TYPES OF QUESTION

In the most general sense, there are two major types of question that you can ask in your classroom – these are closed questions and open questions.

Closed questions are the simplest and most frequently asked, so let's consider them first. What are they and how do they differ from open questions?

Another name for closed questions is memory questions. This is because they require that students simply draw upon their memory when they answer them. More complex thinking skills are not usually required. They are not the most effective tools for helping students develop their thinking skills, but they definitely deserve to be a part of an instructor's teaching strategy.

Closed questions are those that make use of verbs such as recall, label, identify, state, and list to mention just a few. There are many more. Notice that these verbs all have something in common. They're asking for the same sort of response on the part of the student, that is direct recall from memory.

For example, you might ask a student, "Can you recall the three most populous countries in the world?" Now we assume the student has been told or has been given materials that reveal the answer to him.

"Let's see, I think they're China, India, and, ah, what is that third one?"

Here's another one. "Will you please label the main parts of the heart?" We assume that the student has seen a drawing like this before with everything labeled.

"Can you identify three of the states along the Atlantic coast?" Now granted, the student must be able to discern which is the Atlantic coast, but again, we assume he has seen a map of the states previously, with both the states and the oceans labeled.

Here's a fourth example of a closed question. "John, can you state one reason why radiation can be dangerous?" We assume that John has been told or given the information that he needs to answer this question rather than having to deduce the answer using less obvious sources like graphs, tables, and the like. If that were the case, the question would be too complex to be closed.

Here's one final example. "Brad, will you please list the names of five Presidents of the United States?" Now, we assume that Brad has seen a list of names from which he has been asked to mention five. All he has to do is draw upon his memory to create the list.

Of course, it's possible that some of these verbs might sometimes be used in questions that draw upon more than just memory. For example, you could ask, "Will you please state why you think that global warming is not a serious environmental problem?" That's

more than a closed question. It requires that the student do some critical thinking and draw a conclusion. We'll be referring to those kinds of question shortly.

During this program, you're going to have to respond to some questions yourself.

Which of the following is not a closed question?

A. Will you please list three species of maple trees?

B. Why don't you believe that this defendant is guilty?

C. Which word in this sentence ends with a vowel?

D. How many continents are on Earth?

The best answer is B. A person trying to answer question B has to draw upon much more than memory. Thinking skills such as evaluation, comparison, and analysis are likely to be needed. So, since more than memory and recall are required, this is not a closed question. The others are.

Some people may argue that response C involves a little more than just memory since the words have to be studied to some degree, but it's really just a closed question with a little more effort thrown in.

Closed questions are used often because they are simple to create and are the easiest for students to understand. They're useful during quick reviews, lesson summaries, short quizzes, and other similar activities. They are undoubtedly the type of question that is most commonly asked. However, if your teaching strategy includes only closed questions, you will not be nearly as effective as you could be. You should also make good use of more complex questions.

Let's move on now to consider the nature of open questions.

Answering open questions requires more than simply recalling information and details that are stuffed into our memory. Here the flow diagram is going to split again, because there are two principal categories of open question. These are comprehension and application questions. Let's discuss comprehension questions first.

As the name implies, the purpose of comprehension questions is to determine how well a student understands a concept or process. It's been said that the best way to discover how well you understand something is to try to teach it to someone else. In essence, that's just what a student is doing when she tries to answer a comprehension question.

She is, in a sense, teaching the instructor or the other students in the class. But before we examine some examples, we need to subdivide this category into four subgroups.

There are four types of comprehension question. These include comparisons, extrapolations, translations, and interpretations.

We'll begin with the simplest of the four – comparisons.

In a comparison, a student is asked to compare and/or contrast two of more things. These things may be concepts, ideas, conclusions, data sets, strategies, and so on.

Which of the following is most probably a comparison question?

A. How can one distinguish between alligators and crocodiles?

B. Can you describe three characteristics of eagles?

C. Why is zero-based budgeting a good idea?

D. Does the better seasonal homerun record belong to Babe Ruth or Roger Maris?

The best answer is A. It requires direct comparing and contrasting of two animals. Answer D may look good to some of you. Although it may involve some comparing and contrasting, it also requires that the student form an opinion.
These two players didn't play seasons of equal length. Therefore, it's more complex than a comparison question.

The second category of comprehension questions is extrapolation. Math, science and accounting teachers, as well as others, are probably quite familiar with this term. An extrapolation requires that you take information that you've discovered or been given and expand upon it using some assumptions.

Here's an example.

If the birth rate doubles over the next ten years and the death rate falls by 50%, how will the population be different in ten years?

This question requires that you make some assumptions about the future based on what you know about the present and past. For example, when examining a graph of

the data, your extrapolation may be viewed as a line that appears to extend off the graph beyond the axes unless, of course, you create a larger graph.

Here's another question for you.

Which of the following is most probably an extrapolation question?

A. A new disease was found to infect twice as many people this year as last. How long will it take to become an epidemic?

B. The average American life span is 77.4 years this year. What will it be ten years from now?

C. Mary makes $35,000/yr plus a 1% bonus, while John earns $30,000/yr plus a 2% bonus. Who earns more per year, and how much will each of them make during their lifetime?

D. A company increases its revenue by 10% per year. How long will it take to double its revenue?

The best answer is D. The question provides the student with enough information to make a projection, that is an extrapolation, in time. The inference is that the company will grow at 10% a year for whatever amount of time is required to double its revenues.

