# Insufficient **Questioning**

Effective questioning can keep students interested and improve their learning.

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## By Ivan Hannel

The idea of engaging students through questions is as old as Socrates. Most educators readily agree that questioning is an important aspect of teaching and learning. Why, then, do administrators frequently note the lack of effective questioning in classrooms?

A possible explanation is that most K-12 teachers have not had substantive training in the art and science of effective questioning. Yes, most teachers have been given snippets of information about questioning — including lists of question-stems to consider or recitations of Bloom's Taxonomy as a

**A SOPHISTICATED PRIMER**

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scaffold for questioning — but few teachers have been taught a practical pedagogy of questioning. Consider that, if asked, "How do you question students?" few teachers could articulate their own method of questioning. By comparison, most teachers could readily outline a cohort of strategies — a system, if you will — for dealing with student misbehavior. In short, questioning is simultaneously familiar and obvious, but not truly well-understood, and this limits its effective role in the classroom.

## HIGHLY EFFECTIVE QUESTIONING

I developed Highly Effective Questioning (HEQ) over three decades of work with schools in the United States and abroad, based on the work originally done by my parents, Lee and Maria Veronica Hannel, both psychologists. HEQ is a K-12 questioning pedagogy that embraces any subject matter or student population. Once or twice each day, teachers create short, five- to 25-minute instructional segments devoted to questioning students. These segments usually follow an introductory lecture or other learning experience that gives students the needed background information.

There are three key criteria prerequisite to effective questioning. First, teachers must create a classroom environment that is conducive to questioning, one that is robust enough to challenge what I call the *culture of disengagement* found in some classrooms. Second, teachers must develop *expert patterns* through the questions they ask. Otherwise, they may ask good questions, but those questions will be random. The expert patterns supply the rationale for scaffolding questions, which is something that needs to be planned. And third, teachers must understand why some students may not be responsive to even well-scaffolded questions and what to do when those situations arise, as they inevitably do. HEQ describes these situations as *cognitive roadblocks*.

## THE CULTURE OF DISENGAGEMENT

For some students, the foremost obstacle to the challenge posed by questioning isn't cognitive. The foremost obstacle is that they have not learned the culture of questioning. No matter how well-scaffolded a series of questions might be, the student who refuses to participate will not benefit from them.

HEQ gives teachers specific strategies to deal with the most common behavioral roadblocks to questioning. The strategies themselves are unremarkable and at first glance seem simple. However, the HEQ strategies required to create a culture of engagement may conflict with other cultural norms we hold.

**Teachers who don't plan for questioning are unlikely to have considered what to do when their intuitive questions don't lead to the desired learning.**

**Behavioral Strategy #1: Involuntary participation**. One of the core behavioral HEQ practices is calling on any student in the room, whether or not a hand is raised to answer. Obviously, the teacher must use judgment and perceive when it's not a good moment to question a student. But the general rule is that when you're in the classroom, you're ripe for being asked a question.

Calling on all students, whether or not they volunteer for the question, would seem to be an obvious strategy. Then why do we often see students and teachers complicit in engaging only those who volunteer? HEQ suggests that adults have two norms in conflict.

HEQ suggests that the norm of participation, which is critical to a culture of questioning, is in conflict with a broader cultural norm that we might call the norm of "being polite." The norm of being polite includes not engaging people who don't wish to be engaged. A good example is when we enter an elevator and see another rider already inside. Often, the signs are subtle but clear when that rider wishes to be left alone. Most often, we acknowledge their subtle communication and keep to ourselves. Imagine, instead, walking into that same elevator and saying, "Hello. Good morning. Oh, I have an academic question to ask you!" This is the norm of HEQ. It may not be appropriate in the elevator, but it has its place in the classroom.

Consider a teacher and a student in the following situation. The teacher asks the student about the main idea of some passage.

Teacher: "Manuel, what was the main idea of what we read in class yesterday?
Manuel: "I didn't have my hand up."
Teacher: "I know. But I'm still calling on you."
Manuel: Stares back, silent.
Teacher: "Manuel, you know our rules during HEQ. I am allowed to call on any of you. But remember, this will only last for a few more minutes, okay?"
Manuel: "I want to pass."
Teacher: "No, you can't pass. I just need you to try and answer that question. Let me ask it again. What was the main idea of what we read yesterday? You don't have to be perfect, but you must try to answer."

The point of the dialogue isn't to show any spectacular kind of questioning. Rather, it shows that the teacher persists, yet provides some reasons for the student to participate. The teacher may have to move on, but the student knows his participation is expected.

**Behavioral Strategy #2: Justify all responses.** Sometimes, students will respond to a question as sparingly as possible. Often, they'll give a formal answer but not provide their reasoning.

It's a frustrating habit. We must infer that the student who responds like this is hoping that the teacher will be satisfied and just move on to another student.

For the teacher, however, the underlying reasoning that supports an answer is the most pertinent part of the response. HEQ encourages teachers to follow a question-response-question pattern in their questioning. The teacher asks an initial question, gets an initial answer, and then asks a follow-up question seeking a justification or further explanation of the student's reasoning.

