



HIGH IMPACT TEACHING / OVERVIEW

A guide to successful questioning



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Why is questioning important?

Teachers are almost always asking questions. But the types of questions asked and the kinds of responses students have to generate can have very different effects on students' learning. Questions that engage students in complex thinking can increase students' curiosity, develop their problem-solving skills, improve their engagement and strengthen their ability to persevere.

Well-crafted questions also help students to make connections between ideas, and to develop personal meaning and associations with previously learned content. When students are challenged to explain, listen and problem solve, they develop important thinking skills, strategies for working with content, and networks of ideas.

Instead of directly giving information to students, teachers can involve students actively in learning through carefully sequenced questions which encourage students to draw on current cues and past experiences to think through a problem for themselves. This typically leads to students experiencing a greater sense of success and self-efficacy. Questioning helps students discover, evaluate and apply content, and leads to better long-term recall.

How to improve your questioning

Effective teachers ask some *direct* and *specific* questions which help them to monitor students' progress and understanding. However, they spend a significant proportion of time asking *higher-order questions that encourage students* to think (and provide students with time to think), and to give lengthy answers, including explanations and justifications.

In responding to questions, teachers should *avoid designating a student as right or wrong*, which effectively closes the dialogue. Instead effective teachers *ask follow-up questions to probe* and clarify a student's thinking. Well-designed questions elicit evidence of students' current understandings (and misunderstandings), and *scaffold students'* thinking by helping students *make connections* between their existing knowledge and the new problems of learning.

Four ways to improve questioning

- Make sure questions are *demanding*.
- *Allow enough time* for students to think about answers.
- *Involve as many students as possible* in thinking about answers to a question
- *Follow up incorrect responses with probing or scaffolding* for the correct answer.

How to make your questions more demanding

Although every lesson will involve questions that invite students to recall facts and knowledge (such as “what does a plant need to grow?”; “what is the answer to this maths problem?”), it is important to ask questions that get students to think at a higher level. You should therefore *aim for a mix of product questions* (which elicit a single correct/incorrect response from students) and process questions (such as asking students to give explanations).

When quickfire, factual questions predominate, classroom discourse takes the pattern of teacher initiation (the question), a student’s (short) response, and teacher evaluation (correct or incorrect). In these kinds of exchanges, teacher talk and direction dominate, and student apathy and boredom are common.

However, if questioning is used to *encourage sustained dialogue*, students are more intellectually stimulated and engaged, and do most of the talking, which means they are doing a lot more thinking. Student interest is engaged by stimulating discussion provoked by *interesting questions*. *Try to ask questions that students have not been asked before.*

Higher-level questions often involve the application of knowledge in ways that solidify students’ understanding. Questions should *encourage students to think and construct answers, rather than to recite information*. Higher-level questions involve students in using information and concepts to *solve a problem*, with at least two steps required to producing an answer, or a choice of steps or sources, *necessitating strategic thinking*. Compare, for example, asking students to describe the process of photosynthesis (recall) with asking students to suggest how they would go about determining the cause of a plant failing to thrive.

Good questions get students describing, summarising, evaluating, ranking, interpreting, explaining, assessing, planning, predicting, differentiating, classifying, concluding, relating and extending.

Note that making changes to your questioning practice can be challenging for students whose experience is of questions that require the recall of information or the repetitive performance of a procedure. Students might need time and support to go beyond their comfort zone.

