Effective questioning workbook:

Questioning to promote learning

Contents

Introduction

This workbook offers you:

- an extended version of the online Effective questioning toolkit
- a downloadable resource that you can use to supplement the on-screen guidance notes
- a record of your professional development that can form part of your continuing professional development (CPD) portfolio. You will find it helpful to keep a note of the time you spend trying out new ideas and reflecting on your experiences.

The workbook is a tool for experiment and reflective practice. If you are:

- working independently, the workbook can guide and support you as you develop your questioning strategies
- a Subject Learning Coach (SLC), you may find the workbook useful during peer coaching
- planning CPD sessions for staff, you can adapt the workbook ideas for group activities.

Use the workbook to:

- assess the effectiveness of your habitual ways of asking questions
- build on your successful habits and develop new ones
- plan experiments in using different strategies for asking questions
- record the outcomes and reflect on what you will do differently next time.

Getting support from colleagues

You can work through the materials on your own, but you are likely to find it more enjoyable and challenging if you seek the support and involvement of colleagues. Here are some suggestions of what you might do.

- If you are trying out something new, start with one group. Ask a colleague to observe you and to write down the questions you ask and the responses you get. Use the colleague as a sounding board for your ideas.
- Invite colleagues in your curriculum area to work through the toolkit with you and to try out new ideas at the same time as you do. Arrange meetings to review what you each have done and to plan how you will each do in the future.
- Use the workbook with your SLC. Commit to experimenting with new strategies and techniques and use the SLC to help you reflect on the outcomes.

Theory into practice

To get the most out of using the workbook, select a session that you will be teaching in the next one or two weeks. It should be one that builds on one or more previous sessions. You will be using this session as the context for the activities in this workbook.

Make a note of your experiments and reflect on their outcomes where you see the heading **Your record**.

Section 1: Getting started

Why ask questions?
How can asking questions of learners help them to learn?

Activity

Use this activity to start thinking about how you currently use questions to help learners learn. You can do this activity by yourself, but it will be more interesting and insightful if you can find a colleague to do it with you at the same time.

Step 1: Ask yourself (and your colleague) the question 'How can asking questions of learners help them to learn?'

Individually, record below as many ways as you can think of. Take no more than five minutes to do this.

Ways in which asking questions of learners can help them to learn:

Step 2: Compare your answers with those of your colleague and discuss what you have written.

Step 3: Compare your joint answers with the suggestions given on the next page.

Some suggestions

Questioning can help learners to learn by:

- prompting them to recall what they have learned and experienced previously
- engaging their interest
- challenging them to think independently
- encouraging them to explore consequences
- stimulating their ability to think creatively
- deepening and broadening their thinking, moving from concrete and factual to more analytical and evaluative
- helping them to make their own assessments and evaluations of what they have said or done
- raising their awareness of learning as a process
- helping them to make connections between different aspects of their knowledge and experience
- generating hypotheses
- bringing their attention back to the task
- encouraging them to take responsibility for their own learning.

Step 4: From the list of suggestions and additional ideas that you and your colleague have thought of, select three ways of using questions that you either do not yet use, or else use very rarely. Plan and implement an experiment in trying something new. Make a note of your plans below.

Your record
Three new reasons for asking questions:

What you will experiment with:

Step 5: When you have tried out your plan, reflect on the outcomes. Note them below in your record. Discuss them with your colleague or Subject Learning Coach. Plan what you will do differently next time, try it out and then reflect further.

Your record
What did you learn from your experiment?

Section 2: What to ask questions about

Checking what learners know

Teachers often ask questions to check:

- the facts and information learners already know
- what learners have remembered from a previous session
- what they have learned during a session.

Bear in mind, though, that checking information gives you just one perspective on what they have learned. They may be able to quote facts, formulas or rules but not know how to work with or apply them. You will need to ask different sorts of questions to delve more deeply into how learners are thinking.

Make notes below in relation to the session that you identified on page 3.

What knowledge and understanding do learners need to have retained about the topic from previous sessions?

How will you find out what learners have retained?

How will you use this information to shape the session?

How will you find out what learners have learned in the course of the session?

Suggestions

Ask questions that encourage learners to show how much they understand rather than merely quoting facts or giving yes or no answers.

Involve the whole class. (See **Section 4: How to ask questions**). Give learners time to reflect.

At the end of the session, ask learners to write down one new insight that they have got from the session.