Question C sounds like an extrapolation is involved, but it does not provide enough information for the student to answer it. The same is true for question B. Question C is a comparison.

The next subgroup under comprehension is translation questions. These require that students explain in their own words a concept that they have been taught or have studied.

Here's an example.

"Paul, will you please explain to the class why the sun appears to rise in the east and set in the west?"

This question is based upon information that Paul has either received in class or has been assigned to read or research. All he's expected to do in answering is to explain the phenomenon to others in his own words.

Now it's your turn again.

Which of the following is most probably a translation question?

A. How does atomic fission differ from nuclear fusion?

B. Will you please explain how a nuclear chain reaction takes place?

C. Country YZ is increasing its mining of uranium ore every year. Here are the data. Can you predict when production will reach 8000 metric tons per year?

D. What is the name of the specific isotope mentioned in the workbook that undergoes fission?

The best answer is B. It requires that a student explain a concept that he has already been taught. Question A is a comparison. C requires an extrapolation of the data to make a prediction. Question D is a simple closed question.

Finally, let's consider one last category of comprehension questions – interpretations.

To answer interpretation questions, students must explain abstract concepts. They differ from translations in that the student forms an opinion and/or draws a conclusion.

Here's an example of an interpretation question.

"Can you explain how percent retention changed from the 1st quarter through the 4th quarter according to this graph?"

If a student can interpret an abstract concept and justify his opinion or conclusion, that is good evidence of comprehension. In the example shown here, the student is asked to draw a conclusion. We could expand the question to include an opinion by asking, "Do you think the current trend in retention should be a concern?"

Now, which of these is most probably an interpretation question?

A. What has the average annual unemployment rate been during the past 50 years?

B. Why is 4% unemployment considered a good goal by the government?

C. How does a slow economy affect the unemployment rates of professional men versus professional women?

D. Should the government supply long-term funding to assist people who are unemployed?

The best answer is D. D is an interpretation question because it requires that a student form an opinion, and based on that, draw a conclusion. Answer A is a closed question, B is a translation, and C is a comparison.

So, what distinguishes translation questions from interpretation questions? Let's review this distinction.

In response to a translation question, the student simply rewords an explanation that he has already heard into a form that is in his own words. An interpretation requires that the student perform some sort of analysis resulting in an opinion or a conclusion.

Let's move on now to the other category of open questions. It's known as application. These are questions that measure a student's ability to resolve real-life issues and problems. Answering application questions involves the use of rules, principles, and skills.

Here's an example.

Someone accidentally loses a file on her hard drive. She has done two standard searches that have come up empty. How would you help this person?

Let's take a moment to compare and contrast comprehension and application questions.

They are both categories of open questions. That is, they ask for more than just a simple recall of information. However, while the purpose of comprehension questions is to determine the extent to which a student understands a concept or a process, the purpose of application questions is to determine how well a student can apply what she knows to real-life issues and problems.

Which of the following is most probably an application question?

A. How would you determine whether a patient is suffering from hypotension or hypertension?

B. A sick baby has an abnormally yellow color in her eyes and skin. What immediate course of action would you take?

C. If an elderly patient complains about dizziness and has unequally dilated pupils, what problem does this suggest?

D. An accident victim has type "A" blood and needs a transfusion. Can he safely accept type "O" blood?

The best answer is B, which requires the application of information because it involves a real-life problem.

Response C involves a hypothetical situation and asks for a conclusion. That makes it more of an interpretation, so it is a comprehension question.

Response A is a comparison, which is type of comprehension question.

Response D is a simple closed question since it merely requires the recall of information.

There is a third but minor class known as procedural questions. These relate to how the class is being conducted. Therefore, they are non-instructional questions. While they are not a major concern in this program, they do deserve mention because they are often misused.

Here you see a few examples of procedural questions. Notice that they ask about classroom procedures rather than the content of instruction.

"Have you all found the correct page in the textbook?"
"Is everyone ready to move on to the next question?"
"Would anyone like to try the next problem?"

So, how might they be misused?

Here's a very good and very common example.

A question such as, "Does everyone understand?" may sound like it is related to instruction, but it is a procedural question. The instructor who asks it is trying to determine whether or not his teaching procedure has been effective. If not, he may repeat or alter his lesson. However, you should form and phrase your procedural questions in a way that will protect the self-esteem of your students. Seldom will students respond honestly to a question like this if they don't understand something. You are asking them to reveal before the whole class that they have a problem. It's a threat to their self-esteem, and they may not be sure that you want them to answer it anyway.

Instead of asking if everyone understands, you could instead ask, "Okay, now you probably have some questions about what I've explained. Who would like to ask the first one?"

If you really want to know how well your students understand something, ask them some closed and open questions, especially comprehension questions.

Here is another example of a commonly asked procedural question,

"Does anyone have a question?"

It's often more than a little threatening to some students. It would be better to ask, "O.K., I'd like to answer some of your questions at this point. May I have the first one, please?"

The phrasing of the second example is much less threatening.

Let's see if you can pick from this group the procedural question that is phrased best.

A. O.K., who was not able to complete the assignment?

B. O.K., how many of you could have used more time to complete the assignment?

C. How many of you failed to complete what I asked you to do?

D. Your time is up. Will you please raise your hand if you did not finish?

Choice B is the best one because it is the least threatening. The other three imply that the students disappointed you.

Choice B focuses on the time element rather than on the students' performance.

The important thing to notice here is that you're going to receive the same information either way, so why not do it in a way that will get you the most reliable responses?