Higher-level questioning prompts	
<p>Questions that seek clarification:</p> <ul style="list-style-type: none"> • Can you explain that...? • What do you mean by ...? • Can you give me an example of ...? • How does that help ...? • Does anyone have a question to ask [student] about this answer? 	<p>Questions that invite analysis:</p> <ul style="list-style-type: none"> • What are other possible outcomes? • How is ... similar to ...? • What are some of the problems of ...? • Can you distinguish between ...? • What were some of the motives behind ...? • What might someone else think differently about ...?
<p>Questions that probe reason and evidence:</p> <ul style="list-style-type: none"> • Why do you think that ...? • How do we know that ...? • What are your reasons ...? • Do you have evidence ...? • Why might this be true / untrue ...? • Can you give me an example / counter-example ...? 	<p>Questions to encourage synthesis:</p> <ul style="list-style-type: none"> • Can you see a possible solution to ...? • If you had access to all the resources how would you deal with ...? • What would happen if ...? • How many ways can you ...? • Can you create new and unusual uses for ...? • Can you develop a proposal which would ...?
<p>Questions engaging evaluation:</p> <ul style="list-style-type: none"> • Is there a better solution to ...? • How could X be considered better than Y? • Can you defend your position about ...? • Do you think ... is a good or a bad thing? • How would you have handled ...? • What changes to ... would you recommend? 	<p>Questions exploring alternative views:</p> <ul style="list-style-type: none"> • Can you put it another way ...? • Is there another point of view ...? • What if someone were to suggest that ...? • What would someone who disagreed with you say ...? • What is the difference between those views / ideas ...?
<p>Questions about implications and consequences:</p> <ul style="list-style-type: none"> • What follows (or what can we work out from) what you say ...? • Does it agree with what was said earlier ...? • What would be the consequences of that ...? • Is there a general rule for that ...? • How could you test to see if it were true ...? 	<p>Questions to develop metacognition:</p> <ul style="list-style-type: none"> • How does what you are doing help you? • What one thing will you remember long after this lesson and why? • What single question are you still trying to understand and why might this be? • How did you come to that conclusion? • Are there any other ways of thinking about this problem? • What strategies are appropriate for solving this problem and why? • What might other people's perspectives be on this? • What strategies might you use to extract the additional information you need? • How well are the different strategies working? • How do you know you have got the right answer? • How could this be interpreted in a different way? • What do you need to know to be able to answer this better? • How did you feel when you tried to answer the question?
<p>Questions about the question/discussion:</p> <ul style="list-style-type: none"> • Do you have a question about that ...? • What kind of question is it ...? • How does what was said / the question help us ...? • Where have we got to / who can summarise so far ...? • Are we any closer to answering the question / problem ...? 	

Adapted from Spendlove, D. (2015). *100 ideas for secondary school teachers: Assessment for learning*. London, England: Bloomsbury Education.

Seven ways to make your questions more demanding

1. **Pre-plan your questions.** It's often hard to think of higher-level questions on the spot. And often we default to asking low-level repetitive questions.
1. **Make questions the cornerstones of learning.** Consider having a 'question plan' rather than a 'lesson plan'. Perhaps even set questions as learning objectives and explain to students that these are the questions they will be able to answer at the end of the lesson.
1. **Follow factual questions with questions that inspire thought.** This connects prior knowledge (recall) to problem solving and ongoing learning.
1. **Use straightforward language.** Formulate questions using simple language so that they remain understandable.
1. **Keep questions short.** This helps students not to lose the intent of the question. Consider breaking longer questions into several questions or split questions into parts.
1. **Ensure students have the necessary knowledge to answer higher-order questions.** Ensure that you teach the background information and concepts that students need in order to think at a deeper level (this might be new information for some students, or useful as a prompt to prior knowledge for others).
1. **Ask questions that get students to make connections.** Plan questions by considering the background knowledge and vocabulary that students need to understand the topic, what connections can be made with what students' already know, and what real-world connections can be made to relate concepts to their purpose and importance outside of school.

Verbs to base questions upon

Remember/recall: define, describe, identify, label, match, list, name, select

Understand: clarify, demonstrate, describe, expand, explain, summarise, retell

Apply: calculate, compare, contrast, convert, demonstrate, determine, elaborate

Analyse: categorise, classify, compare, confirm, contrast, diagram, prove/disprove, illustrate, infer, simplify

Evaluate: criticise, decide, defend, discover, explain, interpret, judge, justify, predict

Create: construct, design, develop, devise, extrapolate, generate, illustrate, improve, produce

Adapted from Depka, E. (2017). *Raising the rigour: Effective questioning strategies and techniques for the classroom*. Bloomington, IN: Solution Tree Press.

“Remember, expand, elaborate, add evidence”

One way to promote fuller, more thoughtful and higher quality responses from students is to develop a classroom expectation for every response to include the following set of actions:

- remember (recite or list information)
- expand (add more information)
- elaborate (add their own thinking)
- add evidence or examples (give reasons for their opinions).

Templates can help students use the pattern until its components have been internalised and students can provide responses that include the four categories without it. Checking use of the format could also be an exercise for peer assessment.

‘Wicked’ questions

Ask ‘wicked’ questions to provoke discussion and reasoning and build students’ confidence with higher-level thinking. Wicked questions are questions with no obvious right answer, or with more than one answer. They can be questions that provoke or divide opinion, or that challenge students’ assumptions or present a paradox. These kinds of questions are open-ended and consider everyday topics in which all students could have an initial opinion as they are not solely dependent on background knowledge. They help students create a meaningful connection to a topic before learning more about it.

Through discussion of these kinds of questions, students with less experience with the topic have opportunities to build background knowledge by listening to other students. Wicked question can be used for collaborative work, and students can be asked to present, challenge or defend their positions. These questions can also be revisited after a unit of study so that new learning can be incorporated into students’ thinking about the topic.

