

## **Preparing a Lecture: Variability of Instruction Methods**

### Preparing and Planning a Lecture

#### Best Practices for Teaching and Learning

Now that we have explored how changing the structure of a lecture can increase attention and facilitate group work, we will talk about the types of lecture formats to consider when organizing the body of your lectures. Rosenshine and Furst's meta-analysis identify variability in instructional methods as the second most influential teacher behavior variable in student learning.

In fact, from the session titled "Principles of Learning", we learned that varying the conditions under which learning takes place facilitates meaning-making. Coding information through the use of different modes of organizational schemes leads to a richer set of connections between concepts and facilitates the construction or adaptation of existing mental frameworks.

Here are different formats that you can consider when organizing the body of your lecture. These represent only a sample. Different formats might be better suited for different disciplines or instructional approaches.

The expository lecture demonstrates a single question or problem and is often organized in a hierarchical form. This type of format is great when trying to summarize broad concepts or key ideas.

In the thesis format, a problem or concept is usually presented as a sequential series of arguments and propositions that are supported through data or experimental results. In this type of lecture, the most common approach is to present some initial data, followed by hypotheses that can explain the data provided and additional data that either supports or alters the proposed hypothesis. This format is particularly appropriate when exploring experimental approaches.

When using the problem-solving format, the lecture begins with a difficult problem or an interesting question. The answer to the question unfolds throughout the lecture, preferably with student participation. This type of lecture format is very applicable to many of science and engineering courses.

In the case study format, the lecture begins with a real-life case scenario that the students then follow step-by-step, drawing general principles from it. This type of format has been extensively used in business, law, and medical school education.

Now that we've talked about some of the principles and considerations of preparing a lecture, let's apply some of them throughout the completion of a small group activity. For a concept you would like to teach, first, determine the goal and learning objectives for the concept. Second, think about the material and main points to cover that would support the teaching and learning of that concept. Third, choose a lecture format among the ones that we have discussed or any others that you might know that will be appropriate for this lecture and justify your decision. Work individually for 15 minutes and then share your ideas with a colleague, if appropriate.