

Questioning

Did you know?

- ◆ Teachers ask up to two questions every minute, up to 400 in a day, around 70,000 a year, or two to three million in the course of a career
- ◆ Questioning accounts for up to a third of all teaching time, second only to the time devoted to explanation
- ◆ Most questions are answered in less than a second. That's the average time teachers allow between posing a question and accepting an answer, throwing it to someone else, or answering it themselves
- ◆ Research has found, however, that increasing the wait time improves the number and quality of the responses - three seconds for a lower-order question and more than 10 seconds for a higher-order question

If you've been teaching for around 14-and-a-half years, you could be about to ask your one millionth question. Teachers ask up to two questions every minute, up to 400 in a day, around 70,000 a year, or two to three million over the course of a career. Clearly, questioning is an integral part of the teaching process. But if you're going to be asking three million questions, it's probably worth making sure you ask the right ones in the right way. What can you do to improve your questioning technique? How can you present yourself as a mentor coaxing out answers, not an interrogator seeing who cracks first? And how can you get children to ask questions of you, so learning becomes an interactive dialogue, rather than an uninterrupted diatribe?

Why do teachers ask so many questions?

When Socrates defined teaching as "the art of asking questions", he had in mind the cut and thrust of lofty philosophical debate. The prosaic truth of the modern-day classroom is rather different. Four hundred questions a day may seem a startling statistic, but a large proportion of these (anything between 30 and 60 per cent) are procedural rather than learning-based. In other words, they tend to be of the is-your-name-on-it? or have-you-finished-yet? variety.

But questioning is still a key means of knowledge transfer. It accounts for up to a third of all teaching time, second only to the time devoted to explanation. And many experts believe it should be even more prominent.

"Good learning starts with questions, not answers," says Guy Claxton, professor of learning

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science at Bristol University. The consensus is that questioning leads to more effective learning - and more enjoyable teaching - than explanation alone.

Questions serve many purposes. They can help pupils to reflect on information and commit it to memory. They can develop thinking skills, encourage discussion and stimulate new ideas. Questions allow teachers to determine how much a class understands and enable them to pitch lessons at an appropriate level. They are an important tool for managing the classroom, helping to draw individuals into the lesson and keeping them interested and alert. And questions have a symbolic value - sending a clear message that pupils are expected to be active participants in the learning process.

What is a question?

Learning to recognise various types of question - and the functions they serve - is one of the keys to effective questioning. Different experts categorise questions in different ways. Ted Wragg, professor of education at Exeter University, offers a model comprising three groups: empirical (requiring answers based on facts); conceptual (concerned with definitions and reasoning); and value questions (investigating personal beliefs and moral issues). The Department for Education and Skills talks of product questions (which work towards an answer), and process questions (which focus on the method or reasoning). Others use Bloom's Taxonomy of Learning, Teaching and Assessing (see resources) as a model - where questions are pigeon-holed in six categories according to whether they test knowledge, comprehension, analysis, application, synthesis or evaluation.

But the simplest and most important distinction, recognised by all experts, is between lower-order questions, which require children to remember, and higher-order questions, which require them to think. As a general rule, lower-order or factual recall questions tend to be closed, with a single right answer, and are likely to be what, who, when or where. Higher-order are more likely to start with how, why or which, and tend to be open - with a range of possible responses.

Which questions should I be asking?

No one type is intrinsically better than another. Lower-order questions, for example, have an important part to play in checking knowledge. But most research suggests teachers ask too many of these basic recall questions and not enough thought-provoking, higher-order questions.

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A 1989 study of secondary school lessons by Lincoln University's Professor Trevor Kerry found that only 4 per cent of questions were of a higher-order nature. Ten years ago, Ted Wragg's extensive research in primary schools produced similar results - only 8 per cent of questions were of a higher-order nature. "Because teachers ask so many questions each day, it's easy for one style of questioning to become habitual," he says. "And lower-order questions feel safest because they keep the lesson moving."

Not that an emphasis on factual recollection is anything new - studies in 1912, 1935 and 1970 also showed that at least 60 per cent of teachers'

questions simply required pupils to recall information in the form in which it was presented. "This kind of questioning isn't teaching at all," argues Sue Jennings, head of initial teacher training at Exeter University. "You don't develop any thought processes - all you do is make those who don't know the answer feel like failures."

A report by US educationist Kathleen Cotton in 1988, which examined 37 research projects to do with questioning across the United States, came to two important conclusions. First, that at all ages, a combination of higher-order and lower-order questions was the most effective method. And second, that with pupils of top primary or secondary school age, increasing the proportion of higher-order questions to around 50 per cent brought significant gains in terms of student attitude and performance.

Your time starts now. . .

Life after death? The chicken or the egg? The sound of one hand clapping? Some questions preoccupy philosophers for a lifetime or span centuries of civilisation. Most questions asked in the classroom are answered in less than a second. That's the average time teachers allow between posing a question and accepting an answer, throwing the question to someone else or even answering it themselves. Weaker pupils are often given even less time - usually because the teacher is afraid of embarrassing them, or lacks confidence in their coming up with the right answer.

But another US study, conducted in New York in 1978 by Mary Budd Rowe, found that increasing the wait time improved the number and quality of the responses. For a lower-order recall question, three seconds was found to be the optimum wait time, while wait times of more than 10 seconds produced even better results with higher-order questions. The same research also found that extending the wait time between the pupil giving the answer and the teacher commenting on it (typically fractions of a second) allows pupils to revise or expand their response, and encourages other pupils to contribute.

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"It's such a simple idea," says Bob Marshall of training company Smarter Learning. "But the impact is remarkable. Having the self-discipline to keep quiet for a moment is sometimes all you need to do to get children thinking." He suggests relaxing the rapid-response questioning of the classroom by sometimes posing a question at the end of each lesson which pupils can ponder over for discussion the following day.

