Questioning Toolkit

'Teasing out students' thinking skills and understanding, is far more important, than moving onto the next stage of any lesson'

Visible Learning for Teachers, J Hattie

Groby's Learning Definition

"Acquiring new skills, knowledge and understanding, then applying them in progressive and creative ways."

At Groby Community College questioning is an essential part of the teaching experience. Questioning is at the heart of learning. Questions need to be thought about, planned for and should stimulate students thinking. Questions are two way and in the best lessons students will demonstrate a thirst for knowledge and therefore ask frequent questions through-out the lesson. Questions should challenge and scaffold students' understanding in lessons.

Which questioning strategy?
(Geoff Petty – Evidence Based Teaching)

How do questions promote learning?

- Good questions stimulate thinking, and often generate more questions to clarify understanding.
- Good questions generate informative responses often revealing not only misconceptions and misunderstanding, but understanding and experience beyond that expected.
- Good questions encourage learners to make links.
- Good questions push learners to the limit of their understanding.
- Good questions from students push teachers to the limits of their understanding too, and challenge them to find better ways of explaining.
- Good questions offer opportunities for learners to hear others' answers to questions, it helps them to reflect on their own understanding.

1. Question & answer – Volunteers answers

Low 'participation' rate because students learn that if they keep their hands down they will not be asked to contribute

2. Question & Answers – Nominees answer

Students nominated by the teacher to answer the question. This is often referred to as 'pose, pause, pounce, bounce' strategy. The teacher poses the question, 'pauses' for the students to think, and then pounces on the individual to answer the question

3a. Assertive Questioning - Buzz Groups volunteers answer

Students work in small groups or pairs to answer a thought provoking or to do a task. The teacher asks the group in turn to deliver part of the answer, for example: 'can you please give me one advantage of….' Can this group please give me another? A volunteer answers for the group. They are called 'Buzz Groups' because of the buzz of conversation created while they work

3b. Buzz Groups – Nominee answers

As above but the teacher nominates the students in the group who will contribute that group's answer and justify or explain it. The teacher asks for the answer after the class discussion. All students are keen to get involved as they may be asked to contribute the group's answer.

The aim of 'buzz groups' is to get all students involved in the discussion, justify and evaluate their answers as a group. The teacher will only provide the 'correct' answer after all the discussion.

4. Pair Checking

The teacher asks the question, and the students work alone to answer it. Pairs then compare their answers and each individual says something positive about their peers answer and one thing to improve it. The teacher now provides the correct answer. Teacher listens to some students conversations through-out and offering guidance where needed.

5. Student demonstrationStudent Demonstration.MOV

Excellent technique to ensure students develop understanding of a skill such as a mathematics problem solving. This technique is commonly used in Eastern European countries and Singapore, which routinely achieve top ranking achievements in Maths, Science and language learning.

The process:

- o Teacher sets the task
- o Students work on the task individually or in pairs
- o Teacher monitors the work and offer guidance where required
  During this stage you secretly identify some students with good answers and some with weaker answers
- o Teacher chooses students to demonstrate their answer to the rest of the class
- o The student gives their answer on the board – students explain each step on how they achieved the answer. Teacher and other students ask questions to clarify the answer, but do not yet evaluate the answer
- o Teacher asks for a class answer – do students agree with the answer the demonstrating students have provided? Teacher asks the class: How can it be improved? Students who demonstrated the answer become the class scribe writing on the board any changes to the answer. Teacher facilitates still not providing the answer.
- o You comment on the class answer – Praise students and confirm correct answer(s)

Student demonstration is not enough by itself, students will need to do some individual work now to practice the skill.

Pose, Pause, Bounce and Pounce!PPPB.MOV

How does it work?

I have listed the four-part approach below with additional information that I hope explains the method.

1. POSE

• Give the context of your approach to the class.

• Insist on hands down before the question is delivered.

• Provide a question or a series of questions, ensuring that you ask the students to remain reflective.

2. PAUSE...

This is the hard part.

• Ask the class to hold the thought; ... think; ... think again...

• If students are captivated and engaged, try holding the silence for a little while longer and...

