

Using Questions in Teaching

The targeted use of questions in lectures can have a significant influence on the achievement of learning objectives. This information sheet explains what to look out for when addressing questions to students, the criteria according to which questions can be differentiated and used, along with considerations when interacting with students through questions.



Requirements

Teaching questions should fulfil the following requirements:

1. Questions should **build on previously conveyed information**, the students' range of experience and/or their awareness of the problem. Questions without a link to existing experience or knowledge structures can have a demotivating effect.
2. Questions should be **unambiguous, comprehensible, clear and precise**. Vague, ambiguous, overly general or multiple questions should be avoided.
3. The scope of the questions should be **reasonably limited**. Questions that are too comprehensive should be broken down into sub- / intermediate questions.
4. Questions should be focussed and **not suggestive or rhetorical**. They should be thought-provoking and therefore not suggest answers.
5. Questions should be **adapted to the competence level** of the students. For example, newly introduced terms should be explained precisely and deliberately repeated in the further course.
6. Questions should be **asked with a question word (what, who, where, how, etc.)** whenever possible. If the question word is mentioned at the beginning of the question, students can perceive questions more consciously.
7. Students should be given **sufficient time to think** after the question has been asked (rule of thumb: at least 3 seconds). This generally leads to qualitatively better (i.e. more, longer and more correct) answers.

(Dubs, 2009, p. 125ff)

Narrow vs. Broad Questions

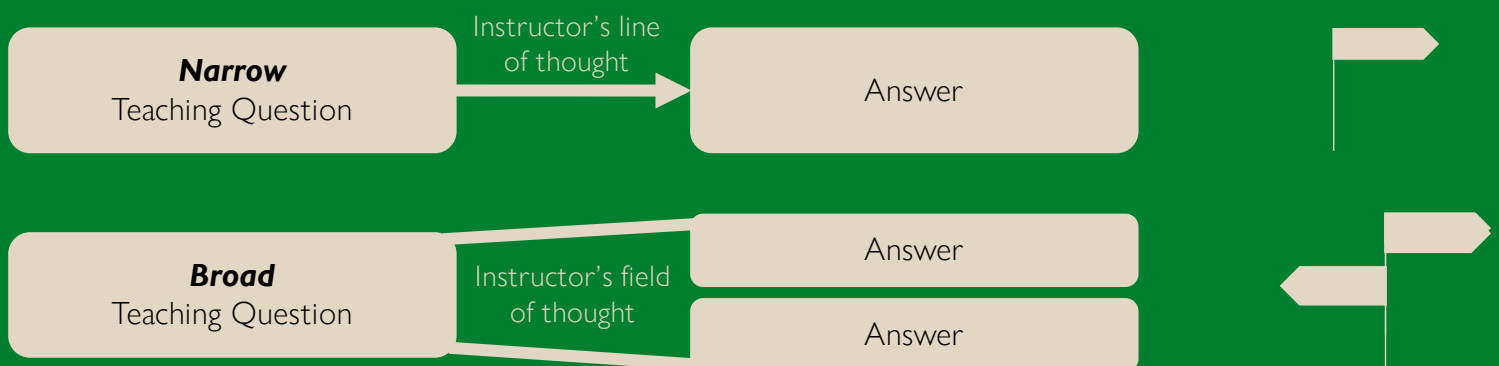
Types of Teaching Questions I

With narrow (closed) teaching questions, students are steered towards specific answers, usually with decision questions or knowledge questions. These are suitable if the students are to be led to a certain point in small steps, such as recognising a rule, making a conclusion or finding a generalisation. To ensure that narrow, closed questions do not amount to a mock activity, it is important to ensure that the questions trigger real thought processes. For example, an answer to a decision question should be followed by a justification for the decision in order to trigger cognitive processes.

Broad, open questions can be answered using different ways of thinking and allow for different solutions. They encourage discovery and promote creativity, leading students into a certain field of thought (without following a narrow line of thought). When using open questions, it is important to address all answers given. One of the biggest mistakes is to expect only one correct answer.

Rule of thumb: Ask as many broad questions as possible and as many narrow questions as necessary

(Dubs, 2009, S. 127)



Complementary Forms of Interaction

Interaction between lecturers and students is just as important as interaction between students. Each measure raises the question of its added didactic value. Teaching questions can be accompanied by the following measures:

