



the learning files

QUESTIONING THE QUESTIONS

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Have you ever questioned the questions you ask in your class? Do they lead to the intended outcomes?

Questions are used as instructional cues or as assessment tools. From all teaching methods it is

the second most used strategy (after lecturing).

But are we doing the right thing? Is it time to question our questions? What can we learn and improve? These are some questions which we hope to answer in

this learning file.

Poor responses from students are often blamed on the lack of understanding of the students. However, it is crucial to reflect on "You get what you ask for".

Experiment and research

We asked 27 members of staff of a Zambian college to write down 5 questions they had asked during their last teaching moment. The lecturers then in pairs evaluated their own questions. They identified the level of their questions, using Bloom's taxonomy. The results were an eye opener for all: the majority of the questions asked were related to lower order thinking skills.

Research shows that in general

- lecturers over-emphasise factual information
- lecturers ask very few higher-order thinking questions
- lecturers provide too little time after asking the question. The wait time between student's answers and the next statement by the teacher is also too short.

The good news is that improving on questioning techniques has a direct impact on student learning and achievement.



The learning files are an initiative of the National CPD Task Team. They are written by and for the Colleges of Education and deal with topics that concern education in general and education in colleges more specifically. The files give a mixture of literature, good practices, self-testing and tips and tricks to tackle a certain problem. In this case: **Questioning the questions.**

Do you feel like contributing ideas or topics, please do not hesitate to contact us: info@vvo.org.zm.

**How do you get the right answers?
By asking the right questions, of course!**

What questions should we ask?

We should ask many types of questions. We should ask questions that have one right answer (closed questions), questions that have many possible answers (open questions), questions that stimulate different levels of thinking, questions about content and definitions and interpretations, questions about processes and procedures and even questions about questions. But most important: we should ask questions that relate to the intended outcomes of the lesson.

An overview:

1. Questions that promote **different kinds of thinking**

Do not only ask memory questions but also text-implicit questions; inference questions (questions that ask about implied meaning); interpretation questions (asking the students to paraphrase text in their own words); transfer questions (apply the same in another context); hypothesis questions; evaluative questions (make judgements); reflective questions (make students think about their thinking). See also page 4 of this learning file for Bloom's taxonomy.

2. **Deep versus surface** questions

Surface learning refers to learning that involves 1 idea or some ideas (e.g. *What is...? What events led to Zambian independence?*) Deep learning refers to relations between ideas and extending ideas (e.g. *How does ... affect...? What would happen if...?*).

3. **Open and closed** questions

Closed questions are factual and focus on a correct response. They can be simple (e.g. *Who was the first president of Zambia?*) but also complex (e.g. *How did character b show his disappointment?*). Open questions have several correct answers (e.g. *How would you approach this problem?*). They tend to demand higher order thinking skills.

4. **Essential and guiding** questions

Essential questions are universal questions that have no definite answers (e.g. *Is time a cultural concept?*). Guiding questions are more specific and are sometimes called "curriculum" questions (e.g. *How many seconds are there in an hour?*).

5. Questions that clarify students' **values**

These questions help students reflect on who they are, where they are going, how they are approaching work and tasks, what are their moral standards, their ideas about gender, equity, etc.... (e.g. *Will you consider a possible alternative? Do you believe women can do this job? How will this affect you in future?*)

And our students?

It is one thing to ask the right questions as a lecturer. But do you give you students also chances to ask questions? Do you help them ask the right questions? Do you stimulate them asking questions in your class? If they will have to ask good questions when they become teachers, then they must be given a good model by you and the chance to ask many questions.

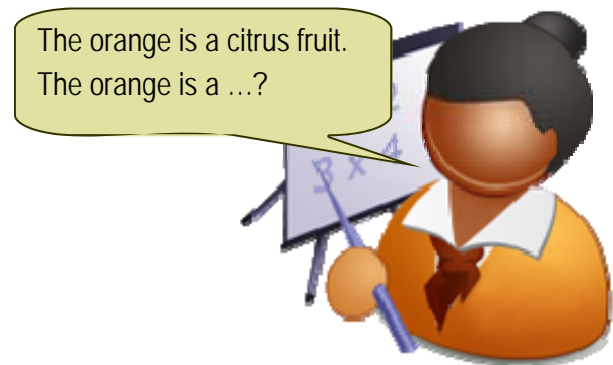


Figure 1: This popular type of question doesn't lead to any learning

	<p>Socratic questioning: http://www.youtube.com/watch?v=2QSXvpbyZeM&feature=related</p> <p>Open and closed questions: http://www.youtube.com/watch?v=WfKIVPC9uuA</p>
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How to get started?