Your record
What questions did you actually use?

How did learners respond?

What did you do with their responses?

Assessment for learning: finding out what and how learners are thinking

Learners do not present themselves at your sessions as a blank canvas. When you introduce a new subject, they may already have some ideas about it. Their ideas may be sketchy and inaccurate but they will be making interpretations, assumptions and suppositions based on the pieces of information that they have picked up from various sources over time.

It is your job to ask questions that help you find out from learners:

- what they know
- what they think they know

- how they are seeing things
- what they are confused about.

Questions like these underpin assessment for learning. The information that you pick up will enable you to adapt your session to the needs that emerge.

Some examples of questions that can work well in this context are:

- What do you know about…?
- How do you think this works?
- Why do you think that happened?
- What might happen if…?

The information you elicit by asking questions like these will shape what you do next.

Such questions also help the learners by making their thought processes explicit and raising their awareness of the gaps in their knowledge. This has the effect of priming them to explore a new topic. It helps them to make connections between their existing way of thinking and the new knowledge and understanding that you want them to acquire.

Suggestion

Asking effective questions is an important assessment for learning strategy. But there are many other ways to find out what and how learners are thinking. Find out more about assessment for learning strategies in the pedagogy **Quick start guide** (link).

How can you build assessment for learning into your session?

You will already have prepared questions that help you check what learners have learned from a previous session or during your session. Seeking this information at the beginning of a session helps you adapt what you had planned to do. Collecting it at the end helps you plan the next session.

You can now build in further responsiveness to learners' needs by planning how to find out how learners are thinking during your session. One of the most effective ways of doing this is to set up a small-group activity that involves 'learning by doing' and then to eavesdrop on the learners' discussions. Based on what you hear, you can ask questions that:

- prompt them to think more deeply
- guide their thinking in different directions
- encourage them to articulate their thoughts
- help them generate hypotheses.

Suitable questions do not necessarily spring to mind just when you need them, so it can be helpful to think about them in advance. Make notes in the box below in relation to the

session you identified on page 4. Then experiment with your suggestions and record your reflections of the outcomes in your record.

At what part of the session are you most likely to need to find out how learners are thinking?

What questions might you ask? (Please write down the actual words you intend using.)

Your record: Reflections on assessment for learning

What questions did you ask? (Please write down the actual words you used.)

How did learners respond?

What did you make of their responses?

Drawing on personal and interpersonal experiences

Learning is enriched when learners relate a new topic to what they already know. Their personal life experiences can provide a useful starting point for new learning. The more they make connections between what they know about and do outside the classroom and

what you want to teach them in your sessions, the more easily they will assimilate new topics.

Example

A teacher wanted to explore the topic of turning forces. Before he explained the theory, he asked his class to identify examples of turning forces in their everyday experience. This helped to set a context for the session.

What personal experiences might learners have that are relevant to the topic of your chosen session? How will you use them?

Learning is a social experience, too. So the next time learners work in pairs, small groups, project teams or the whole class, debrief the learners by asking them to reflect on their experiences of learning. As well as reflecting on the content of the activity, ask them questions such as:

- What did you do to make sure that everyone in the group had a chance to speak?
- How did you feel when you were doing the presentation to the whole group?
- What helped you work together?
- What will you do differently next time you have to work together?

Your record

After you next debrief a group using questions like the ones above, note here what happened.

What comments did learners make?

What did their comments reveal about their awareness of their learning processes in the activity?

How will you use the information to build learners' ability to learn?

Promoting the development of practical skills

Imagine that you are learning to play golf for the first time. Your coach might ask questions like 'What was going on in your head when you were preparing your shot? Where was your attention when you struck the ball? How did your body feel when you began the swing?' The aim of such questions would be to make you aware of crucial aspects of your performance so that you can monitor yourself and develop your skills independently of the coach.

You have a similar role to play for your learners. You can help them develop their practical skills by asking them to reflect on what they are doing and the effect it has on their ability to learn or to complete a task.

For example, you might ask questions like:

- What did you do to get to this point in the task?
- What happened when you…?
- How could you do this more accurately or quickly?
- What tips would you give someone else who is learning to do this task?

Asking the questions like these encourages learners to think for themselves, to make their own independent judgements and to understand the consequences. It puts you in the role of a facilitator of learning rather than an adjudicator and director. This approach can be more effective than simply giving them instructions or telling them where they have done something right or wrong.