To question or not to question Not everyone believes questioning is the best way of teaching. Research by Julie Ann Anderson at Sheffield Hallam University in 2000 revealed that primary school children often find questioning in class to be stressful and a cause of anxiety. Part of the problem is that questions aren't just a learning tool. As MPs, barristers, policemen and journalists all know, they can be used to manipulate or accuse. Lower-order questions, in particular, are often closely linked to behaviour management, with teachers using them as a means of control in the classroom.

It's a common tactic to fire off questions like disciplinary bullets at children who aren't paying attention - and it can be tempting to ask ones they won't be able to answer, just to prove their whispered conversation at the back of the classroom really is a barrier to learning.

Even when questions aren't being used as part of a power struggle, pupils can still find interrogation intimidating. For example, research by Ian Mitchell in Melbourne, Australia, shows that children's main fear is not of being wrong, but of looking silly - saying something that will be ridiculed by the teacher or other pupils. Such "peer fear" is the main obstacle to children answering and asking questions. Just asking easier questions to weaker pupils in the hope they'll get something right doesn't seem to be the answer, as they increase the fear of being wrong. Mitchell's work suggests children are most happy to venture their opinions when they believe no one else in the class knows the answers.

Effective questioning - who to ask ?

There's always going to be someone who doesn't want to be a millionaire and is happy being the weakest link. Falling into the habit of asking only those pupils who are going to know the answer is a good way of ensuring a quick-moving lesson, but a poor way of developing thinking skills. Getting your questions to produce some kind of response in every pupil - even if it is a covert response that is never voiced aloud - is the knack to clever questioning. A hands-up approach where children volunteer answers can lead to a few pupils dominating the lesson. Putting a question to the whole class, then asking an individual to respond - the nattily named "pose, pause and pounce" technique - allows you to target questions at specific children, but research suggests the lesson is still likely to centre around six to eight main contributors, who are usually in the teacher's immediate line of vision.

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Some teachers overcome this by keeping records of who was asked a question in each lesson to make sure no one gets left out, but Sue Jennings argues that it's better to move away altogether from the idea of targeting individuals. "In European countries such as France, where there is a tradition of philosophical inquiry and social learning, the class work together to tease out the answers to challenging questions. You don't provide an answer, you simply make a contribution. It makes for some superb lessons."

Creating a comfortable environment where being right doesn't always matter will help ensure that it isn't always the quickest and most confident pupils who make those contributions. And whatever line of questioning you choose, be prepared to do some analysis of how you work. The questioning process is largely instinctive - with only a split second's thought before deciding what to ask, who to ask, and how to ask it - so, videoing your own lessons may be the only way to study the type of questioning that takes place and to establish what's working and what isn't.

Getting children to ask questions At the age of five, children ask dozens of questions a day - many of them higher-order questions starting with "why". But they don't ask questions in school.

Ted Wragg's 1993 research found that an average of just one spontaneous question each lesson came from the pupils, and that was more likely to do with procedure than with learning. Effective questioning isn't a one-way process. If the teacher asks the kind of questions that stimulate thought and debate, there's a strong chance their pupils will also start to ask more.

"Asking good questions is the basis for becoming a successful learner," says Guy Claxton. "If children aren't asking questions, they're being spoon-fed. That might be effective in terms of getting results, but it won't turn out curious, flexible learners suited to the 21st century."

There are plenty of strategies for encouraging children to ask more questions. Holding back on a new topic until the class has worked out what questions they would like answered in the course of the following lessons can get the curiosity juices flowing. And asking pupils to set tests at the end of a topic for other children in the class - awarding marks for the quality of the questions rather than the quality of the answers - can get them used to the varied forms of possible questions.

They need to know that questions aren't as scary as they might seem - using search engines on the internet to pose inquiries, working in small groups or making a question wall where students and teachers can pin up questions they would like answering, can all help overcome the natural fear of being caught out not knowing.

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Above all, questions should be seen to be important. Finishing a lesson on the stroke of the bell with the familiar call of "Any questions?" (which, of course, really means "There aren't any questions, are there?") sends out the message that questions are a nuisance. It's worth making room with designated question time lessons, or asking children to come back next lesson with a question to ask. This will make it clear that they are encouraged and valued.

It ain't what you ask, it's the way that you ask it. . .

One of the main reasons children fail to respond is a failure to understand the question itself. "It's perfectly possible to ask a good question in a baffling way," says Ted Wragg. He emphasises the importance of pitching questions in a manner the whole class finds easy to understand so as to involve as many children as possible.

Presenting them as part of a sequence which makes them seem clearly and logically connected has also been shown to improve the quality of responses. "It's surprising how few questions are asked as part of a thought-out series," he says.

While it isn't realistic to plan every one, it may be worth having one or two key questions, perhaps written on the board, around which each lesson can be structured.

And it's not just a matter of what you ask, or how - but also of when you ask it. Kathleen Cotton's American research notes that lower ability and younger children respond more effectively to questions presented after they have been given the opportunity to look at material. With higher ability children it's the other way round - asking questions before they have seen the material allows them to examine it with particular inquiries in mind, and elicits better responses.

Having the answers How you deal with replies might shape a whole lesson. Showing interest in the reply yourself - not just moving on or correcting the answer - and getting other children to show an interest may well slow down, or even hijack, the best-planned lesson, but it's important to be prepared to digress. Good replies will always raise further questions.

"Of course, there's the constraint of the curriculum," admits Guy Claxton, "but teachers have to find time to explore the questions they are asked and the answers they are given. If children believe the teacher isn't interested in what they have to say, they will stop saying anything at all."

Additional research: Tracey Thomas

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