



Tom Sherrington



SIDE LINES

RESEARCH SUMMARY



Barak Rosenshine

In his famous *Principles of Instruction*, Rosenshine has this to say about questioning:

“The teacher’s questions and student discussion are a major way of providing this necessary practice. The most successful teachers in these studies spent more than half the class time lecturing, demonstrating and asking questions.”

DEEPER QUESTIONS



Michelene Chi

In studying the training of teachers’ questions in Science lessons, Michelene Chi and her fellow researcher, Joshua Morris, came to this conclusion: *“Constructive questions, such as those requiring inferential thought and collaboration, lead to deeper thinking and therefore stronger learning gains than questions.”*

<https://www.tandfonline.com/loi/vjer20>

WHY IS QUESTIONING IMPORTANT?

The three main purposes of asking questions are to:

- maximise students’ thinking
- maximise feedback to teachers
- give students opportunities to practise articulating their thoughts.

With these intentions in mind, you will see in all the various questioning techniques, strategies that enable this to happen. They also avoid opportunities where students can choose not to think. Such clusters of questions build a culture of challenge and inclusion, orchestrated by the teacher designing the interactions.

COLD CALLING

This is one of the most significant techniques available to teachers to trigger all students to think hard. This happens by doing the following.

- asking students to provide their method alongside their answer.
- inviting students to do so with a friendly *“what were you thinking, Peter?”*
- not indicating who is going to be asked, so everyone prepares an answer.
- giving students sufficient thinking time and avoiding too short a period.
- responding with interest to every student’s answer — *“I’m interested in you, Rowena. What’s your method?”*
- using the above as a default method, creating a culture of intellectual energy.
- acknowledging that it’s normal to feel uncertain of your answer.
- adopting an invitational style to your questioning, not issuing a stream of questions, seemingly aggressively.
- scanning the room to include everyone.

THINK, PAIR, SHARE

Most difficult-to-achieve activities require rehearsal. This simple principle applies to answering questions. Think, Pair, Share offers students this opportunity. Remember to:

- establish talking partners early on.
- make it a structured part of lessons.
- use it to break up teacher talk.
- use pairs to maximise participation.
- be specific in your task and times.
- give sufficient thinking time.
- rotate speakers to avoid those hiding.
- flush out students’ answers.

CHECK FOR UNDERSTANDING

Of all teaching techniques, this is probably the one teachers most agree on and also one they judge they do frequently and well.

A superficial adoption of this method, however, will rely on assuming the the class has understood because the regularly compliant students answer correctly. To avoid this shortcoming:

- sample answers from all students, especially the least involved, over time.
- follow up students’ answers with more questions on their methods.
- involve students in each others’ answers by inviting their responses.
- provide some cognitive conflict by comparing different answers.
- insist on more elaborate answers in the students’ own words.
- link your questioning techniques into sequenced clusters — such as with those below.
- assess your teaching and its progress by the answers you receive.

SHOW-ME BOARDS

This is perfect for teachers to receive rapid feedback on their teaching. Make it routine and slick. Look for common misconceptions.

SAFETY AGAIN, BETTER

This is a way to stop students offering the minimum in their answers. Acknowledge responses and then ask for more.

PROBING QUESTIONS

The epitome of the best teaching involves extensive interactions with students, developing ever more depth in their answers.

PROCESS QUESTIONS

If you want students to answer questions such as *“how did you work it out?”*, you need to model your own metacognitive talk.