



## Research seminars: pedagogical issues and solutions

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There is growing emphasis on bringing research and teaching closer together in universities throughout the world. For many faculty staff and researchers who have teaching responsibilities, making this synergy happen may not be straightforward. One of the more obvious and commonly adopted solutions is to incorporate existing research-related activities into their teaching. As many departments and institutes already host regular research seminars with external speakers, it is relatively easy to include them as part of the undergraduate curricula. I here outline some of the pedagogical challenges related to research seminars and discuss some possible solutions.

Research seminars with external speakers are usually attended by academic and research staff as well as by students in many university departments, and these seminars can provide invaluable opportunities for undergraduate students to learn about current research trends from experts. However, a common problem is that many students find research seminars difficult to follow. This may be partially caused by the lack of essential background technical knowledge, which is likely to be associated with a general disconnect between research methodologies and undergraduate science. In addition, there is very often little or no interaction between the speakers and the students. As many students regard speakers in research seminars as authoritative figures, they may feel inhibited to ask questions.

One solution to these problems is to apply active teaching intervention before the research seminars, which can significantly improve the students' experience with research seminars. Moreover, research seminars can be videoed, and the contents can be fully integrated into the conventional teaching. Technology can also be used to collate comments and questions from students to increase the interaction between the speakers and the students.