• Push the boundaries. Keep the reflection for as long as possible.

3. BOUNCE(!)

• Insist the answer to the question comes from student A and possibly student B, directly and fast!

• Of course plan in your mind who you are going to ask, before speaking to the class.

• Name student A to respond

• Possibly don't speak and nip any comments, grunts or noises in the bud! Its magic when you can hear, see and feel a captivated learning audience. We've all seen it.

• Wait for an answer... pause... decipher the support needed if no response is evidently on its way. (Of course, at this stage, you can instigate various strategies for peers to support the questionable student A).

• If student A does manage to answer

4. POUNCE!

• Ask another student B (immediately) after the BOUNCE response, their opinion of student A's answer.

• This can be developed by asking student B and C their opinions to student A's response, irrespective if the answer is correct or not.

• An additional strategy is to bounce the question to a group A...and subsequently, a sub-group B if group A do not deliver a suitable way forward.

• This ensures the teacher is engaging a significant number of students with the question at hand, whilst using this strategy, it also ensures the entire class can be called upon at any given time by just returning to phase 1 or phase 3.

'Hinge" questions.

- A hinge question is based on the important concept in a lesson that is critical for students to understand before you move on in the lesson.
- The question should fall about midway during the lesson.
- Every student must respond to the question within two minutes.
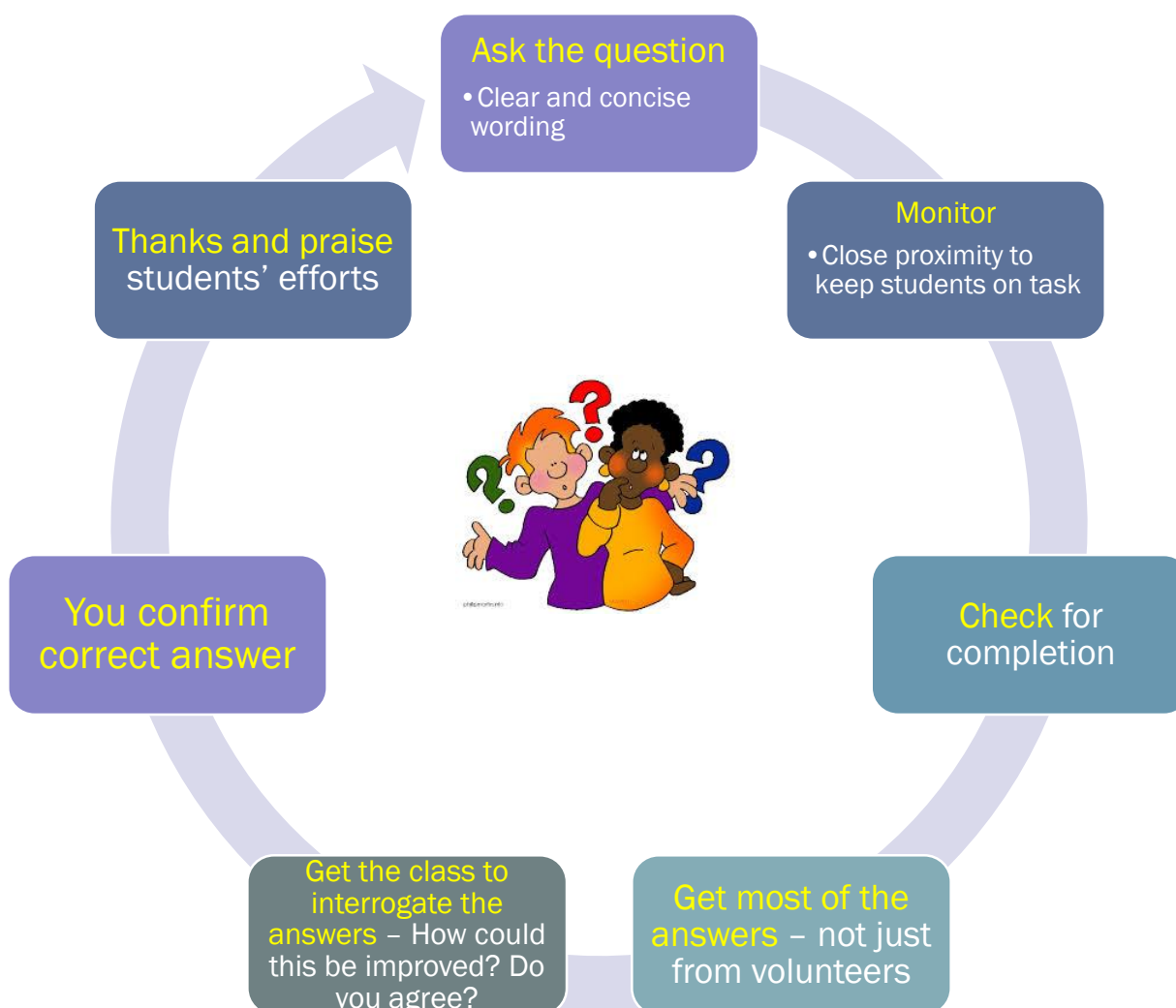- You must be able to collect and interpret the responses from all students in 30 seconds

