3. Asking High-Order Questions

In the first two sections of this resource, we looked at who you ask questions of and looked at some of the techniques for how you ask those questions. In this section we will concentrate on what is asked in your class discussions.

Many schools have looked at the difference between closed questions and open questions.

Closed questions are those that typically have a single direct response and many of them can be answered with a simple ‘yes’ or ‘no’.

Open questions “will solicit additional information from the inquirer. By definition, they are broad and require more than one or two word responses.” (Dr. John V. Richardson Jr. See link below)

http://polaris.gseis.ucla.edu/richardson/dis220/openclosed.htm

However in many ways what is interesting is not so much whether questions are open or closed, but rather whether they ask students for complex inferential thinking or whether they concentrate on just the literal aspects of learning. These complex, inferential questions are sometimes known as ‘rich’ or ‘hot’ questions.

Rich Questions

In class discussions, teachers ask two to three questions a minute. Research suggests that these questions are often of a low order, requiring simple recall or a listing of facts. A rich question is a high order question that requires students to evaluate, synthesise or explore their knowledge in a deeper way. Rich questions can be used to stimulate inquiry, seek comparisons and identify complexities within a topic.

‘How is this similar to the other example we looked at?’

‘What would happen if...?’

‘How would you explain this to another student?’

‘In what ways is this situation different though?’

Watch the two videos below to see what some teachers say about the value of using rich questions in the classroom. (Note that in the second video, the teacher has made a point of ensuring that students understand the difference between literal and inferential questions.)
1. Asking Open Questions - Teacher’s Perspective

http://www.youtube.com/watch?v=je_WNjTQ_o&feature=related

2. Getting students to recognize these types of questions

http://www.youtube.com/watch?v=VUMgRXD4klg

As a classroom teacher you often notice the real value of asking rich questions when dealing with incorrect responses. Asking rich questions is about getting students to do the thinking in coming up with a response. If a student response is incorrect you can use a rich question to subtly encourage them to rethink their answer.

In his pocket book Assessment and Learning Ian Smith gives a range of examples for teasing out the thinking behind wrong answers and getting students to rethink their response:

‘What do you think?’
‘Why do you think that?’
‘Can you be sure?’
‘Is there another way?’
‘Do you have a reason?’
‘How do you know?’

Practicing Rich Questions in Class

Of course sometimes it is hard to come up with sophisticated, rich questions on the spot but there are some techniques and activities that you can use to make this process easier. Below we explore three of these:

1) Inverted Questions
2) No Glossing Rule
3) Two Minute Lesson Plans

They focus on different aspects of class discussion but what they have in common is that they provide a framework for formulating higher order questions.
Inverted Questions

This style of question involves presenting students with an answer and then asking them why is it correct. By simply inverting a closed question so that the answer is included in the prompt, the teacher can create a much richer question:

Closed Question
Teacher: Is the 3 the numerator in the fraction 3/4?
Student: Yes.

Inverted Question
Teacher: The 3 is the numerator in this fraction. Why?
Student: The 3 is the numerator because it tells us that there are three equal parts in the whole number.

You can see from this example that the teacher was easily able to convert their foundation question into a much higher-order inquiry. The great advantage of this technique is that it allows you to formulate complex, high-order questions on the spot.

No Glossing Rule

Another way to ensure that students involved in high order discussions is to employ the ‘no glossing’ rule. That is a way of making sure that students fully answer the questions put to them and you don’t fall into the trap of filling in a partial or incomplete answer yourself. (You’re looking for what Doug Lemov has called the ‘hundred percent answer.’)

Teacher: Where did another revolution take place?
Student: P something, that French city
Teacher: Yes, that’s right, Paris. Now are there other places in the world where revolutions have taken place?

Research shows that students routinely respond to questions “at a different cognitive level than the teacher” and that “teachers generally accept these answers as sufficient without probing or prompting correct responses.” Having a No Glossing Rule means that you have to properly explore the accuracy of student responses. Research has shown that this investigation actually improves the quality of your students answers (Ornstein, 1988).
Two-Minute Lesson Plans

Rushed teachers often resort to focusing on low-order questions when under time pressure. A two-minute lesson plan helps teachers avoid this trap. It is organised around a range of question stems that are grouped according to Bloom's Taxonomy. They are ordered from foundation questions focusing on recall and explanation, through application and analysis, to high-order questions in the areas of evaluation and design. Teachers use it to formulate one question from each level. This simple strategy is a highly effective tool for ensuring the lesson is focused on rich questions even when you haven't had substantial time to prepare.

To use this sheet complete the following steps:

A) Identify the topic you are going to teach.

B) Select one word from each of the first three categories to create three foundation questions you can ask students about this topic.

C) Select one further word from categories 4, 5 and 6. Now use these key words to formulate three higher-order questions for exploring this topic in much greater depth and detail.

1 - recall, recognise, list, define, tell, describe, identify, show, label, collect, examine, tabulate, quote, name, who, when, where.

2 - interpret, compare, explain, summarise, describe, interpret, contrast, predict, associate, distinguish, estimate, differentiate, discuss, extend

3 - apply, demonstrate, calculate, complete, illustrate, show, solve, examine, modify, relate, change, classify, experiment, discover

4 - analyse, separate, order, explain, connect, classify, arrange, divide, compare, select, explain, infer, contrast, deduce

5 - decide, judge, prioritise, rate, assess, verify, recommend, assess, decide, rank, grade, test, measure, recommend, convince, select, judge, explain, discriminate, support, conclude, compare

6 - create, design, generate, combine, integrate, modify, rearrange, substitute, plan, create, design, invent, compose, formulate, prepare, extrapolate.

-Developed from the work of Eric Frangenheim