

How to Lead a Discussion of Scientific Journal Articles*:

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*presented on the most boring powerpoint slides ever.

Goals of our discussions:

- A broad goal is to understand the point of each paper;
- The goal of pairing a classic paper with a recent paper is to understand how the focal area of ecology was first defined (and what was initially known), and to then compare that to how far the focal research area has progressed (and what remains to be discovered);
- To practice public speaking and leading a discussion (!)

How NOT to lead a discussion:

- Start off with a monologue that takes up most of the class, so there isn't actually any time for discussion;
- Tell your fellow students what the papers are about, by going through nearly every paragraph of each paper in detail.
- Ask for class feedback on every minute detail: What was this about? What was that about? What did you think about that? How do you feel about his comment? and on and on.

End Result: At the end of the class, the students participating in the discussion will be no better informed, having gained no better understanding, of what the paper was all about. The students won't "see the forest for the trees." The key points and argumentation will be lost in a morass of blinding detail relating to statistics, procedures, and so on.

The bottom line: Leading a good discussion is not as easy as it looks. It requires quite a bit of planning and an understanding of group dynamics.

Don't assume that discussions lead themselves, or that your fascinating subject matter guarantees success.

Be Prepared!

1. **Read.** Read the articles multiple times, if necessary, to grasp the concepts and be familiar with content. Seek help with ideas you do not understand. Consult literature that is cited, or other material that will enhance understanding of the topic. Be sure to understand the basic operation of the system under consideration, even if it is necessary to consult texts, additional articles, or colleagues. Look for material or examples that help expand the applicability or generality of the ideas or system under consideration.
2. **Plan the discussion.** Be prepared to lead the discussion by asking questions. Plan the questions, structuring them so as to achieve the discussion goals. The most important prerequisite to leading a successful discussion is preparation.
3. If you will be leading a discussion along with another student, you will need to get together ahead of time to develop a plan of how to proceed.

Plan the discussion session as carefully as you will plan your presentation.

Useful discussion questions

Focus on a small set of questions (e.g. 2-3 per paper) that will help steer the class to the points you find most interesting and useful about the article. These might include questions such as:

- What point was the author trying to make? Did he/she make his point?
- Are all of the results obtained consistent with the hypothesis being tested?
- What sort of evidence would make the authors' case stronger? What sort of evidence would argue against the authors? What case would a skeptical scientist make against the authors' interpretation of their results?
- Do all of the conclusions drawn make sense based on the results? What evidence did the author cite in favor of his/her claims? Did the author provide substantive support for his/her position? Which conclusions are directly drawn from the analysis of the results, and which are more speculative?
- How/Why did this article help to define the field? Has this article supported the generally accepted thinking on this topic or has it refuted it?
- Don't ask yes-or-no questions or questions with obvious factual answers.

As a discussion leader, make sure that you have thought about possible answers to each question you pose to the class!

At the beginning of the class discussion you're leading, start by briefly summarizing the paper...

- Keep the introduction very brief (3-5 minutes per paper), because the bulk of the time should be for discussion.
- Introduce the topic with reference to the general conceptual context. Try to see the forest for the trees, in providing background information, for example by thinking about where the topic might fit in an introductory textbook on the topic. This also helps establish the importance of the topic.
- **Avoid the common mistake of giving too much background:** You don't have to go back to Darwin for every talk on the subject of Evolution. Again, think of your group and its needs when deciding how much background or explanatory information to provide.
- Review key methods, findings, and interpretations – you can use the chalkboard to illustrate key points or figures; using simple illustrations (figures and tables — consider simplifying them for ease of comprehension by the group).
- Provide perspective by giving some history underlying the work, by discussing its scope or applicability, and by asking what are the advances (e.g., technical, conceptual, or analytical).
- You as the discussion leader may wish to suggest for consideration your own novel interpretations, deductions, or syntheses.

Then move into the discussion.

Leading the discussion means you have to...

Initiate it:

- Coming prepared with a list of provocative questions is an excellent way to get a discussion going. These should be designed to promote discussion that will address our learning goals. Some can be more speculative to elicit opinions. Consider dealing with the core issues first, because this guarantees that the most important issues will get discussed, leaving less important ones for any remaining time.
- Also note that it's best to begin with questions about meaning and move only later (time permitting) to questions about merit. It's difficult and unwise to try to discuss the merits of a position we do not yet understand.
- Ask your first question. If you are lucky, someone will respond, but sometimes your question will be met with a long and uncomfortable silence. What you do in response to this silence is crucial. Above all, do not answer your own question. This simply informs the class that they need not respond since you will do that for them. Try re-wording the question, and wait them out! They are uncomfortable too, and eventually someone will say something to start the discussion.
- The primary mistake made by novice discussion leaders is that they talk too much. Remember, your job is to promote discussion by others.