For example, the student has selected an answer on a multiple-choice question.

Teacher: "What answer did you select?"
Student: "I chose A."
Teacher: "Okay. Why'd you decide on A?"
Student: "Because it's true."
Teacher: "Fine, but why is it true?"
Student: "Because it is the author's purpose."
Teacher: "But what makes the answer the author's purpose?"

As in the earlier example, this dialogue isn't intended to represent perfect questioning. But you can see how the teacher persists in asking for the student's reasoning and does not accept a cursory, unreasoned response.

The teacher who calls on students who haven't volunteered and requires them to explain their reasoning begins to change the culture of the classroom. Students' resistance when asked to participate is gradually perceived as inviting more engagement, not less. Over time, students learn that the easiest way to have a moment of peace is to participate and provide reasoning for their thinking.

## EXPERT PATTERNS

Having a good culture of questioning is very important, but having the right questions to ask is important, too. HEQ helps teachers learn to plan their questions according to "expert patterns." What is an expert pattern? An expert pattern is simply the series of steps that an expert uses to understand information. Consider how a dentist examines your teeth in a certain pattern during an initial examination. Or how a mechanic looks at the engine bay of a car in a particular order. Even professional athletes often follow a routine before serving a tennis ball or taking a swing. These people are all experts, and their patterns of thinking and activity are expert patterns.

Formally planning the sequence of questions — creating expert patterns of questions — is vital for teachers who want to be more successful with their questioning. Many teachers simply devise their questions on the fly. They dive into questioning and try to logically extrude critical thinking from stu-

### TO READ MORE ABOUT QUESTIONING


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dents. This spontaneous questioning is probably better than none at all. However, teachers who don't plan for questioning are unlikely to have considered what to do when their intuitive questions don't lead to the desired learning.

Teachers who formally plan some of their questions inevitably consider what to do if their questions don't elicit the desired response. They consider not only the questions they want to ask, but also the probable responses and what they might do to extend or correct them. In short, teachers who recognize expert patterns prepare better for both expected and divergent answers.

The expert pattern HEQ uses is based on a series of mental acts. It accords well with Bloom's Taxonomy, though it has some differences in the way it is presented. The HEQ pattern has five steps in questioning toward the understanding of content.

1. Label or identify key facts.
2. Compare, connect, infer, or find disconnections in the information learned in Step 1.
3. Make short summaries or sequences of what was learned in Steps 1 and 2.
4. Apply, predict, or hypothesize what was learned from Steps 1, 2, and 3.
5. Make a final, larger summary of the overall learning.

## COGNITIVE ROADBLOCKS

In addition to the overall sequence of questions, teachers must understand why some students have trouble answering even well-scaffolded questions. Some students have problems labeling basic information. Or students may succeed in Steps 1 and 2 but then have difficulty answering Step 3. If our questions are well-scaffolded in an expert pattern, why don't they automatically lead to learning?

Obviously, there is always some gap between the desired learning and the student's current level of thinking, the zone of proximal development. But there may be other reasons, beyond the inherently ascending complexity of information, to explain why students falter at various stages in the questioning process. The term *cognitive roadblock* describes why students falter. A short discussion of two of the five cognitive steps involved can help illustrate this.

**Over time, students learn that the easiest way to have a moment of peace is to participate and provide reasoning for their thinking.**

## IDENTIFY RELEVANT FACTS FIRST

Step 1 questions in HEQ ask students to engage in mental acts commonly described as labeling, finding, and identifying. It would seem to be easy to ask students to identify key facts, label the parts of something, or simply tell what they see on a page. These basic questions are often referred to as "knowledge" questions. What cognitive roadblock could appear at such an early stage of questioning?

While most students can label and identify information, poorly achieving students seem to do so in random ways. These students will look through an equation, a text selection, or an entire page and, generally speaking, not discriminate between relevant and irrelevant facts. They will find an interesting word somewhere on the page, or notice an image tucked into a corner, or focus on the last expression in the last paragraph they read. These students see literally everything but, in a way, also see nothing. If such students are limited in labeling, what will happen when they're asked to make comparisons or find relationships between what was haphazardly labeled or identified?

HEQ posits that random awareness of initial facts may occur because teachers often fail to ask Step 1 questions in a way that stresses the underlying relevancy of the information to be labeled or identified. Step 1 questions must take into account the priority of the information that the teacher wishes the students to notice. HEQ calls this strategy in Step 1, asking for "Relevant Facts First."

For example, if we want students to always observe, before reading a selection, what the title given to the selection implies, then we should first ask them about titles. Do not ask about the title as the 15th question down the list. In mathematics, if the order of operations is key, first ask them about that. Teachers who ask random questions about labeling or identifying generally get back random labeling or identification from students.

Consider the following two short threads of questions. One thread does a better job of getting to the idea of asking questions according to priority. The second thread suggests that the information has no particular priority.