Tips and tricks

1. **Prepare your students for extensive questioning.** Lecturers who use lots of questions in a classroom might create the impression that they are evaluating the students. Students need to know that questions seek clarification and elaboration of students' ideas in order to make their thinking visible, and to help the teacher address misconceptions.

2. **Use both pre-planned and emerging questions.** Prepare your questions, based on the desired outcomes of the lesson. Research shows that when questions are not prepared, they tend to relate more to lower order thinking skills. Questions derived from the discussion/lesson itself can help guide the discussion.

3. **Use a wide variety of questions.** Use a variety of open and closed questions. Make sure you address higher and lower order thinking skills. Use Bloom's Taxonomy. Avoid yes and no questions because they tend not to trigger a lot of thinking before answering.

4. **Avoid the use of rhetorical questions.** Rhetorical questions are those to which answers are already known, or merely seek affirmation of something stated previously such as the following: Right?, Don't you?, Correct?, Okay?, and Yes? More often than not, rhetorical questions are unintentional, and are suggestive of habit or nervousness.

5. **State questions with precision.** Poor wording and the use of rapid-fire, multiple questions related to the same topic can result in confusion. Easy does it. Repeat the question, and explain it in other words if students don't seem to understand. One question at a time or else students won't know how to respond.

6. **Pose whole-group questions unless seeking clarification.** Direct questions to the entire class. Handle incomplete or unclear responses by reinforcing what is correct and then asking follow-up questions. Ask for additional details, seek clarification of the answer, or ask the student to justify a response. Redirect the question to the whole group of the desired response is not obtained.

7. **Use appropriate wait time.** Wait time encourages all students to think about the response, as they do not know who is going to be called upon to answer the question. The teacher can significantly

enhance the analytic and problem-solving skills of students by allowing sufficient wait times before responding, both after posing a question and after the answer is given. This allows everyone to think about not only the question but also the response provided by the student. Three to five seconds in most cases; longer in some, maybe up to 10 seconds for higher-order questions.

8. **Select both volunteers and non-volunteers to answer questions.** Female students frequently take longer to respond; give them adequate time to do so. Picking on the student who is first to raise his or her hand will often leave many students uninvolved in the discussion. Some teachers use a randomized approach where they pick student names from a hat, so to speak. This ensures equitable participation, and keeps students intellectually engaged.

9. **Engage all.** Use activities such as think-pair-share, think-write-pair-share, entrance and exit slips and personal white boards or slate to make sure that all students are answering.

12. **Maintain a positive class atmosphere.** Not all students will be completely clear in their thinking or enunciation and, invariably, some won't be paying attention. Nevertheless, avoid the use of sarcasm, unreasonable reprimands, accusations, and personal attacks.

13. **Interrelate previous comments.** As the discussion moves along, be certain to interrelate previous student comments in an effort to draw a conclusion. Avoid doing the work of arriving at a conclusion for your student.

14. **Equitably select students.** Remember that males have a tendency to "jump up and shout out" responses whereas females tend to be more circumspect and, therefore, delayed in responding. Control situations where inequitable responding is likely to occur.

“To reach higher order thinking skills you need to prepare the questions in advance”

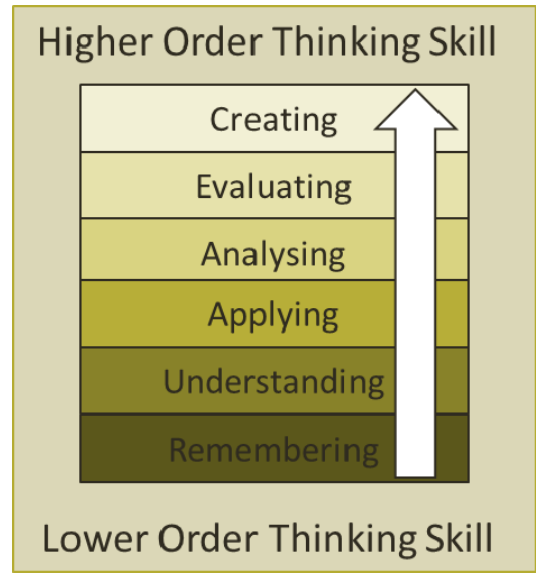
“The quality of answers in my class improved drastically once I started giving students more time to think”

Bloom's taxonomy

Benjamin Bloom is known for his taxonomy which describes levels in learning. The (revised) taxonomy can help us develop the right questions which lead to higher order thinking skills. The discussion whether we prefer the original or the revised taxonomy is not relevant here. Crucial is that we reflect on whether we give our students enough opportunities to develop their higher order thinking skills.

