learners can better see and explore the key concepts, themes, theories, issues, and problems that reside within the content.

It is also through the process of actively "interrogating" the content using provocative questions that students strengthen and deepen their understanding. For instance, a regular consideration of the question "How are stories from different places and times about me?" can lead students to the big ideas that great literature explores—the universal themes of the human condition

underneath the more obvious peculiarities of personality or culture—and thus can help us gain insight into our own experiences. Similarly, the question "To what extent can people accurately predict the future?" serves as a launch pad for examining big ideas in statistics and science, such as sampling variables, predictive validity, degrees of confidence, and correlation versus causality.

At a practical level, think of targeted understandings and essential questions as the flip sides of the same coin. Our essential questions point toward important transferable ideas that are worth understanding, even as they provide a means for exploring those ideas. This associated relationship is suggested graphically in the Understanding by Design (UbD) unit-planning template, where targeted understandings are placed next to their companion essential questions. Here are some examples:

Target concept	Essential Question
The geography, climate, and natural resources of a region influence the economy and lifestyle of the people living there.	How does <i>where</i> you live influence <i>how</i> you live?
Statistical analysis and data display often reveal patterns. Patterns enable prediction.	What will happen next? How sure are you?
People have different dietary needs based on age, activity level, weight, and various health considerations.	How can a diet that is "healthy" for one person be unhealthy for another?
Dance is a language of shape, space, timing, and energy that can communicate ideas and feelings.	How can motion express emotion?

B

Three Connotations of Essential

A finer-grained examination of such questions reveals three different but overlapping meanings for the term essential. One meaning of essential includes the terms "important" and "timeless." Essential questions in this sense arise naturally and recur throughout one's life. Such questions are broad in scope and universal by nature. What is justice? Is art a matter of taste or principles? How much should we tamper with our own biology and chemistry? Is science compatible with religion? Is an author's view privileged in determining the meaning of a text? Essential questions of this type are common and perpetually arguable. We may arrive at or be helped to grasp understandings for these questions, but we soon learn that answers to them are provisional or more varied than we might have imagined. In other words, we are liable to change our minds in response to reflection, different views, and rich experience concerning such questions as we go through life—and such changes of mind are not only expected but beneficial. A good education is grounded in such lifelong questions, even if we sometimes lose sight of them while focusing on content mastery. Such questions signal that education is not just about learning "the answer" but also about learning how to think, question, and continually learn.

A second connotation for essential refers to "elemental" or "foundational." Essential questions in this sense reflect the key inquiries within a discipline. Such questions point to the big ideas of a subject and to the frontiers of technical knowledge. They are historically important and very much alive in the field. The question "Is any history capable of escaping the social and personal history of its writers?" has been widely and heatedly debated among scholars over the past hundred years, and it compels novices and experts alike to ponder potential bias in any historical narrative. Questions such as "How many dimensions are there in space-time?" and "To what extent are current global weather patterns typical or unusual?" are at the forefront of debate about string theory in physics and global climate change in climatology, respectively. The question "Is it more a sign of creativity or arrogance when a writer tries to tell a story from the perspective of a gender or culture different from his or her own?" has been energetically debated in the world of literature and the arts in recent years.

A third and important connotation for the term essential refers to what is vital or necessary for personal understanding—in the case of schooling, what students need for learning core content. In this sense, a question can be considered essential when it helps students make sense of seemingly isolated facts and skills or important but abstract ideas and strategies—findings that may be understood by experts but not yet grasped or seen as valuable by the learner. Examples include questions such as these: *In what ways does light act wavelike? How*

do the best writers hook and hold their readers? What models best describe a business cycle? What is the "best fit" line of these "messy" data points? By actively exploring such questions, learners are helped to connect disparate and confusing information and arrive at important understandings as well as more effective (transfer) applications of their knowledge and skill. Consider a sports example. In soccer, basketball, football, lacrosse, and water polo, strategic players and teams come to understand the importance of asking "Where can we best create more open space on offense?" (Note that this question serves as a springboard for a strategic understanding—that spreading out the defense enhances ball advancement and scoring opportunities.) It leads to the more obvious and important question: "How might we win more games?" Note, therefore, that even in skill focused instruction such as in PE or math, there are important essential questions for helping students understand the point of the skills and the meaning of results. (We will further discuss EQs in skill-based courses in later chapters.)

C

Size and Scope Matter: Overarching Versus Topical EQs

Questions such as "What margins of error are tolerable?" are essential in yet another sense. They offer relevance and transferability across disciplines, linking not only to units and courses in measurement, statistics, and engineering, but also to areas as diverse as pottery, music, and parachute packing. Such questions encourage and even demand transfer beyond the particular topic in which we first encounter them. They can (and thus should) recur over the years to promote conceptual connections and curriculum coherence within (and sometimes) across topics and disciplines.

