# Let's give them something to talk about: choosing a discussion paper

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Most graduate-level ecology programs offer discussion-based seminar courses that students can take to fulfill certain requirements for their degree. These seminars are typically structured around a scientific publication, chosen by the instructor or a student in the course. My experience – in two graduate programs at two universities – has been that the quality of the discussions generated through seminars can be highly variable, and depend largely, though not exclusively, on which paper is selected for discussion. Some papers have students eager to provide input and engage in fierce debates, whereas other papers leave students with little to add.

Choosing a paper, whether as an instructor or student, can therefore be a daunting task. Many factors will determine whether a paper will facilitate a good discussion. Here, I summarize some important points to consider when choosing a research paper for a discussion-based seminar course. Specifically, I examine the relative importance of group appeal, the type of paper, journal selection, analytical approach, and the conclusions drawn from the experiment that forms the basis of the paper. These recommendations are based both on my own experiences and those of many other graduate students and faculty members who have shared their opinions with me.

*Group appeal*. One factor to consider when choosing a discussion paper is the degree of interest that the paper may potentially hold for the group. As graduate students, we become specialized in our fields, and it is very easy to gravitate toward papers for which we have a natural affinity. However, it is important to (1) remember that the discussion includes students with interests other than one's own and (2) consider the specialties of the other students in the seminar, to make it more likely that they too will be eager to join in the discussion.

*Type of paper*. Depending on the nature of the seminar, empirical papers generally make for better discussions than reviews, meta-analyses, and some theoretical papers. Although the latter three can assess topics more broadly, these manuscripts tend to yield meager discussions; it would not be uncommon to spend more time examining the studies cited therein, instead of the broader topic at hand.

*Journal selection*. Something else to consider when searching for an appropriate paper is the choice of journal. More often than not, papers published in some of the most "high-profile" journals do not provide a basis for lively discussions. This may be due to the tendency for papers in such journals to be relatively dense and brief. However, these papers sometimes include supplemental material, which should be distributed along with the paper. In contrast, "low-profile" journals are designated as such in part because they often do not have much to offer that would form the basis for a valuable scientific discussion. It is therefore generally advisable to settle on an "intermediate-profile" journal that is specific to the subject of the seminar.

*Analytical approach*. Students in seminar courses have different backgrounds and levels of experience. This is especially true considering that graduate students tend to take courses in the beginning of their programs, and save research and writing periods until later. Reading a paper that is full of complicated methodologies or statistical analyses may lead to unproductive discussions, as questions that will arise tend to concern these analyses and not the essence of the paper. For seminars on most topics, it seems unlikely that a lengthy discussion of statistical methods will either be fully understood or retained by most students. Unless the seminar subject touches upon experimental design or statistical methodology, papers containing simple, clear, and concise analyses will facilitate more productive discussions.

*Paper sections*. The introduction section of a paper is often too broad, while the methods section tends to be case-study-specific (and not all students may have been involved in studies using similar methods); the results section is frequently objective and short. This leaves the conclusions – arguably – as the most "important" section of the paper in terms of discussion potential. The conclusion is where the authors summarize and highlight what they believe to be the most important findings of the study. But more importantly, this is where a reader should look for points of contention, given that the conclusion section is where authors extrapolate and make inference from their findings. These are the points of the paper that can and should be reasonably contested by, and discussed amongst, students to inform the group on the primary discussion topic. A conclusion that makes modest inferences but is thorough may, in the end, be a good choice. Luckily, overstated conclusions are relatively uncommon in peer-reviewed journals.

One might assume that the onus is on students to learn about the material they intend to discuss. However, this ignores what some might consider the point of a structured class discussion: a free flow or exchange of ideas. Students would like to think that the instructor has at

least some idea of how he or she would like the discussion to inform the overarching topic of their seminar. Therefore, either the instructor or student can further their own goals by tailoring the paper to the group, rather than requiring the group to conform to that paper.

In summary, in discussion-based seminar courses, students have a diverse array of interests and various levels of pre-existing knowledge. The quality of the discussion depends to some extent on the students and on the interactions of the group, but can also be dependent on the choice of paper selected for discussion. To successfully facilitate discussion within a group, find a paper that is of interest to many or all members of the group, from an intermediate-ranked journal that imperfectly draws conclusions from papers with a clear and uncomplicated analytical approach. This is by no means a formula for definite success, but highlights important factors that should lead to consistent, positive results when searching for a discussion paper.

## Faculty response

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For the sake of argument, let's say that the choice of reading material is irrelevant to the quality of discussion in a graduate course. In the classroom, I have observed a high variance in the success of replicate discussion sections involving the same required reading. So what does make for a successful discussion?

Clearly the behavior of the discussion leader, whether graduate student or faculty, plays a huge part in the success or failure of a discussion session. But what does it take? First, we can identify what a leader should not do. The leader should not give a 15-minute monologue summarizing either the focal paper or the leader's opinion about that paper. The chances are close to nil that a room exposed to such a soporific will ever rouse itself into a lively discussion. Moreover, everyone should have read the paper, making the "CliffsNotes" synopsis a waste of time.

Also, the leader should not run through a list of questions of the sort: "Can someone tell me what the introduction is about? Can someone tell me what the methods section is about? Can someone tell me what the results are? Can someone summarize the discussion?". You just got bored reading that, didn't you? Exactly the point.

So what *should* a discussion leader do? Of course, the leader needs to have a list of questions and/or statements that might provoke and/or elicit opinions from those in the room. Beyond that, he or she needs to do one thing above all else: take the idea of leading seriously. The most inspired questions will come to nothing if you don't sell them with enthusiasm and authority. A good bit of advice for wallflowers in the classroom is to consciously develop a teaching personality that can play the room, call on people by name, and have the guts to let a question roll around in silence for a good, long while, allowing people to work on thinking.

Ultimately, group leaders would be well advised to ask themselves how exactly they think learning happens. Many people will give an answer that involves "critical thinking". That always sounds nice, but in practice (and particularly at the graduate level) critical thinking often becomes synonymous with negativity. It's easy and fun to tear apart published work, but it's also tedious if not accompanied by a good bit of creative thinking. Personally, I think learning happens when you figure out exactly what it is that you didn't understand. As long as you bring along a good bit of humility, a discussion section can be a fine place to pursue your own ignorance, since answers to tough questions can often be had efficiently from your peers.