What practical skills are you promoting in your chosen session? (If the session does not include a practical skill, choose another session that does.)

What questions will you ask that will encourage learners to monitor and assess their own progress?

Your record

How easy was it for you ask questions instead of giving your own feedback?

What will you do more of or less of in future practical sessions?

Encouraging reflection on the learning process

As a teacher, your role is not just to help learners acquire the knowledge and skills and understanding required by the curriculum in their vocational area. It is also about helping them become expert learners. One aspect of this is to encourage them to reflect on the process of learning.

You could do this by spending a few minutes at the end of an activity and asking questions such as:

- What happened in your groups that helped you learn?
- What got in the way of your learning?
- If you were to do that activity again, what would you do the same and what would you change?

Where will you next use questions like these to debrief an activity?

Section 3: When to ask questions

This section puts a different perspective on some of the points already covered.

At the start of a session and/or introducing a new topic

- Check that learners have done the required preparation.
- Check retention and understanding of material from earlier sessions.
- Stimulate learners to generate hypotheses by asking them questions like 'what do you think would happen if…?'
- Engage learners' attention by inviting them to share some experiences relevant to the topic you want to teach them.
- Help learners to make connections between what they already know and what you want to teach them. For example, discussing learners' existing knowledge about car crashes and how seat belts protect against injury could be a starting point for talking about linear momentum.

During a session or activity

- Walk around the class, eavesdropping on what learners are doing.
- Silently assess for your own purposes whether they are productively engaged in the task you have set them.
- Where you see that they are on top of their task, ask them to tell you how they got there, and then ask some more probing questions to help them think more deeply about what they are doing or have done.
- Where you see that they are struggling, ask some questions to help them establish their starting point, to check the assumptions they are making and to help them make connections.

Note that this strategy does not involve you in telling learners what they are doing right nor where they are going wrong. Your role is to stimulate their thinking so that where possible, they explore options and find things out for themselves.

At the end of a session or an activity

An activity does not finish until you and your learners have had a debrief. Your questions should be designed to help learners:

- clarify, make sense of and reinforce their understanding of the content of the activity
- reflect on their experience of the activity and the process of learning that they were engaged in.

To debrief the learners on the content, ask questions such as:

- What surprised you about what you have just learned?
- What do you know now that you didn't know before?

- Can you write on your mini whiteboard one example of what you have learned from the session?

To help learners reflect on the process of learning, ask questions such as:

- What were the benefits and drawbacks of working in the group format chosen?
- What did you do in your groups that helped you learn?
- What got in the way of your learning?
- If you were to do that activity again, what would you do the same and what would you do differently?
- Where else could you use the skills that you have used in your groups?

Activity

Invite a colleague to observe your session and to:

- note the questions you ask (recording your words as accurately as possible)
- note the context in which you asked the questions
- briefly record the learners' responses
- discuss with you afterwards the effect of the questions.