On these pages you will find for each level some verbs that typically belong to this level, guiding questions and some examples of questions set in a Zambian context.

Can Bloom help us?



Remembering



Remembering previously learned material

Verbs

Label
List
Name
State
Outline
Define
Locate
Repeat
Identify
Recite

Questions

What do you remember about...?
How would you define...?
How would you recognise...?
What would you choose...?
Describe what happens when...?
How is...?
Which one...?
Why did?
...

Examples

Name all Zambian provinces and their capitals.
What crops are grown in Eastern Province?
How many vowels does Nyanja have?
State the formula for the area of a circle.

Develop your own:

- ...
- ...

Understanding



Grasping the meaning of material

Verbs

Discuss
Explain
Observe
Diagram
demonstrate
Answer who, what, when, where, why questions
Illustrate
Define in your own words
...

Questions

How would you clarify the meaning ...?
How would you differentiate between ...?
What did you observe ...?
How would you identify ...?
What would happen if ...?
Can you give an example of ...?
...

Examples

Who was the key character in Zambia's independence?
What is the difference between socialists and communists?
Explain the formula for the area of a circle in your own words.

Develop your own:

- ...
- ...

Applying



Using information in concrete situations

Verbs

Report
Construct
Solve
Illustrate
Exhibit
Modify
Design
Develop
Use

...

Questions

How would you develop... to present...?
What would be the result if ...?
How would you present ...?
How would you change...?
Why does ... work?
Can you develop a set of instructions about..?
What factors would you change if ...?

...

Examples

Compute the area of the round square in front of the administration building
Identify all forms of punishment you have observed in the video recording of a lesson taught in Gr3.
Identify examples of metaphors in this poem.
NOTE: a student writing "15" next to "3 times 5 equals" is not applying but remembering/understanding.

Develop your own:

- ...
- ...

Analysing



Breaking down material into parts and understanding their relationship to the whole

Verbs

Sort
Analyse
Investigate
Classify
Survey
Debate
Graph
Compare
Contrast
Distinguish

...

Questions

How can you classify ... according to?
How can you compare the different parts ...?
What explanation do you have for ...?
Discuss the pros and cons of ...?
What is the analysis of ...?
How is ... similar to ...?

...

Examples

What strategies do you need to solve this math word problem?
Listen to the speech of the president: distinguish facts and opinions.
Compare the major differences in the economic policies of President Kaunda and President Chiluba.

Develop your own:

- ...
- ...

Evaluating



Judging the value of a product for a given purpose, using definite criteria

Verbs

Justify
Self evaluate
Conclude
test
Group discussion
Justify
Judge
Criticise
Appraise
Recommend

...

Questions

What criteria could you use to assess ... ?
What data was used to evaluate ... ?
What choice would you have made...?
What is the most important...?
How could you verify ... ?
Is there a better solution to...?
What do you think about...?
Do you think this is a bad or a good thing?

...

Examples

Write a review for the novel you have read and specify the type of audience that would enjoy this.
Observe another teacher (or yourself) and determine the quality of the teaching performance in terms of the teacher's appropriate application of questioning techniques.
After solving the math problem, determine the degree to which that problem was solved as efficiently as possible

Develop your own:

- ...

Creating (+synthesising)



Putting parts together into a new whole

Verbs

Invent
establish
Design
Formulate
Hypothesize
Re-tell differently
Report
Experiment
Generate
Compose
...

Questions

What alternative would you suggest for ...?
What changes would you make to revise...?
Predict the outcome if...?
What could you invent ...?
How would you compile the facts for...?
If you had access to all resources how would you deal with ...?
Compose a song about ...
Design a ... to ...
...

Examples

How could you re-write this story with a city setting?
Write an essay or a poem.
Write a set of rules to prevent what happened in this part of Zambian history.
Apply the strategies learned in educational psychology in an organised manner to solve this educational problem.
Apply and integrate several different strategies to solve a mathematical problem.

Develop your own:

- ...
- ...

The more you deliberately design questions, the easier it gets.



