

# Questioning

Alternative headings

Assessment for Learning (AfL)

Deeper understanding

## Introduction

Effective questioning techniques will be examined in this section under two headings: (1) questioning to check understanding, part of the AfL agenda and (2) questioning to deepen and consolidate understanding.

## 1. Questioning to check understanding (AfL)

### Key issues

- **Participation**

All teachers use questioning to check understanding, and for this to be effective they need widespread participation from learners. A feature of outstanding lessons is the learners' high level of participation. This will be evident when the teacher is questioning the class, when the students are invited to ask questions and when the learners are invited to offer ideas or thoughts on the topic being studied. On the other hand, less successful lessons are characterised by low levels of participation in both thinking and speaking. In such classes, the majority of learners are reluctant to either answer or ask questions and contribute to discussion only when the teacher directs a question at them by name. In such situations, questioning to check understanding is fraught with difficulties. How many learners have responded? What are the silent ones thinking? Is it safe to move on with the lesson when only a few learners have revealed their understanding?

- **Teachers' response to questioning**

If questioning is to be used by teachers to check understanding, they must be prepared to adapt their teaching in the light of the responses they get from learners. If questioning reveals a widespread lack of understanding, a rethink of the lesson plan is essential with a period of revision being one of the options. If, on the other hand, questioning reveals a degree of mastery from the majority of students, then the lesson plan needs to be adapted to introduce a greater level of challenge. When questioning reveals a mixed response, with a mixture of *mastery*, *basic understanding* and *confusion*, then more complex solutions are called for – see the section on differentiation for ideas on this.

- **Hands-up or no hands-up**

Teachers the world over will debate the issue of who answers questions – ‘volunteers’ or ‘conscripts’? Strong views are expressed by some on this subject, but professional educators will make their own decisions and it may be that the answer is ‘it depends...’ There is no doubt that some learners in some classes get frustrated if they are denied the opportunity of giving the teacher an answer. However, there are learners, either because of shyness or mental truancy, who never want to answer questions and are relieved if the hands-up brigade are allowed to dominate questioning sessions. A ‘mixed economy’ is, of course, an option, and I am sure there are many teachers who use a wide variety of techniques rather than being philosophically rooted to a single strategy. Some of these options are explored in the menu that follows.

## E1 Pre- and post-testing

This technique involves a teacher using a test at the beginning of a topic to assess the degree of prior learning and another at intervals or the end to demonstrate progress.

This technique is particularly useful at the beginning of a course or on transfer between phases or classes, when the teacher does not have trustworthy data on the levels of prior learning in the class. At its simplest, the early test provides feedback to the teacher, allowing the teaching programme to be planned to meet the identified needs. Further tests can be used at intervals in order to check understanding and also to provide positive feedback to learners on the progress they are making or to alert the teacher if such progress is not evident.

## E2 Start from the familiar

Participation levels will be enhanced if teachers start with the familiar – questions that most learners can access and respond to, ensuring a few moments of success for all.

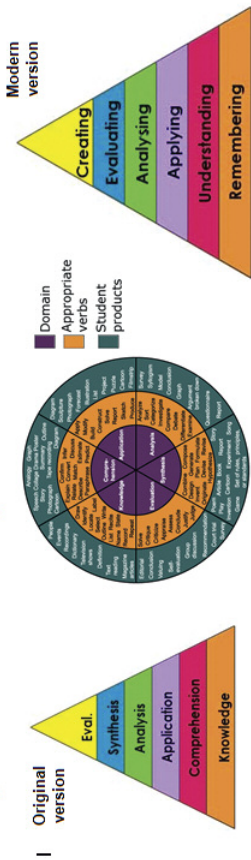
If teachers ask really challenging questions in the first few minutes of a questioning session, the majority of learners are likely to freeze with anxiety. It will be very hard to recover from this and the likelihood is that only a few students will participate with any enthusiasm. When the early questions are familiar, however, there is widespread success and opportunities for praise. This breeds confidence, allowing teachers to increase the level of challenge, with learners more likely to participate.

## E3 Questions based on Bloom's taxonomy

Bloom's taxonomy is a useful starting point for questions designed to check understanding. The hierarchy of questions can be displayed as a classroom aid.

The display of Bloom's taxonomy can help teachers and learners. Not only do the verbs help teachers to formulate AfL questions, they provide stimulus for learners once teachers make use of questions generated by students in peer questioning.

