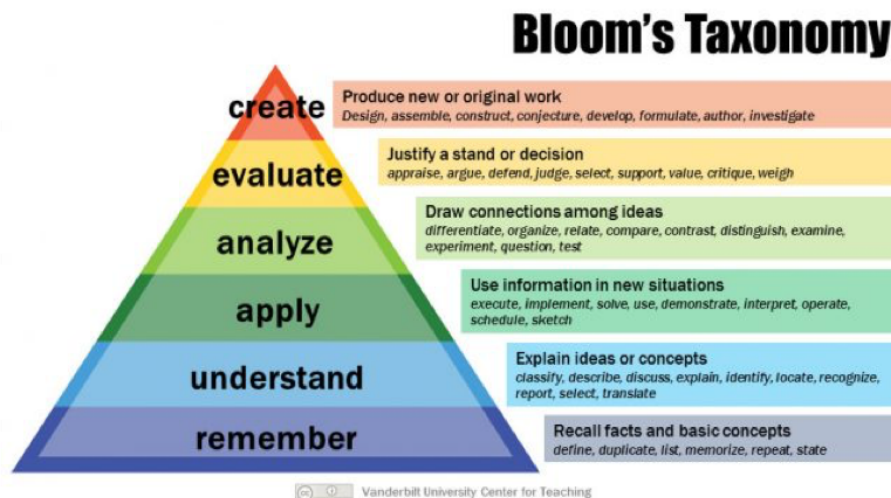


## Asking Questions to Improve Learning

When preparing to teach, compose specific questions that you will ask your students (or that you anticipate they will ask you). Doing so will help you increase student participation and encourage active learning. The strategies below are also helpful as you formulate questions for exams and assignments.

### General Strategies for Asking Questions

- **When planning questions, keep in mind your course goals.** For example, do you want students to master core concepts? To develop their critical thinking skills? The questions you ask should help them practice these skills, as well as communicate the facts, ideas, and ways of thinking that are important to their learning in your course. For more information about course goals, see **Designing a Course**.
- **Aim for direct, specific questions.** During class discussions, rather than beginning with a single question that is multilayered and complex, use a sequence of questions to build depth and complexity. Essay questions on exams or paper assignments, on the other hand, often provide an appropriate opportunity to ask multi-layered questions. If your course goals include preparing students to answer multi-layered questions, use questions during class time to walk students through the process.
- **Ask questions throughout your class and ask only one question at a time.** When you ask more than one question, students often do not respond because they are unsure which question you want them to answer. In course planning, include notes about when you will pause to ask and answer questions. Asking questions throughout the class will not only make it more interactive, but will also help you measure and improve student learning. Do not wait until the last two minutes of class to ask for questions. Students are unlikely to ask questions when they know that only a few minutes remain. For more information see **Increasing Student Participation and Teaching with Lectures**.
- **Ask open-ended questions.** Open-ended questions work best for engaging students in discussion, as they offer the opportunity for debate. Avoid asking leading questions, those that prompt or suggest the answer, and yes/no questions. If a yes/no question is warranted, be ready with a follow up question to encourage students to critically evaluate the material and engage in discussion.



- **Use Bloom's Taxonomy to be sure you are addressing various types of cognitive processes in your questions.** Bloom's Taxonomy provides a useful way to think about kinds of cognitive processes that students use to engage with knowledge. Bloom's Taxonomy can be used in all stages of course planning. The following table shows six types of cognitive processes ordered according to the level of complexity involved. Ideally, you should combine questions that require "foundational thinking" to assess students' knowledge and comprehension with questions that require "complex processing" to assess students' abilities to apply, analyze, synthesize, and evaluate.

- **Refine and reflect on questions after class.** After teaching a class session, teaching a help session, collecting an assignment, or administering an exam, take brief notes on which questions were the most effective at achieving the goals you had set and which questions led to answers that you did not expect. Keep these notes with your lecture notes or lesson plans and use them to refine your questions for the next time you will teach or meet with students.

### Facilitating a Discussion

- **Give students time to think and formulate responses.** Waiting 5-10 seconds will increase the number of students who volunteer to answer and will lead to longer, more complex answers. If students do not volunteer after 10 seconds have passed, rephrase the question. Refrain from answering your own question, which will only communicate to students that if they do not answer, you will do their thinking for them.
- **Wait for students to finish an idea before interjecting.** You may find yourself wanting to interrupt because you think you know what the student is going to say, or simply because you are passionate about the material. Resist this temptation. Hearing the students' full responses will allow you to give them credit for their ideas and to determine when they have not yet understood the material.
- **Show interest in all answers.** Encourage students when they are offering answers by nodding, looking at them, and using facial expressions that show you are listening. Do not look down at your notes while they are speaking. Thank students who respond to your questions and engage in discussions to communicate your appreciation for their involvement with creating a dialogue in your course.
- **Redirect and guide wrong answers towards a correct one.** For example, note that the student's answer overlooks the most important conclusion of the study you are discussing, then ask that same student to try to recall what that conclusion is. If he or she does not recall the conclusion, open this question up to the class.
- **Develop responses that will keep students thinking.** Resist the temptation to simply respond with praise or censure. Allow other students to provide a critique if it is warranted, and continue to ask probing/guiding questions. For example, ask the rest of the class to respond to an idea that one student has just presented, or ask the student who answered to explain the thinking that led to their answer.

### Selected References and Resources

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