



*How do I encourage critical thinking in a discussion session?*

*How can we have a discussion in the sciences when there is so much material to cover and to learn?*

*What do I need to do in order to have all students participate in the discussion?*

Active listening to your students is a skill that should allow you to orchestrate and spark dialogue in discussion sessions. Though there are general guidelines for the leading of a discussion, different disciplines may require unique approaches for a good discussion to occur. For example, attention to both the meaning and the common themes in your students' remarks is important in a humanities or social sciences discussion. In the natural or physical sciences, when students are confronted with large amounts of new material, you may need to engage your students by breaking down a question into a logical sequence of smaller and simpler questions, which they can grasp more easily. In art, music, or film appreciation, multi-media may be a necessary part of the discussion to illustrate an aesthetic judgement.

### **General Guidelines: Guiding the Discussion**

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Write on the blackboard key points that emerge from the discussion and use these for summarizing the session.

Keep the discussion focused: brief interim summaries of what has been discussed are helpful.

Use non-verbal cues to maintain the flow:

- Prompt students to speak by an expectant look in your eye, a nod of your head, or a slight motion of your hand.
- Hold up your hand to prevent one student from interrupting another.
- Shift the mood and pace of the class by circulating in the room.
- Step back from a student who is speaking so that he or she will see the other faces in the room.

Bring the discussion back to the key issues. If the discussion is off track, stop and describe what is happening ("We seem to have lost sight of the topic; let's pick up the notion again that ..."; Peter, you have a good point, but does it directly apply to the issue of...? "This is a most interesting insight but we also need to talk about...").

Clarify students' confusions: "Let's clear up this misunderstanding before we continue;" "We've covered some important points so far. Are you persuaded or troubled by this line of thinking?"

## 2 Leading discussions

Prevent the discussion from deteriorating into a heated argument: remind students to focus on ideas, not on personal attacks, and to show tolerance for divergent points of view.

Do not shut off disagreement as soon as it occurs: a certain amount of disagreement can stimulate discussion and thought. Lively exchanges can be generated by asking, “What would a devil’s advocate say?” or “Will someone present an opposing point of view or counterposition?”

Be alert for signs that a discussion is breaking down such as:

Members taking sides and refusing to compromise; ideas being attacked before they are completely expressed; excessive hair splitting or nit-picking; repetition of points; private conversations; apathetic participation.

Vary the emotional tone of the discussion:

- To spark a discussion, ask specific rather than general questions; call on individual students known for their strong opinions.
- To calm a discussion, pose abstract or theoretical questions, slow the tempo of your voice, and avoid calling on specific individuals.

62 Bring closure to the discussion: Announce that the discussion is ending (“Are there any final comments before we pull these ideas together?”). The closing summary should then show students how the discussion progressed, emphasize two or three key points, and provide a framework for the next session. End by acknowledging the insightful comments students have made.

Assign students responsibility for summarizing the major points. At the beginning of the discussion, select one or two students to be the “summarizers” of the major issues, concerns, and conclusions generated during discussion. A variation of this technique is to tell the class that someone will be called on at the end of class to summarize (this strategy encourages students to listen more carefully for the main ideas).

During the closing minutes of class ask students to write down a question that is foremost in their minds. Collect these questions (turned in anonymously) and use them to initiate discussion at the next class meeting.

### Discussion Sessions in the Humanities and Social Sciences

In addition to the general guidelines outlined above, the following strategies have proved successful for the fostering of critical thinking in discussion sessions in the humanities and social sciences:

- Start by asking provocative questions. The questions can be distributed in written form either prior to or at the beginning of the session; or ask students to turn in questions of their own to start the discussion.
- Make controversy work for you. Write several controversial statements related to the reading material and ask students to agree or disagree with one of them.
- Try to break large concepts or generalizations into component questions so as not to daunt students with large theoretical questions.



- Make silence work for you. Offer an idea or a concept to the class, then tell them they should think about the example for three to five minutes. Comments offered after such a pause will be more thoroughly considered than those expressed off the cuff.
- Think about transitions before the session: determine how various themes are related to one another, so that you can move smoothly from one student's comment to another's. Also, try to remain flexible about the order in which topics come up: adhering to a rigid outline may stifle discussion.
- Avoid jargon: some difficult concepts should be explained in familiar terms that students can grasp.
- Make time for group activities: ask students to break up into small groups, which will then report to the class on material from lectures or readings.
- Encourage clarity: If you do not understand students' comments, ask them to clarify. It will encourage them to rethink, reformulate, and reassess what they have said.

### Discussion Sessions in the Arts

In the arts, as in the humanities and social sciences, critical thinking is an essential part of discussion sessions. However, "arts appreciation" demands that students not only acquire a certain body of knowledge, but also that they develop sensory, memory, and cognitive skills, all of which contribute to "aesthetic judgement." The use of multi-media equipment as well as "live" art should therefore be intrinsic parts of discussion sessions in the arts. In addition to all the guidelines outlined above, the following "tips" can be helpful in assuring a well-organized discussion in the arts:

- Make sure that you have good command over the working of the audio and visual equipment. Make sure that slides, CDs, or other recordings are in order. Students can be fairly tolerant when occasional problems arise but have little patience with consistent, large-scale disorganization (cf. Module 2.5).
- Try to engage the students in "real art situations": for example, in a music class, invite an amateur string quartet; in a theatre class, invite an actor from a local amateur performing group.
- Be mindful when choosing examples of music or art. Too many examples that are glossed, rather than examined or adequately discussed, can frustrate students.

### Discussion Sessions in the Sciences

Though, in general, science courses do not include structured discussion sessions analogous to those in the humanities and the social sciences, your interaction with students in the laboratory includes many elements present in all discussion sessions. However, students in the sciences are confronted with large amounts of new material which they need to understand rather than simply memorize. For example, in chemistry, students need to understand both the structure of an organic compound and its spectrum. Some students painstakingly memorize all the chemical shifts associated with many different functional groups, but fail to learn the underlying patterns which make it easy to remember them: they have learned much of the detailed information but completely missed the basic principles. In discussion sessions in the sciences, students need to have important concepts not only explained to them, but also emphasized, repeated, and otherwise differentiated from the rest of the material.

## 4 Planning Discussions

In addition to the general guidelines outlined above, the following strategies have proven successful for discussions in the sciences:

- Ensure students' background knowledge: repeat the main points of the lecture. The bulk of class time can then be spent discussing and explaining the topics at an intermediary level to reach most students.
- Review topics for the problem set. If the discussion session takes the format of a problem session, a quick review of the topics upon which the problem set was formulated may help.
- Put an outline on the board. An outline of the topics to be discussed can be written to one side of the board. This helps students follow the material and keeps their thoughts organized as you move on to new topics.
- Engage your students by encouraging them to answer their own questions. This means that you will need to guide them.
- Try to break down a question into a logical sequence of smaller and simpler questions, which they can grasp and answer more easily. For example, if one of your students asks, "What is the product of this reaction?" you might begin by asking her, "What are the functional groups of the reactants?" and then, "What are some of the reactions which these functional groups undergo?" and then, "Why might some of these reactions be more likely than others under these particular reaction conditions?" and so on. At each stage a very simple question can bring your student closer to an answer to the original question.
- Consider inviting your entire class to participate in this discussion.

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### Sources

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