Learning based on Bloom's Taxonomy - used for outcomes and in AFL



<b>Remembering:</b> can the student recall or remember the information?	define, duplicate, list, memorise, recall, repeat, reproduce state
<b>Understanding:</b> can the student explain ideas or concepts?	classify, describe, discuss, explain, identify, locate, recognise, report, select, translate, paraphrase
<b>Applying:</b> can the student use the information in a new way?	choose, demonstrate, dramatise, employ, illustrate, interpret, operate, schedule, sketch, solve, use, write.
<b>Analysing:</b> can the student distinguish between the different parts?	appraise, compare, contrast, criticise, differentiate, discriminate, distinguish, examine, experiment, question, test.
<b>Evaluating:</b> can the student justify a stand or decision?	appraise, argue, defend, judge, select, support, value, evaluate
<b>Creating:</b> can the student create new product or point of view?	assemble, construct, create, design, develop, formulate, write.

Early questions such as 'list' can quickly be developed into 'describe' and escalated into 'criticise' and 'distinguish'. Higher-level questioning is examined in the second half of this section.

**E4 Show-me boards**

Wider participation in answering questions is achieved if teachers ask learners to record their answers on show-me boards, which they display simultaneously.

When teachers want to check levels of understanding, some will use a 'hands-up' approach with volunteers, some will select the

learners they want to answer, and some will use a randomised system of nomination. In a large class, only five or six learners may be questioned and the use of show-me boards for some types of questioning will provide 100% participation; and if the boards are all displayed at the same moment, the level of understanding across the class is much easier to assess.

## **E5 Randomised questioning**

The teacher uses a randomising system to decide which student will answer each question. Some teachers use lollipop sticks while others prefer electronic systems.

Rather than ask for 'hands-up', teachers can randomise which learner answers. Some teachers list all the class names on an individual lollipop stick in a jar. The question is asked, 20 seconds of thinking time is given, and then the teacher takes a stick from the jar with the name of the learner who must answer. (Do not take out the stick before asking the question – if you do, only one person will then think over the question!) The lollipop system has its problems (e.g. storing lots of jars when the teacher has 10 different classes), so teachers may prefer to use an electronic system. Randomising can be achieved in PowerPoint. Simply create a slide and insert a photograph that links to the theme of the lesson. Copy the slide to match the number of learners in the class (e.g. 30.).

Now add a text box to each page and type in the name of each learner, one per page. In PowerPoint now select the transition between slides and set it to 0.00 seconds. In the Slide Show option, select 'loop continuously'. You are ready to use randomisation. Click on the 'S' key on your keyboard and the slides loop at a very fast pace. Press 'S' again and the slides stop at a name. This learner must answer. When you are ready, press 'S' again and repeat each time you want a new name on the screen. Another 'fruit machine' electronic version of randomised names can be found free of charge at [www.classtools.net](http://www.classtools.net).

## E6 Support Groups

Wide participation can be achieved through small groups where individuals think of their answers before ‘pooling’ them to the Scribe who lists their answers and records names.

Support groups are described in more detail in section (F) on differentiation, and the role of the Scribe and the recording method are explained in A5. When teachers use this technique, more learners are involved and even the shy or reticent have an opportunity for their answers to be listed. The teacher will ask the Scribe in each group to provide an answer, checking how many other groups had the same one. Teachers can, if they wish, say ‘great answer; who suggested it?’

## E7 Electronic response systems

Electronic response systems allow teachers to get 100% response from learners. Some provide named responses and instant analysis to show the levels of understanding.

A range of learner response systems are available and some have moved beyond the ‘clicker’ mentality, where all questions were multiple choice and users simply clicked a number or letter to record their answer or opinion. The most sophisticated technology is Promethean’s *ActivExpression*, which allows learners to respond in a variety of ways.

A range of multiple-choice options are provided but learners can also respond with text, number, true/false or rank in order. Instant analysis is provided with output to Excel. Teachers who use such technology get instant feedback on levels of understanding, allowing them to modify lessons in line with the assessment information. *ActivExpression* also provides a ‘live’ feedback option, which will be explained in the section on Assessment for Learning (G15).