***Example 1***

What do you see?
What do you notice first?
Where should we begin?
What are some of the key facts mentioned?
What is the most relevant information given?

***Example 2***

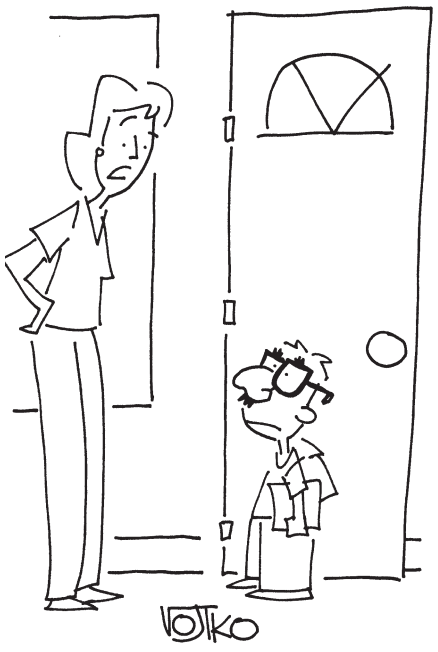
What do you see?
Can you tell me a fact?
What else do you see?
Anything else?
What does the term "X" mean?

Why, as adults, do our questioning patterns often yield the kinds of questions shown in Example 2? HEQ proposes that we subconsciously expect that relevant information will simply present its own relevance. We infer that, with experience, students will eventually notice how a basic thing like a story title has an inordinate impor-

tance to understanding what follows. This assumption that what is relevant presents its own relevancy is a truism of the physical world, the world of experience.

For example, we learn by experience that, in a car accident, the color of the car crashing into us is not immediately relevant. Experience in the physical world teaches us when certain basic facts matter and when they don't. But with abstract things, which are what constitute most school curricula, the underlying relevancy of information doesn't present itself simply through experience. A title to a story — beyond the fact that it's usually at the top of the selection, centered, and in bold type — doesn't demand attention like an approaching car does. Such information is easily missed by a student who doesn't understand that information on a written page also has priorities.

Teachers who follow the rule of "relevant facts first" better help students succeed in the first cognitive step. They help to create an expert pattern for students to follow. And they understand why intuitive questioning may not be enough to help students prioritize basic information, so they plan better Step 1 questions.




*"Think that will work so the teacher won't call on you today?"*

## MAKE SHORT SUMMARIES

Step 3 questions require students to make short summaries of information. A student who cannot make a summary of the first three lines of a math problem or the first paragraphs of a story is unlikely to successfully answer questions about main ideas or problem-solving methods. Step 3 questions are easy to ask: "What have you learned so far?" or "Can you make a short summary of the first part of the problem?" What could be the cognitive roadblock in Step 3?

Teachers often ask students to help complete a summary but fail to ask them to actually summarize. Consider the following example where the summary requires the student to tell about events A through D.

Teacher: "Maria, can you summarize the story?"
Maria: Tells about A.
Teacher: "Good. John, can you tell me about B?"
John: Tells about B.
Teacher: "Bill, tell about what comes next."
Bill: Tells about C.
Teacher: "And what is the last part, Celia?"
Celia: Tells about D.
Teacher: "Well, done. That was a good summary of the story."

Though the teacher intends well, no single student has actually summarized. Each student has told only bits and pieces of a whole. However, the oral narration does feel like a summary because all the pieces fit together.

A better approach would be to ask one student to summarize and then ask other students to either repeat that summary or make their own.

Teacher: "Maria, can you tell me about the story?"
Maria: Tells about A.
Teacher: "That's a start. But I need you to tell me more than that."
Maria: Tells about B.
Teacher: "Okay, tell me both A and B and add what comes next."
Maria: Tells about A, B, and C.
Teacher: "What happens beyond that?"
Maria: Tells about D.
Teacher: "Okay, can you now put it all together and tell me the whole thing?"
Maria: Tells about A, B, C, and D.
Teacher: "Okay. Joe, you just heard what Maria said, A through D. Please tell me A through D in your own way or repeat for me what Maria said. Celia, you'll do the same after Joe."

The cognitive roadblock in Step 3 really isn't cognitive at all, it's cultural. Many students simply don't like to speak for 30 to 60 seconds in a row about something. It's hard to imagine summarizing something in less time than that. Try summarizing half of a basketball game or part of a movie in less than 30 seconds — it's hard to do. Unfortunately, the string of questions teachers intuitively employ to elicit summarization often doesn't actually require summative behavior. We get what we ask for; it's just not a summary.

## HIGHLY EFFECTIVE QUESTIONING

Highly Effective Questioning not only is a method of questioning, but also a process that leads to introspection on why we question the way we do and what we can do to improve our questions. Obviously, HEQ is not a cure-all for the emotional disengagement or cognitive dysfunction students may have. But communication is at the heart of what it means to teach. Teachers who communicate well with students through questioning elevate their students' interest in learning and skill in understanding. Most teachers rely on their intuitive sense of questioning but would be better served by formal training in how to create expert patterns of thinking through questions. K