Dilemmas and discussion

Asking questions which stimulate discussion are a great way to promote learning.
They lead students to express their thinking, reveal their understanding and to reflect and compare their thinking with others.
They also enable learning and progress to be demonstrated explicitly, as shown in this comment from a recent inspection report.

Assertive Questioning

Ask the question
• Clear and concise wording

Monitor
• Close proximity to keep students on task

Check for completion

Get most of the answers – not just from volunteers

Get the class to interrogate the answers – How could this be improved? Do you agree?

You confirm correct answer

Thanks and praise students' efforts

With Assertive Questioning:

- All students are thinking – "the teacher might choose me".
- All students are talking and checking each other's thinking – they need to agree an answer with its reasoning. Group members will be cross if one of their number misrepresents their group's answer to the class. So peer-pressure increases participation.
- You get detailed and representative feedback on all the class's thinking, and can eventually correct misconceptions before they take root.
- There is lots of thinking time.
- Students are usually very comfortable to give answers, as they are answering for their group not as an individual.

You get the best representative feedback on understanding if you ask supplementary questions like

'Why did your group think that?'
'Did any other groups get that answer?'…'Why?'
'Has anyone got a different answer?' ….'Why?

Participation Rate

High if at any given time a high proportion of students are engaged in trying to answer the question for themselves.

Student Feedback

Students should receive feedback on the quality of their answer. Ideally this is in discussion with their peer and then the teacher

Teacher Feedback

Contributions from most students is required. If you discover that not all students are getting the correct answers you can do something about this. If your classroom is very active and interactive you can discover misconceptions very quickly and put them right before they prevent students from keeping up. ***Hattie has shown that this is of paramount importance. Teacher's feedback is the highest quality when there is dialogue between the teacher and the class.***

Thinking time

Students should be given thinking time to reflect on the answer to a question. This will ensure that students use their constructs, establish links between them, and improve where necessary. It is central to the learning process as constructivism shows, yet Rowe found that the average time between a teacher asking a question and a student answering it was 0.7 seconds! A lower ability student would be still working out the question when they hear the answer. We need to consider this as we may disadvantage our lower ability students.

The Self Correcting Classroom

For your classroom to be self-correcting you need a very high participation rate with student feedback and then a very high quality teacher feedback. Good quality remedial action should take place when misconceptions do happen. High quality dialogue (peer/peer, teacher/student/teacher/class) checking that misunderstandings have been fixed before proceeding. A self-correcting classroom ensures that all students learn, and that when one gets 'lost' something is done to get them back on track.

Some useful responses to students answers to increase student participation:

- ✓ Wait! Students will often say more if you remain silent but interested
- ✓ 'thanks, can you explain why you think that?'
- ✓ 'Can that be right, Ben? Why?'
- ✓ 'Anyone agree/disagree? Why?
- ✓ Cognitive conflict e.g. 'but if you are right, and the light energy alone builds plants, then the biggest plants would all be in the desert!'