Smart’s *Quizdom* performs all the functions above apart from the live feedback option. Both systems will work in any classroom, regardless of the type of interactive whiteboard being used. It is also possible, but currently more challenging to implement, for electronic responses to be made from personal devices including mobile phones. There is no doubt that this facility will become easier to establish in the near future.

## 2. Questioning to deepen and consolidate understanding

### Key issues

- Most teachers at some point will want to move beyond a simple check on understanding into deeper learning and consolidation, and questioning is one of the techniques that will do this. While a quick check on understanding might be accomplished in a few minutes, deeper questioning requires more time and greater involvement of the learners and as such might be used as one of the major activities of a lesson.
- Some of the techniques that follow will make use of groups and the choice over what type of group (e.g. focus group, ability group, Jigsaw group) will depend upon the purpose of the activity. Deeper questioning can be used earlier in a unit of work to deepen understanding or towards the end to deepen and consolidate understanding. When teachers use groups for questioning, as in some of the examples in the menu that follows, it pays to have invested some time in training learners for their role in group activity, issues which were examined in Section A on classroom organisation.
- Most questioning in classrooms is dominated by teachers' questions. Teachers who invite learners to ask the questions, and have practised this process with them, often find that the questions are more challenging than the questions they would have asked themselves. Techniques for this are included below.



## E8 Questions based on Bloom's Taxonomy

The higher levels of Bloom's will be used to deepen understanding, with verbs such as *compare*, *evaluate*, *formulate*, *defend* and *construct* at the heart of the questioning.

Learning based on Bloom's Taxonomy - used for outcomes and in AFL



<b>Remembering:</b> can the student recall or remember the information?	define, duplicate, list, memorise, recall, repeat, reproduce state
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## E9 Pose, pause, bounce, pounce

This technique involves teachers bouncing answers from one learner to the next, increasing the challenge each time; no *hands-up* – the teacher selects the learners who will respond.

Dylan Wiliam refers to this technique and highlights its benefits. First, the teacher must pause after asking a question. Too many teachers, he claims, worried at a lack of response, jump in too early after asking a question without giving sufficient thinking and reflection time.

Second, the teacher selects who answers (Student A) and that learner's response is bounced to another student (Student B), pounced on by the teacher who throws an additional prompt such as '*give me an example of what (student A) means by...*'. This technique depends upon deeper questioning and all learners must concentrate hard because no one knows who will have to respond next.

**E10 Answer and pass**

In this activity the teacher selects the learner who must respond and then selects another to follow up the previous answer with *'I agree/disagree with that answer because...'*

This technique also demands a high level of concentration because each learner chosen (and the random methods can be used here) must make some kind of comment on the previous learner's response before offering their own answer or thoughts. Teachers might like to display a poster with appropriate connectives, like in the example below, to support learners in the process.

I agree with G... because...

I do not agree with G... because...

P... 's idea is great and I would like to add the fact that...

While S... makes a good point about ..., there is another issue that needs to be examined...

D... suggests that..... I support that but think you also have to consider...

F... makes a valid point, but where is the evidence for...

**E11 Discussion questions**

In this activity, teachers post a key question and invite groups of students to agree one positive response, one negative response and one question that needs to be addressed.

This is rather like the Cort Thinking PMI activity, *Plus, Minus and Interesting*. So, for example, the question *'Would a move to Chinese-style education improve learning outcomes?'* is posted on the wall. (The teacher might have produced a handout or shown a video with information on this topic.) Small groups are now asked to produce one positive response and one negative response, both with reasons, and one 'interesting' question that needs to be answered before a final answer is agreed. The groups report back and their questions are allocated to other groups to consider. This process allows even shy learners to share their opinions and to ask and answer deep questions.

## E12 Question prompts for peer questioning

Using Bloom's taxonomy, teachers can improve the level of peer questioning by displaying question prompts on posters.

When teachers want to use peer questioning, they may find learners opting for low-level, closed questions. In order to encourage higher-level questioning, teachers might find it useful, certainly in the early stages, to display question prompts on posters as in the example below.