More ideas: <http://www.teachers.ash.org.au/researchskills/dalton.htm>

“Judge a man by his questions rather than his answers.”

(*Voltaire*)

Handling answers

1. **Listen** carefully to your students as they respond; let them finish their responses unless they are completely missing the point.
2. **"Echo"** their responses in your own words.
3. Acknowledge correct answers and provide positive **reinforcement**. Identify incorrect responses (try to find out the reasoning behind it) and ask for alternative explanations from other students.
4. **Repeat** student answers when the other students have not heard the answers.
5. Periodically restate the **goal** of the discussion so that it is clear for the students. It is particularly important to ask questions near the end of your discussion that help make it clear whether or not the goal has been achieved. Identify areas in need of clarification.
6. Ask **probing** questions to trigger more responses, to adjust or to redirect.
7. **Don't ignore wrong** answers, follow-up.
8. Sometimes student will restate the teacher's questions in their own words and ask the teacher for a response -- getting the teacher to do the intellectual work. When such an event occurs, **restate** the question, and pose it to the class.
9. If you don't know the answer to a student's question, nor anyone in class, **make a plan for finding the answer**.

How good are your questioning skills?

	yes	no
I prepare questions as part of my lesson preparation.	<input type="radio"/>	<input type="radio"/>
I make sure I use a variety of questions.	<input type="radio"/>	<input type="radio"/>
I always count to 3 after posing a question.	<input type="radio"/>	<input type="radio"/>
I make sure all students get an opportunity to answer a question.	<input type="radio"/>	<input type="radio"/>
I actively engage all students in thinking.	<input type="radio"/>	<input type="radio"/>
I use a variety of prompts to encourage further reasoning and answers.	<input type="radio"/>	<input type="radio"/>
I use student answers as a start for further (probing) questioning.	<input type="radio"/>	<input type="radio"/>
I try to follow the line of thought of a student who gave a wrong answer.	<input type="radio"/>	<input type="radio"/>
I involve other students in the discussion after 1 student has given an answer.	<input type="radio"/>	<input type="radio"/>

How to use this learning file in CPD?

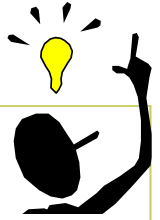
Steps to follow (as a department or section or a group of people who would like to improve their classroom questioning techniques)

1. Discuss the learning file (e.g. during CPD time). See if there is a shared understanding. Feel free to add on more information that might for example be specific for your subject.
2. Reflect on your current practice. Compile a list of typical questions asked during some recent lessons.
 - a. How much variety do you observe in the questioning? (see the learning file)
 - How far do these questions require different levels of thinking? Check if you can place the questions in one of the categories of Bloom's taxonomy of questions
 - How far were the questions asked open or closed?
 - b. Try to come up with some more open questions that stimulate higher order thinking that you could have asked. Discuss in pairs and in the group.
3. Lesson study approach
 - a. In groups (or as a section), plan a demonstration lesson in which features of good questioning techniques will be used.
 - b. Somebody volunteers to teach the lesson; other observe and one person records the lesson on video. People observing could in advance agree to focus on different features of questioning techniques (different types of questions but see also tips and tricks and handling answers)
 - c. Exchange notes and views about the questioning techniques used in the lesson in pairs and then as a whole group (the video could be played again to aid the discussion)
 - d. Agree on lessons learned and next steps
4. Alternatively, personal action plan approach,

This is a short term commitment to implementation by all members of the group.

 - a. They answer a simple question: what am I going to put into action during the coming week? e.g. "I will prepare at least 5 questions, based on lessons learned from this learning file, for each lesson I will teach in the coming week."
 - b. Try out and individual reflection (did I do what I promised to do? How did it go?)
 - c. Group meeting: exchange of experiences, challenges, finding solutions.
 - d. Agree on lessons learned and next steps
5. Invite each other to observe each other's lesson and coach each other
6. Discuss the experiences during a whole staff CPD meeting

Reflections



What did you take with you from this learning file in terms of knowledge, insights, skills, attitudes?



How will you use what you've learned?



What questions do you still have?

Literature

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Research: Hans Casier, Lieve Leroy

Editing: Patrick Kayawe, Lieve Leroy, Crispin Maambo

Critical readers: Hans Casier, Geoffrey Chilika, Leonie Meijerink, Webster Mwape

General editing, photographs and graphical design: Lieve Leroy

Publishing: VVOB-MOE Teacher training support programme

Contact: info@vvoob.org.zm