Example ‘wicked’ questions:

Is there more love than hate in the world?

Is it OK to bully a bully?

Does charity simply increase the need for charities?

What causes conflict? In an argument, is one person always right?

How to allow enough time for student thinking

Teachers often leave as little as a second for student thinking, which is not enough time for students to process the question or to formulate an answer. Think of questions as fast or slow: fast questions are low-level questions that students know the answer to without having to think, such as names or dates. Slow thinking questions are those that require a bit more cognitive processing, making students think, for example, by asking them to analyse or evaluate in order to arrive at an answer.

Try to keep a balance of fast and slow thinking questions. For example, if you check students’ knowledge of dates, names and places in a history lesson, go on to ask richer questions that compare and contrast events or explain why a date is important historically. In general, slow thinking questions make the greatest cognitive demand on students and lead to greater learning.

The use of a 'wait time' after asking a question can increase the amount of thinking time and increase student participation. Time your pause – use a timer, or your smartphone or a Powerpoint timer. The most effective wait time will probably vary from class to class, but three to five seconds should be sufficient. Pausing again after receiving an answer from a student can also increase student thinking and participation.

Pause ... Pause ... Share ... (PPS)

P: The teacher asks a question and pauses without giving or taking an answer

P: The teacher signals they will take an answer, then reflects this answer back to the group, asking the group if they think the answer is correct or if anyone can expand on the answer. There then follows a second pause without the teacher giving or taking an answer.

S: The teacher takes a final answer and then shares and expands upon the answer with the group.

Spendlove, D. (2015). 100 ideas for secondary school teachers: Assessment for learning. London, England: Bloomsbury Education.

How to involve as many students as possible in thinking about answers

Only about 25 per cent of students are usually involved in classroom questioning. Research shows teachers tend to take more responses from those students that appear to know the answers to questions as well as from those in the front row of desks. It is often the same students who throw their hands up, eager to respond, which denies other students time to think about the answer. Those students who sit on the periphery (the back and corners) are asked fewest questions.

Have a 'hands down, heads up' rule

Explain to students that this means that the question you are about to ask requires thinking about and everyone will need to have an answer. Then select a student to answer the question. This strategy is essential for increasing the amount of thinking taking place in a lesson. Finally, ensure your questions are directed to different students. Once students know that there is a high probability of being asked a question, they will participate in thinking about every question you pose, just in case. Therefore, it is important to ask the question before stating who is to respond.

Methods for the random selection of students for response

- Alternate questions between boys and girls (also consider how you respond to students of different genders; research shows teachers tend to give fuller explanations to girls).
- Move questions around in a pre-determined pattern, for example, starting at the corners and working your way in.
- Use random name generators (lollysticks or counters with names on) so that all students are equally likely to be asked a question.
- Throw a beanbag, call or other appropriate object for the person answering the question to hold – this is good for changing students' point of attention too.

Three strategies for increasing participation

1. **'Phone a friend':** Make it your classroom culture that not knowing the answer is not a way of getting out of responding. Invent a ritual that you adopt for a "don't know", such as 'phone a friend' for a clue, for example.
2. **Share with a partner:** Have students share their thinking with a partner before taking answers to a question. Ask a big question, and give 'wait time' so that students consider their individual response. Then ask them to discuss the question with a partner to arrive at a joint response, and take as many joint response answers as desired. Experiment with pairings: try mixed ability and mixed gender pairings.
3. **Targeted questioning:** You might also try identifying specific questions you need to ask of particular students in your planning, which is called targeted questioning. Here a question is planned as an intervention in students' learning, for example, relating to misconceptions, or to monitor their understanding of the learning so far.

How to follow up responses

If a student gives a wrong answer, don't move on to the next student, but probe for, or scaffold, the student towards, the correct answer. Some strategies you could try:

- **Acknowledge if the student is partially correct, and affirm the correct part.**
- **Use an 'echo' strategy** to help students construct their answers, for example, when a student gives a partial answer, reflect their answer back to them, or ask clarifying questions, or rephrase the question to help them build a clearer and fuller response.
- **Use questioning to scaffold students to the right answer,** for example, directing them to think about relevant information they have or to relate prior experiences to the problem.
- **Even where students' responses are correct, challenge students' accuracy and completeness** in order to achieve a deeper understanding. However, it's also important to be clear when students have provided the correct answer, for both that student's learning and the learning of the class.

Taking questioning further

Use self-analysis, audio or video recording or peer observation to assess your questioning.

Ask a colleague to observe a lesson and map where the questions are directed to in your classroom, or to code the types of question you ask.