Prompts posters can be very useful in most areas of the curriculum and with most age groups. They are very useful in numeracy and mathematics with questions such as *What happens if we ...? What is the same or different? Can you see a pattern? What do think comes next? How can this pattern help you? Why did you use that method? How else could it be done?*

Teachers of modern foreign languages will also find a prompts poster displaying a range of language structures will stimulate learners to make use of higher-order questions – *justifying*, *expressing opinions* and *evaluating* as well as encouraging learners to use a range of tenses – *will*, *have*, *could*, *might*, and so on. Poster prompts are also vital when teachers want learners to undertake *self-evaluation* and reflect upon their own work or performance. The use of poster prompts for this agenda will be examined later in the section on feedback.

### E13 Peer questioning with scores

When peer questions are generated, teachers can place them on post-it notes on a pin board or poster and ask learners to select a question to answer.

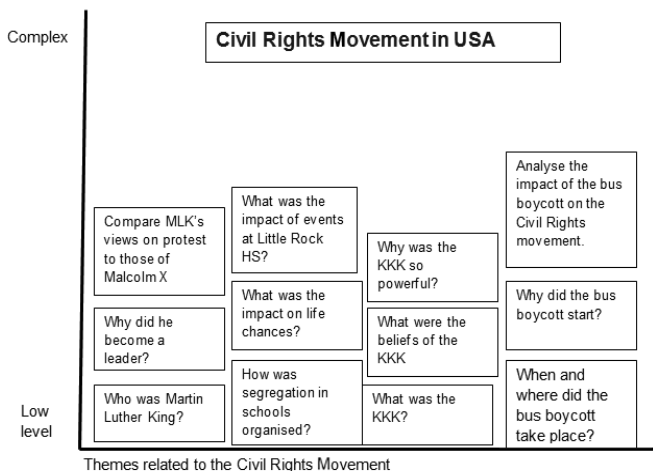
If teachers want to increase the challenge, they can score each question that is created by the learners (e.g. 1–6), with the higher-order ones gaining more points. Learners then choose, or are prompted or directed by the teacher to choose, questions that will move them on from whatever their starting points are. In revision activities, teachers can even make it more fun by selecting appropriate pairs of learners and asking them to challenge each other. If one of the pair selects a 4-point question and answers it correctly, she/he scores 4 points. If it is not correct, the challenger who set the question scores 4.

### E14 Graphing peer questions

The process of peer questioning with increasing levels of challenge works well if the teacher places the questions produced by learners on a graph with the most challenging at the top.

This activity is a variation on the scoring technique (E13). Learners will give their questions to the teacher who will place them on the graph by theme (as in the example on Civil Rights below) with the most challenging questions towards the top. Learners then choose or are directed to other learners' questions. Teachers will find that many learners want to have a go at the more complex questions. This can also be conducted using Jigsaw groups (A8) where individuals from the group each take responsibility for one of the questions in the theme they are allocated.

The placing of questions on a whiteboard is made easier if teachers have access to the *Magic Whiteboard* sheets that simply stick to flat surfaces like cling film. They can be wiped for using time and again, and are available in various sizes from flipchart size to A5. They are available from: [www.magicwhiteboard.co.uk](http://www.magicwhiteboard.co.uk) or Rymans' stationery stores.



## E15 Peer questioning in Question Time

This is a consolidation activity at the end of a topic when one small group is given the role of 'experts' or the Question Time panel, and other groups prepare questions for them.

This activity rarely fails to motivate learners. The rules are quite clear. The experts spend a short time (e.g. 10 minutes) revising the topic and agreeing who will answer what type of question (they must all take it in turns to answer). The other groups spend the time preparing questions, and in preparing questions they must also prepare answers – they are not allowed to ask questions unless they can answer themselves. The teacher will circulate checking this. When teachers use Question Time they nearly always find the questioning groups will try to create the hardest questions possible; they go for the jugular! If used in conjunction with a questions poster (E12), they will almost certainly opt for the higher-order questions.

The key point of this activity is that the students who learn the most from this process are those who asked the questions. Most teachers who dominate questioning are missing a trick; creating good questions along with the answers is a brilliant learning activity.

**E16 Pass the Question**

Here, individual learners prepare a question at the top of a folded page with the answer below. The teacher then tears off the question part and allocates it to another learner.

The clear benefit of Pass the Question is differentiation. Once teachers approve the learners' questions and answers, they tear off the top of the page and allocate the question to another learner, taking into account the difficulty level. The more challenging questions go to the most confident, the less challenging to those finding it difficult. The learners who set the question then mark the answers once their peer partners have completed them. Once again, learners strive to make their questions as difficult as possible.