Your record

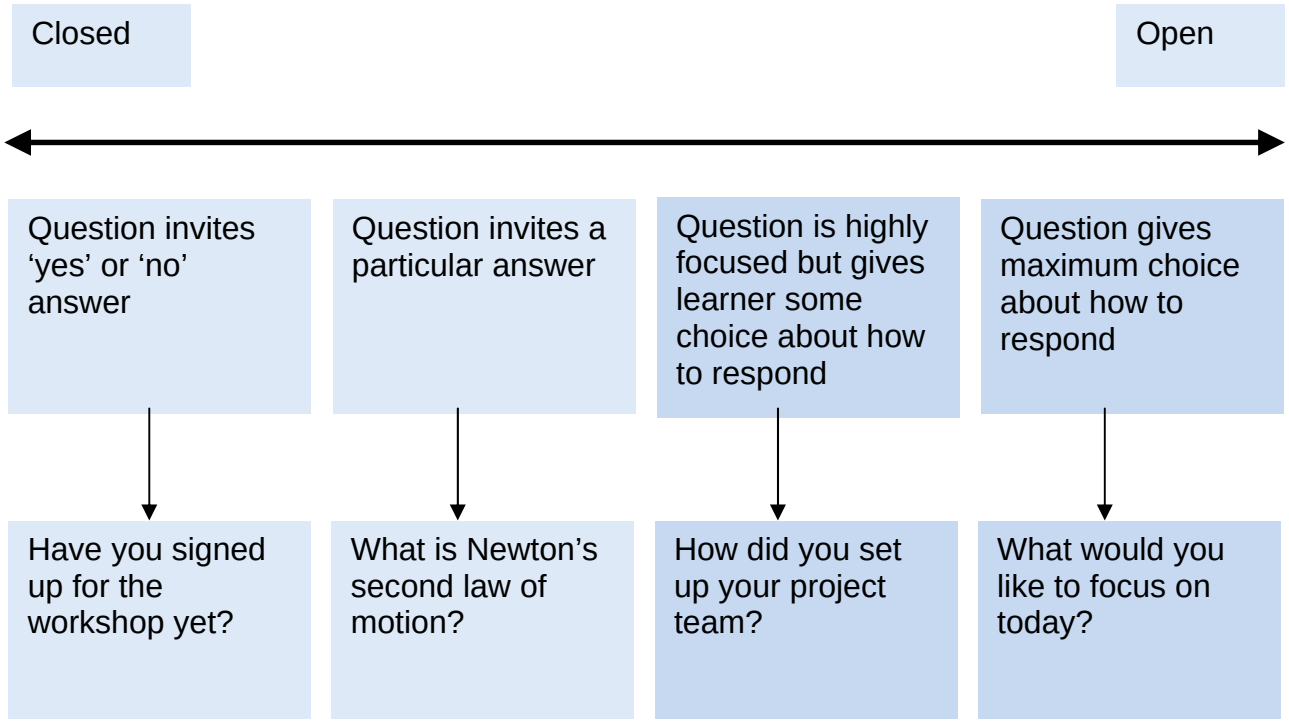
Reflect on your discussion with your colleague and note here what you will do differently in the future.

Section 4: How to ask questions

Open and closed questions

Questions are often described as either open or closed. But this 'either/or' approach is not always helpful because definitions vary and questions do not necessarily fit neatly into either category.

You may find it more useful to think of questions as being somewhere along a continuum according to the response they are likely to elicit. Your choice depends on the purpose of your question.



To practise the development of open questioning skills look at the **Learner activity: using open and closed questions** in the online version of the Effective questioning toolkit.

Having a clear purpose

a) Developing cognitive skills

It goes without saying that you want to use questions to make learners think more broadly and deeply. What does this mean in practice?

A useful starting point is Bloom's Taxonomy of Educational Objectives, published in 1956, in which he described among other things different levels of thinking. He arranged these levels into a hierarchy ranging from 'Knowledge' at the lowest level to 'Synthesis' and 'Evaluation' at the highest levels.

He worked on the principle that learning can be organised in a way that takes learners systematically up the hierarchy.

Using Bloom's Taxonomy to promote deeper learning

Knowledge If you want to find out how well learners can recall information, you could ask questions like:	How many…? Can you name the…? Describe what happened at… Is it true that…? Make a list of… What is the function of that component? Give a definition of…
Comprehension If you want to know how well learners understand things, you could ask questions like:	How would you describe it in your own words? Why do you think it happened like that? What are the differences between…? Can you give me an example of what you mean…? What do you think will happen if you…? How does X compare with Y?
Application If you want to find out how well learners can use their knowledge in different contexts, you could ask questions like:	How would you solve this problem with the knowledge you have? How would you apply that knowledge in this situation? Do you know another instance where…? From the information given, can you develop a set of instructions about…? How would this information be useful if you had a…?
Analysis When you want learners to be able to see underlying principles and the relationships between different aspects of a concept or topic, you could ask questions like:	Which events could have happened when…? Why did these changes occur? What will happen if you change this part of the process? Can you explain what must have happened when…? How is X similar to Y? What are some of the problems of…? Can you distinguish between…? What is the problem with…?
Synthesis	Can you design an X to Y? Can you see a possible solution to…? What would be your way of dealing with…? What would happen if…? How many ways can you…? Can you create new and unusual uses for…? Can you develop a proposal that would…?
Evaluation	Is there a better solution to…? How would you judge the value of…? How would you justify your decision to…? How could you have done that more efficiently? What changes to X would you suggest? How would you feel if…? How effective are…? What do you think about…?

Note: if you are planning CPD sessions for a group of staff around the themes of questioning for learning and Bloom's Taxonomy, look at **CPD activity 6: Questioning for learning** in the Engineering resource for the National Teaching and Learning Change Programme. You will find it at:
http://teachingandlearning.qia.org.uk/#engin_change_CDresources

b) Attitudes to learning

The purpose of questions is not limited to helping learners to think more deeply and carefully. You will also want to develop an attitude to learning that embraces experimentation, creativity and curiosity. Questions in the upper part of Bloom's taxonomy are more likely to support this.

