Developing curious minds

Steve Williams suggests strategies for enabling students to ask good questions

Behind every piece of knowledge lies a question. So it should follow that, if we teach learners to ask good questions, the effects should be profound. You can't analyse, enquire and evaluate – all 'thinking skills' mentioned in the National Curriculum guidance document – without being able to frame appropriate questions. So questions are undoubtedly powerful tools for learning and we would expect questioning to be practised in schools that take thinking and learning seriously. Questions also create energy; it is almost impossible not to try to answer a question once it has been asked. And, of course, to ask 'what …if' questions is a basic creative act. Questioning depends on dispositions that are essential for learning:

- *Ignorance*. I am in a state of not-knowing, and I realise that I do not know.
- *Perplexity*. I am experiencing perplexity (puzzlement, uncertainty, and so on) as a consequence of not knowing.
- *Need*. I feel a necessity to know.
- *Belief*. I commit myself to the truth of the question (I believe its presuppositions are true, its words are as I intend them, and so forth.)
- *Faith*. I am confident that the unknown is knowable.
- *Courage*. I venture to face the unknown and its consequences both within myself and the world.
- *Will*. I resolve to undertake to know.

(From J. T. Dillon, *Student Questions and Individual learning*, Educational Theory 36: 333–41)

Why then don't pupil's continue to develop their questioning powers and dispositions as they grow older? One reason is that the dispositions pupils require for questioning become more difficult to sustain in school environments dominated by national tests and peer cultures wherein learning is seen as 'uncool'. Another is that pupils have not been sufficiently encouraged to question, their questioning skills have not been systematically developed and they don't see the benefits of persistent questioning. What, then, can we do to encourage student questions. J.T. Dillon, a world authority on the subject suggests the following basic strategies:

- Stop asking so many questions yourself
- Invite pupils' questions in spoken and written form. Collect, discuss and analyse pupils' questions
- Encourage pupils to question other pupils during discussion
- Welcome questions when they come
- Build lessons around pupils' questions

However, to take pupil's questions seriously we need to loosen our grip on presenting content in pre-packaged chunks that leave little room for 'big questions' from pupils. This is not to say that some kinds of useful questioning cannot flourish within a rigidly organised curriculum. It is just that following through one's own questions, after realising their implications, is an experience that is very motivating and intellectually enriching. I offer the following ideas for building on Dillon's suggestions:

Introduce the concept of 'a question'. This is an activity for young children. Collect or make up a set of questions and statements. Make the questions appear in different ways – not just starting with standard words like 'why' and 'how'. Read out the questions and get pupils to do a particular action when they hear a question (like standing up). Older

children could sort written questions and non-questions into piles. Talk about what is common to all questions.

Discuss 'kinds of questions'. Ask pupils to sort a set of questions under headings of their own making. See what kinds of headings they come up with and discuss those with the class. Regularly talk with children in order to pay attention to different kinds of questions.

Discuss 'kinds of answers'. Ask pupils to thing about the ways they go about answering different kinds of questions. This will give them some ideas about different kinds of enquiry. Often it is necessary to use a variety of methods *eg* 'remember what you can, then create a new question to find out the rest' or 'make little questions from the big one'. Some strategies for answering are given in Figure 1.

Make books and wall displays. Have children keep question journals. Collect pupil's questions. Make books of pupil's questions. You might group questions in sections of a book. Pupils could keep notebooks to write down questions as they occur to them. Draw attention to the presuppositions in questions. Ask pupils to create question chains – linked sets of questions that seem to suggest each other or depend on each other.

Write a story about a question-answer. I think it would be interesting to follow up a question and write a story about it. Pupils could start with something like: 'One day I was wondering ... I decided to try and find an answer ... I though about it and figured out ... I asked by mother and she said ... I thought ... I decided to look in some books and I found out ... What I didn't find out was ... *and so on*. How would such a story end? Children would have to really do some of the things in the story to find out.

Enlist the help of parents. Publish a list of questions raised by the class in a letter to parents. Ask parents to talk to their children and help them to think about a question, answer it or write a question-answer story.

Here is the answer what is the question? Provide a list of answers and ask the pupils to think of the different questions that might have prompted each answer.

Base a lesson or part of it around children's questions about a topic. At any stage of a topic it is appropriate to stop and ask pupils what questions they have. Plan part of a lesson around those questions. Refer back to discussions on types of questions and answers.

Use guided imagery to prompt pupil's questions. Ask pupils to close their eyes and create a scenario appropriate to the topic you are introducing. For example: 'You are walking through a field looking and you notice flowers of all different kinds and colours …' Stop at various points and ask the children to think of a question. With very young children, be prepared for some questions like: 'where is my mummy.' This task could help to prepare pupils to ask questions about their reading. Reading could be part of a guided scenario: 'You are reading about…'

Try out a classroom community of enquiry. This phrase comes from Philosophy for Children and describes a regular group discussion around questions pupils have created after sharing a book, poem, work of art or other stimulus. This anchors the whole questioning experience. Many schools have found it to be the best thing they ever tried for stimulating questioning (see *www.sapere.net*).

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Figure 1

Answering strategies	Explanations and examples
Remember	There are some questions you can answer straight away if you have learnt about the topic before. *What is the capitol of France?*
Ask someone	You might need someone else to remember it for you or to explain it to you if it is complicated. *Why do we have gravity on earth but not in space?*
Read, listen and watch	Use books, the internet, the radio and TV to find out. *Why was Stonehenge built?*
Guess and check	Try an experiment or explore some alternatives. *Does white paint dry quicker than black paint? Are there better words I could use for my poem?*
Observe	Sometimes you can find out just by concentrating on something. *How many legs has a spider? Who is the tallest person in the class?*
Figure it out	Work out what you don't know from what you do know. *Who is the tallest person in the whole school?*
Create an analogy	It sometimes helps to think of something in terms of something else. *How do our bodies work? Do they work like machines?*
Be the judge	You have to come to your own judgement. *Who is the best footballer? Is it always wrong to lie?*