

Effective Questioning

Empowering teachers to ask powerful questions
(**version 2.0—March 10, 2009**)

Jim Knight

The Kansas Coaching Project

High-Level Questioning

Some rights reserved. Educators are granted permission to copy this document for use with students and teachers. However, no part of this document may be included in other publications in any format without written permission from the Instructional Coaching Group. www.instructionalcoaching.com. Copyright © 2008

Effective Questioning At Glance

Effective questioning involves planning and using questions that are appropriate for the kind of learning taking place. Often questions can be catalysts for student thinking and classroom conversation and dialogue.

The Right Type of Question for the Kind of Learning Occurring

Different questions are appropriate for different kinds of learning. When students are experiencing mechanical learning, judgmental, open-ended and close-ended questions are appropriate. When students are experiencing metaphorical learning, non-judgmental open-ended questions are appropriate.

Judgmental Questions

These are questions that have right or wrong answers. Some examples include:

- What is 4x4?
- What is the capital of Kansas?
- How many goals did Wayne Gretzky score in his most prolific year?

Non-Judgmental Questions

These are questions that do not have a correct response, or questions that can be answered in a number of different ways? Some examples include:

- How would you feel if you were the central character?
- What would you do if you were in this situation?
- What is another way of looking at this?

Open-Ended & Close-Ended Questions

Open-ended questions prompt extended responses. Close-ended questions prompt discrete responses. “How old are you?” is a close-ended question. “How do you feel about your age?” is an open-ended question that would likely demand a more extensive response.

Levels of Questions

Several taxonomies have been created to identify levels of questions, and any of them can be used with teachers to identify the appropriate level for their questions. We have adopted three levels of questions:

1. Know: Questions that prompt students to demonstrate that they can remember information they have learned.
2. Understand: Questions that prompt students to demonstrate that they comprehend the implications of the information they have learned.
3. Apply: Questions that prompt students to extend their knowledge and understanding to new situations or settings.

IC CHEAT SHEET

1. Identify what kind of learning the question addresses (mechanical or metaphorical)
2. Identify the level of the question (know, understand, apply)
3. Develop questions that are the correct type and level
4. Use the questions effectively with students

1. MECHANICAL VS METAPHORICAL LEARNING

What kind of learning is taking place?

Before choosing a story and planning how to teach it, teachers should consider what kind of learning they want their students to experience. One way to think about learning is to sort learning under two organizing concepts: mechanical and metaphorical (Knight, 1999).

Mechanical Learning

Mechanical learning refers to the learning students experience when the content to be learned in a class is unambiguous, when the outcomes are unmistakable and straight forward, and when there is a right and wrong answer that can be clearly identified. Examples of mechanical knowledge might include phonological awareness, memorization of essential concepts and terminology, grammatical terms, math facts, and so on. When a teacher employs instructional practices to enact mechanical learning, often called direct instruction, the teacher wants the students to master the content in pretty much the same way that he or she understands it.

Metaphorical Learning

This type of learning shares attributes with metaphor; it is by definition ambiguous, and functions indirectly. Metaphorical knowledge has no clear right and wrong outcome. For example, people determine and develop their own understandings of intellectual attributes like aesthetic response, personal attributes like compassion or heroism, and many creative acts such as higher-order writing activities. Metaphorical knowledge is complex, ambiguous, and so uniquely individual that we damage it if we reduce it. When a teacher employs instructional practices to enact mechanical learning, often called constructivist practices, the teacher wants students to make their own sense of what they are learning.

What does this mean for questions?

Different kinds of learning require different types and kinds of questions. Mechanical learning is best facilitated by judgmental close and open-ended questions. Often mechanical learning involves knowledge and understanding questions. Metaphorical learning is best facilitated by non-judgmental open-ended questions. Often mechanical learning involves understanding and application questions.

2. IDENTIFY THE LEVEL OF QUESTION

Knowledge: Questions that prompt students to demonstrate that they can remember information they have learned. Knowledge questions are frequently close-ended.

- What is 4×4
- What is a noun?
- What are the five steps of the strategy?
- What are some countries that border Tanzania?

Understanding: Questions that prompt students to demonstrate that they comprehend the implications of the information they have learned. Understanding questions can be open-ended or close ended.

- What is one way that the geographical differences between the north and the south led to the start of the civil war?
- How would you paraphrase what you just read?
- What would happen if you injected pure water into an animal cell and how do you know this?
- If you dropped a ten-pound rock and a one-pound rock from the top of the Empire State building, which would hit the ground first?

Application: Questions that prompt students to extend their knowledge and understanding to new situations, settings, or content.

- Given what we've learned about how to read poetry, what do you think this poem is meant to convey?
- How can you use what we have learned about problem solving in math to solve a personal problem?
- What are the implications of what we have learned about the Vietnam War for future US foreign policy?

3. IDENTIFY THE TYPE OF QUESTION

If the question is for mechanical learning choose:

- Judgmental questions
- Open-ended questions or
- Close-ended questions

If the question is for metaphorical learning choose:

- Non-judgmental questions
- Open-ended questions

4. USE QUESTIONS EFFECTIVELY

1. Do I use at least a 3-1 ratio of positive to critical comments in my classroom?
2. Do I ask questions of all students in my class?
3. Do I ask at least 3 questions of all students who say, "I don't know"?--(a) ask the same question again, (b) rephrase the question and ask it again, (c) ask a question that addresses some smaller part of the content.
4. Do I ask the same number of questions of all students?
5. Do I ask students to explain their answers?
6. Do I avoid giving away answers when I ask questions?
7. Do I ask open-ended questions?
8. Do I ask my students to be specific and complete?

Sample Question Chart

Question	Type	Level
Explain how she got the answer.		
What's another explanation?		
What did you end up writing on your piece of paper?		
Is there more than one way?		
Think of another way to get the same answer.		
Can you think of a way that would deal with subtraction?		
What is the difference between translation, rotation, and reflection?		
Someone describe the other two.		
What is the next high lighted word?		
What is a variable?		
What is our last high lighted word?		
Tell me why you think this is balanced?		
Let's look at this desk—what would happen if this wasn't balanced?		
What do you think? Why?		
Who can explain why $36/12=3$?		
How many of you tried to figure that out?		
Is my solution right to the scale of being balanced?		
Why is it balanced?		
Is that a correct solution to my equation?		
Why the double thumb down?		
Did anyone go 7×8 ?		
How would you explain this to someone that doesn't know?		
Did you estimate?		
Is this a solution to make my equation balanced?		
I need you to answer and give an explanation. What is it?		
Did anyone do anything different than that?		
What is "w"?		
Can you explain that?		
What is "b"?		
How did you get that answer?		

1.Knowledge	2.Comprehension	3.Application
4. Analysis	5.Synthesis	6.Evaluation