If we use questioning to shape and reflect on learning, we can avoid a 'talking shop' or show-and-tell.

The **learning conversation** is a problem-solving opportunity where participants commit to finding a solution together. By using open questions to structure learning conversations we can avoid a situation where the discussion becomes all talk and no action.

Find out more about **learning conversations** and how to use them to promote positive attitudes to learning in the online pedagogy **Quick start guide**

Activity

You will already have been experimenting with asking questions at different stages of your session and with different purposes in mind.

For the next activity, you will need some of these questions to work on. If a colleague observed one of your sessions and wrote down the questions you asked, use that information as your starting point. If not, draw on your memory of a recent session.

Write down some of the questions you asked and then assign them to one of the categories in Bloom's Taxonomy.

In which category do you most frequently ask questions?

What could you do to encompass more levels in the hierarchy?

Your record

Note here:

a) **how your learners respond to questions that challenge them to think**
b) **what you might need to do differently to help them engage with such questions.**

Sequences of questions

Effective questioning is more than asking a question and getting an answer. A strategy that can often be effective is to follow one question with another and then another. This sends a very strong message to learners that they have to do the thinking rather than relying on you to tell them whether their answers were what you had in mind.

Look at the question sequence patterns in Figure 1.

Think about a sequence of questions you have used recently. Which of these patterns was it closest to?

Think of a session you are planning. Which pattern of questioning will best meet the learning objectives?