Essential questions (and companion understandings) differ in scope. For example, "What lessons can we learn from World War II?" and "How do the best mystery writers hook and hold their readers?" are typically asked to help students come to particular understandings around those specific topics and skills. Such questions are not usually meant to be perpetually open or unanswerable. They refer specifically to the topic of a unit, in these cases, World War II and the genre of writing called mysteries, respectively. Other essential questions are broad and overarching, taking us beyond any particular topic or skill, toward more general, transferable understandings. For example, "What lessons can we and can't we learn from the past?" extends well beyond World War II and can fruitfully be asked again and again over many years in several subject areas. Similarly, we need not inquire solely about how mysteries engage us. That topical question fits under the broader question that applies to all writers and artists: "How do the best writers and artists capture and hold our attention?"

We refer to specific essential questions as "topical" and the more general questions as "overarching." (The same idea applies to understandings.) Here are some paired examples of these two types of essential questions:

Overarching EQs	Topical EQs
Whose "story" (perspective) is this?	How did Native Alaskans view the "settlement" of their land?
How are structure and function related?	How does the structure of various insects help them to survive?
In what ways does art reflect, as well as shape, culture?	What do ceremonial masks reveal about the Inca culture?
How do authors use story elements to establish mood?	How does John Updike use setting to establish a mood?
What makes a system?	How do our various body systems interact?
What are common factors in the rise and fall of powerful nations?	Why did the Soviet Union collapse?

As you can see, the essential questions on the right focus on particular topics, whereas the companion questions to the left are broader in nature. (Although seemingly convergent, these topical questions still give rise to different plausible responses.) Notice that the overarching EQs make no mention of the specific content of the unit. They transcend particular subject matter to point toward broader, transferable understandings that cut across unit (and even course) topics.

Overarching essential questions (and understandings) are valuable for framing entire courses and programs of study (such as a K–12 health curriculum). They provide the conceptual armature for an understanding-based curriculum that spirals around the same EQs across the grades.

D

Nonessential Questions

Various types of questions are used in schools, and most are not essential in our sense of the term (even if they all play useful roles in teaching). Let's look at three other types of common classroom questions: questions that lead, guide, and hook. In later chapters we will describe other types, including probing questions and questions used to check for understanding.

Questions That Lead

The legendary comedian Groucho Marx hosted a television quiz show in the 1960s called *You Bet Your Life*. Whenever a contestant missed all or most of the quiz queries, Groucho would pose the final face-saving question: "Who is buried in Grant's tomb?" (Alas, not all contestants could answer it!) This is a perfect example of a leading question because it points to and demands the single, "correct" answer. (We realize that lawyers and debaters define leading questions differently, but we think the term is apt for describing the teacher's motive: to elicit a correct answer.) Here are other examples of leading questions:

- What is seven times six?
- What did we say was true of all four-sided shapes?
- Who was the president at the start of the Great Depression?
- What is the chemical symbol for mercury?
- What's the relative minor key of A major?
- Which letters are vowels?

Leading questions allow a teacher to check that learners can recollect or locate specific information. Thus they have their place when recall and reinforcement of factual knowledge are desired. Another term for such questions is rhetorical, which usefully reminds us that they aren't real questions in an important sense. Their purpose is not to signal inquiry but to point to a fact. That's why lawyers and debaters routinely use rhetorical questions to direct attention to their point.

Questions That Guide

Another familiar type of question used by teachers (and found in textbooks) may be called "guiding." Consider the following examples:

- Is this sentence punctuated properly?
- Why must the answer be less than zero?
- How do we use the "rule of thirds" in photography?
- Can you state Newton's 2nd Law in your own words?
- When did the main character begin to suspect his former friend?
- What were the four causes of World War I? (This information is found on different pages in the text.)
- Which words tend to be feminine and which masculine in French?

Questions that guide are broader than questions that lead, but are not truly open-ended or designed to cause in-depth inquiry. Each of these questions is steering the student toward previously targeted knowledge and skill—to arrive at a definite answer. Yet the answer requires some inference, not simply recall. As such they are important tools for helping teachers achieve specific content outcomes. Although such questions are familiar and useful, we do not consider them essential, as you will see if you check them against the seven criteria noted earlier. They may be fruitfully employed during one or more lessons, but they are not intended to set up a long-term inquiry and will not be revisited over an extended time period.

Questions That Hook

The best teachers have long recognized the value of hooking students' attention at the start of a new lesson, unit, or course. Indeed, clever opening questions can spark interest, capture imagination, and set up wonder. Although we most certainly encourage the use of questions that hook students' interest, they differ from essential questions. Consider two examples of "hooks" to see how they are distinguished from associated essential questions:

1. To open a unit on nutrition for 6th graders, a teacher poses the following question: "Can what you eat and drink help prevent zits?" This hook effectively captures students' interest and launches an exploration of the unit's broader EQ: "What should we eat?"
2. A science teacher in an Alaskan village uses this question to hook his students: "Are we drinking the same water as our ancestors?" Given the cultural reverence for ancestors and the significance of the ocean for survival, this is an elegant opener in the context of his school community. It is coupled with the companion essential question "Where does water come from and where does it go?" to spark ongoing inquiry into the relevant science.