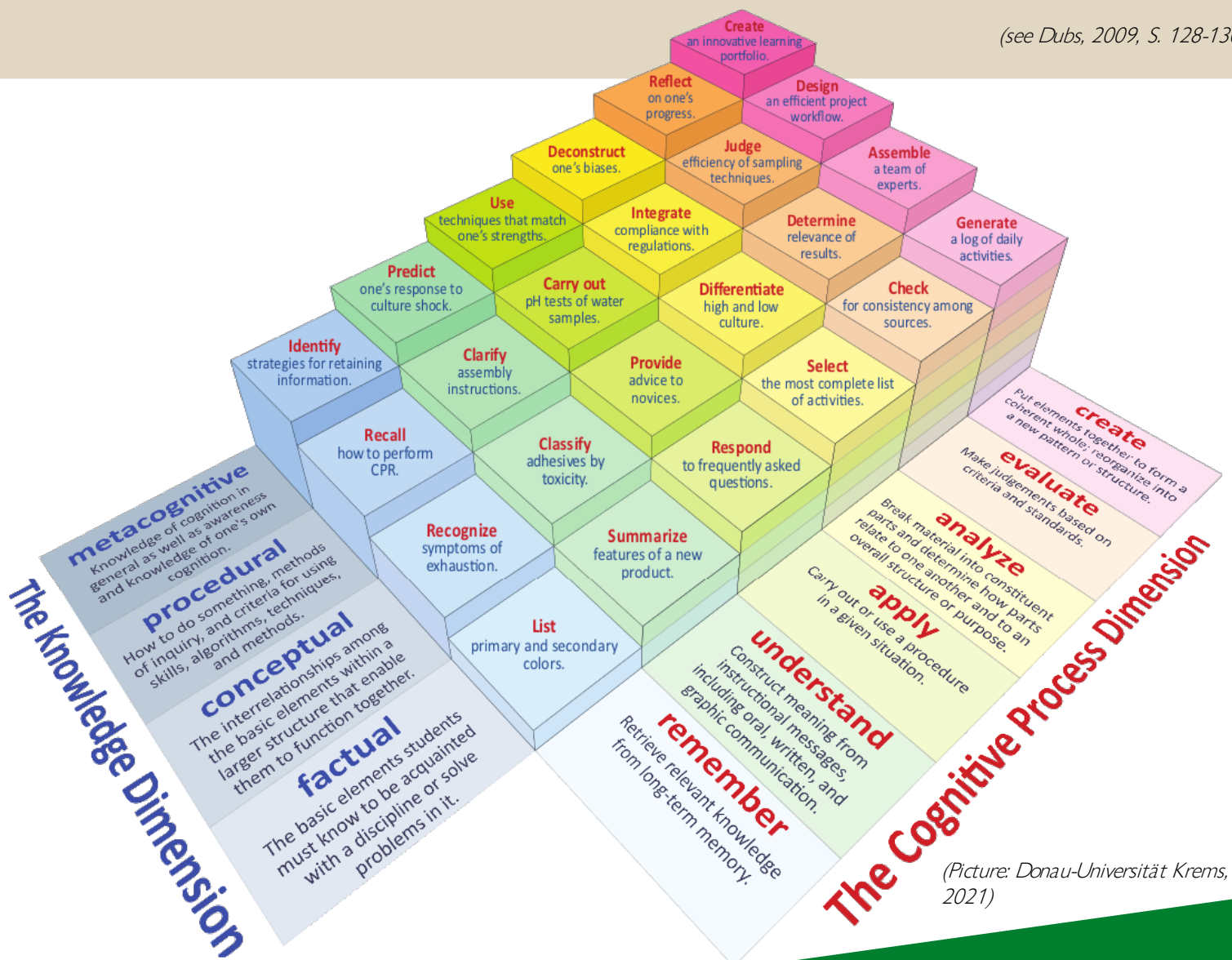
- Answering complex questions can be supported by partner work. This increases the time for reflection and lowers the threshold for sharing thoughts in plenary later on. In general, partner / group work is helpful to address differences in performance.
- Challenging questions and their answers (correct and incorrect) can be put up for discussion in plenary.

Simple vs. Difficult Questions

Questions can be categorised according to their level of difficulty, for example by using the learning objective taxonomy by Anderson & Krathwohl (2001) (see sheet "Learning Objectives").

In principle, cognitively more demanding questions lead to better learning success, especially if the aim is to promote critical and independent thinking. If, on the other hand, lower-performing students are being worked with and/or the objective is to teach basic knowledge/skills, questions at lower cognitive levels are more effective. The aim should be to combine questions of different cognitive levels in order to provide variety and accommodate the heterogeneous requirements of the students, resulting in a positive effect on learning success.

It is important here that the variation does not (only) relate to the hierarchical structure of the questions. Taxonomies of learning objectives should not be seen as strict hierarchical orders from undemanding "understanding" to demanding "evaluation" or "creation", because in individual cases understanding a complicated issue can be cognitively more demanding than evaluating a simple problem.



Calling students in class

In general, students should be equally called upon and included in the lecture. This means that lecturers can/should also call on students who do not respond to questions. To this end, it is important that there is an open, appreciative atmosphere in which a direct question is not seen as an attack. This in turn requires lecturers to be transparent about the nature of the call and its purpose.

If it is clear that students are not focussed, they should not be called on directly - and thus potentially exposed. One possibility would be to group those students with more active/efficient ones in order to achieve better participation in team/partner work.

In order to maintain the interaction process between lecturers and students and to create a positive atmosphere for discussion, responses from students should always be favourably received. This means, among other things:

- Reinforcing answers positively and appropriately, e.g. by listening to students with interest; by praising, recognising and recording good/correct answers; by taking up ideas/suggestions; and, in general, by responding in a way that is consistent in language and facial expressions.
- Incorrect answers should be labelled as such. Correct elements can be emphasised, and students can be guided to the correct answer by additional questions (see Dubs, 2009, S. 132, 137-139).



Sources

- Anderson, L. W., Krathwohl, D. R., Airasian, P. W., Cruikshank, K. A., Mayer, R. E., Pintrich, P. R., Raths, J., & Wittrock, M. C. (2001). *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. Longman.
- Donau-Universität Krems (2021). *Spicy Lesson*. [Link](#)
- Dubs, R. (2009). *Lehrerverhalten: Ein Beitrag zur Interaktion von Lehrenden und Lernenden im Unterricht* (2., überarbeitete Auflage). Franz Steiner Verlag.
- Euler, D., & Hahn, A. (2014). *Wirtschaftsdidaktik* (3., aktualisierte Aufl). Haupt.

Further Resources

- Armstrong, P. (2010). *Bloom's Taxonomy*. Vanderbilt University Center for Teaching. [Link](#)