Figure 1 Sequences of questions

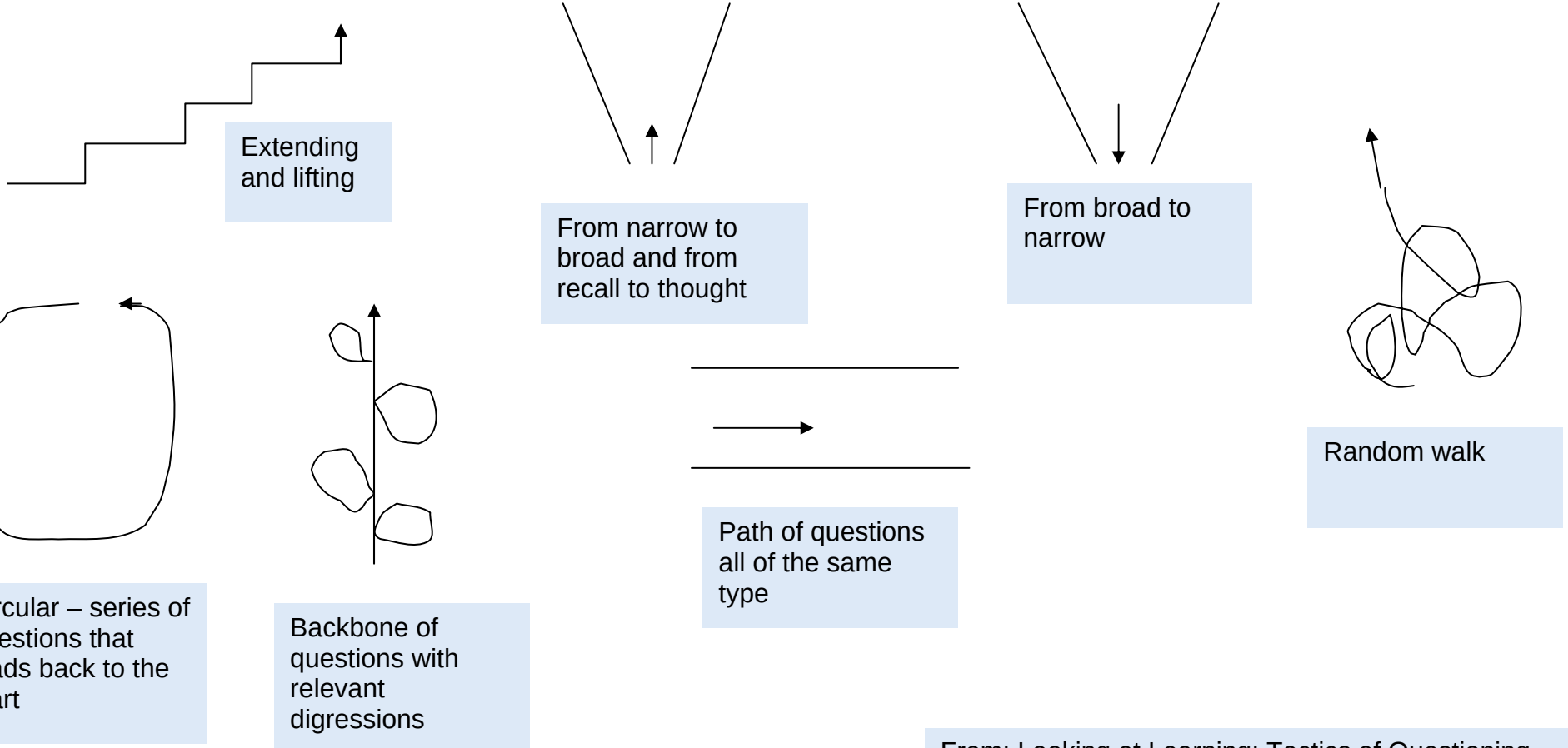


Figure 1: Sequences of questions

From: Looking at Learning: Tactics of Questioning (2003) CD-ROM, EBS Trust on behalf of the Teacher Training Agency

‘No hands’

Pause a moment and reflect on how you put your questions and deal with the answers. Perhaps the most common strategy that teachers use is to:

- pose the question
- invite an answer from a named learner or a volunteer
- give feedback on the answer in terms of whether it is right or wrong or needing more clarity or detail.

But this approach has limitations. It means that:

- the majority of learners give little thought to the question
- thinking time is generally short
- learners come to rely on the teacher to evaluate their answers instead of thinking for themselves.

A powerful alternative is to:

- ask the question
- wait a while to allow everyone to think about the answer
- invite one learner to give their response and receive it with a non-evaluative ‘Thank you’
- repeat this several more times so that many learners contribute their thoughts.

This is a ‘no hands’ strategy because you are not inviting learners to volunteer to answer. Instead, the whole class is involved because they will come to expect you to invite many of them to give an answer.

Keep them thinking

Your next step is to ask another thought-provoking question. What you ask will depend on the answers you have already elicited.

For example, if the majority of learners give you the answer you were expected, you might say:

- Why would that be the correct answer?
- How did you arrive at that answer?

If you get a range of answers, you might ask “How can we find out which is the best answer?”

By adopting this strategy, you will be encouraging learners to analyse and evaluate their own thinking.

Experiment with these ideas and make notes below on what happens.

Your record

How did learners respond to the 'no hands' approach?

What will help you to make it an integral feature of your classroom practice?

Next steps

By working through the suggestions in this workbook, you will have experimented with some new ideas and reflected on the outcomes.

But it takes time to consolidate new habits take time to consolidate, so take things further by:

- asking a colleague to revisit one of your sessions and help you monitor your use of questions
- discuss with your SLC the reflections you have recorded in your record
- discuss with your SLC the possibility of arranging one or more group CPD sessions in which you can further develop your skills in asking questions that help learners learn.

References

Bloom, B. S. (1956) *Taxonomy of Educational Objectives. Handbook 1: Cognitive Domain.* Longman

Looking at Learning: Tactics of Questioning (2003) CD-ROM, EBS Trust no behalf of the Teacher Training Agency

Resources that explore questioning strategies

DfES (2006) *Speaking and Listening Skills. A support pack for staff working with offenders.* Ref: S&L/PACK01

DfES *(2004) Pedagogy and Practice: Teaching and Learning in Secondary Schools. Unit 7: Questioning www.standards.dfes.gov.uk/secondary/keystage3/all/respub/sec_pptl0*

Gold Dust resources: *Questioning techniques*
www.goldust.org.uk/questioning/questioning.html

Key Skills Support Programme (2007) *Teaching speaking and listening: a toolkit for practitioners.*
National Teaching and Learning Change Programme. Improving learning in mathematics. CD ROM 2 Exploring the approaches: Thinking about learning – thinking about discussion
http://teachingandlearning.qia.org.uk/#math_learning_CDexploring2

National Teaching and Learning Change Programme. Improving differentiation in business education. CD ROM 1: Questioning techniques
http://teachingandlearning.qia.org.uk/#bus_different_CDcpd

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http://teachingandlearning.qia.org.uk/#engin_change_CDresources