Leading the discussion means you have to...

2) Manage it!

- As the discussion leader you (and your partner) are in charge, and should feel comfortable taking charge, if necessary. Keep the discussion moving actively, by avoiding digressions, and returning it to the topic at hand, if necessary.
- Once the discussion gets going, you are faced with the delicate but extremely important task of providing direction to the discussion while still giving it some autonomy. Discussions take on a life of their own, and it is important that you give the discussion freedom to grow and evolve in its own way. Students will rapidly lose interest in participating if it becomes clear that only certain types of responses are acceptable. At the same time, you need to keep an eye on your learning objectives and prevent the discussion from veering too far away from the subject at hand. Remember, this is an academic class discussion and not a free-form chat. If the discussion has strayed too far afield or if you need to move on due to time constraints, simply interrupt the discussion, acknowledge the current focus of the discussion, and announce that you want to bring the focus back to the original topic or that you need to take up the next issue.
- Don't limit the discussion to questions on which you have answers. Use the discussion as an occasion to inquire jointly with other prepared students into questions you find interesting and important.

Leading the discussion means you have to...

2) Manage it!

- Remember that a discussion is just that, and the job of the discussion leader is to invite participation by, and engage, all other members of the group.
- Encourage speaking up by other participants, so all can hear. Encourage participants to clarify or elaborate. You can also interrelate previous comments, reinforce student answers, throw back questions;
- Focus any dissension on issues rather than participants. Differences of opinion should be encouraged, and can certainly make any discussion more lively and memorable. Use disagreements to encourage critical, independent thinking. Test information for reliability. For example, is it relevant (how does it apply?), is it valid (what's the source of information), and is it credible (is there contradictory information or interpretation)? Help with clarity, e.g., by reviewing your own understanding or asking others to clarify issues.
- Watch out for non-constructive "contributions". For example, there's the "talk hog" who goes on and on, to everyone else's disappointment. To deal with this type, slide into the discussion during a breath or break in thought, acknowledge their contribution, and redirect.
- Maintain a positive atmosphere

Leading the discussion means you have to...

3) End it

- At the end of the discussion, take a minute to make a few summary comments regarding the discussion. This is also an excellent time to reemphasize certain points associated with the discussion's learning goals. And/ or you may wish to seek consensus, conclusions, and/or assessment, and encourage members of the group to participate in providing closure.
- Ensure the discussion is completed within the 50 minute class time

Tips for being an effective speaker

- Speak clearly, towards group participants, and slowly enough to be understood. Try to maintain eye contact with group members, which establishes rapport, comfort, and feedback on whether or not group members are following you. Seek a speaking pace that favors comprehension.
- Nervousness can affect how one speaks, and most presenters feel it, particularly inexperienced students. However, many relaxation (a.k.a. stress-reduction) techniques are available to help relieve the nervousness, such as deep breathing and positive visualization — e.g., visualizing yourself handling the situation successfully.
- One of the best defenses is a strong offense, namely preparation, which tends to provide the confidence that can also help relax a speaker. Recognizing one's own nervousness is the first step in learning techniques to overcome it. Practice can't hurt, either, particularly in terms of speaking, presenting background information, and timing the presentation of material.

Evaluation

Worth 10% of your final grade:

- Introduction and summary to the session (including demonstrated comprehension of the material, staying within time, compelling presentation, preparation, some contribution of your own evaluation of the material) – 4%
- Discussion moderation (including preparation of questions etc., effective leadership of the discussion, staying within time, overall effectiveness of the discussion for facilitating a deeper understanding of the material amongst class members) -6%

Being a good discussion participant

Before the class discussion:

- Ensure you have read and thought carefully about both papers before our class;
- Consider the discussion questions outlined herein and make some notes on your answers to these questions, in preparation for contributing to the class discussion;

During the class discussion:

- Help your fellow classmate(s) who is/are presenting and leading discussion; they will be nervous but knowledgeable.
- Listen closely, speak voluntarily, follow up points of interest.

Developed from the following resources:

- *Tips for students leading a journal club*
<http://evolution.berkeley.edu/evolibrary/teach/journal/journaltips.php>
- *Sherry, T.W. Leading Discussion of a Scientific Journal Article*
<http://tulane.edu/sse/eebio/academics/graduate/scientific-journal.cfm>
- *Suber, P. Giving Presentations and Leading Discussion.*
<http://legacy.earlham.edu/~peters/courses/leaddisc.htm>
- *How to NOT lead a discussion:*
<http://www.phy.ilstu.edu/pte/310content/discussion/hownottoleadadisc.html>