Curriculum & Education Development Academy | Lancaster University

CED

Continuing Educational Development

Ideas for lecturing and working with large groups

Contents

Students' questions

Students are often confused because some teachers allow them to ask questions during a lecture, some allot time for questions at the end and some only accept individual questions when the rest of the students are packing up and leaving. They are particularly confused because teachers don't usually explain what their practice is when they first meet students. Students who are not given any indication to the contrary will tend to assume that they can never ask questions in lectures.

It is very helpful to students if you not only make it clear what your attitude to questions is but if you also support this statement with appropriate behaviour. That is, if you say that it's all right for them to interrupt the lecture, don't look annoyed when they do; if you say you'll take questions at the end, allow time for them; if you say you'll answer individual questions, give those individuals you full attention when they approach you.

Questions

Lectures are often built around questions rather than conclusions or information: "Is Britain capitalist?", or "Would Impressionism have developed without the influence of Japanese art?"

But students will often overlook or ignore these questions because they feel safer with certainties and information. They need to be encouraged to see what the central questions are and to work with them. There are several ways in which this can be done.

The course content can be presented in the form of questions rather than topic labels. This may have the added advantage that students will begin to consider the answers to the questions beforehand.

The questions posed in a particular lecture and the subsidiary questions arising from them can be presented in a lecture handout. This will provide the direction and framework within which students can structure their notes during the lecture and evaluate new information when doing their follow-up reading and thinking. Such handouts can be very effective study guides.

Topics to be discussed in subsequent seminars may also be best presented in the form of questions. Listing these questions on a handout ensures that all the students will undertake the same task. The more complex the questions and the more numerous the subsidiary questions, the more necessary these question handouts will be.

Summarising activities

Asking students to take some time out during the lecture to organise their thoughts and their notes can really aid learning and help with concentration levels. Some ideas are:

1. **Summarise the most important points**
   - for you in today's lecture
2. **3-2-1 format** at the end of a lecture, students to write down:
   - 3 things that really interest you
   - 2 things that you would like to know more about
   - 1 idea you will find out more about tonight
3. **10-2**
   - **10** minutes of lecture,
   - **2** minutes for students to check notes, process, summarise in pairs

One minute paper

Give students exactly one minute to write down the following:

What have you learnt today?

What questions do you still have?

You can then either collect the papers in (for you to check students' understanding), or get students to discuss in groups the 2nd question and then share with the whole group if there is consensus on what is still unclear in the lecture.

Audience Response Systems

Use Interactive Audience Response for live voting in your lecture. This form of active audience participation can be done via specific audience response technology or via mobile phones and tablets (e.g. 'Mentimeter', 'Socrative' or 'Kahoot' etc.),.

Orientation

Some teachers rush into lecture rooms and start speaking immediately, only to find that they feel disorientated, the students aren't ready and their OHP transparencies are not handy for the projector. IL is worth pausing before you start your lecture and giving yourself time to orientate yourself by looking round the room, rehearsing silently the names of some of the students, chatting briefly with those at the front, sorting out your OHP transparencies, cleaning the blackboard and arranging your notes.

It's also helpful if the introduction to your lecture is such that students don't need to start writing straight away but have their own orientation period at the start whose function is to remind them what it's like to be in one of your lectures as well as to introduce the lecture and link it with the previous week's work. You can even begin to orientate your students before the lecture starts by displaying the total lecture programme or the structure of that day's lecture or by playing an audio/video extract which will provide a context for your lecture: baroque music for a lecture on baroque, for example, or a scene from the appropriate play for a drama lecture.

If you explain the principle of orientation to students and they see the point of it, they will learn to orientate themselves without your help. They can do this before the lecture by looking through their notes or reviewing the previous week's work with a friend.

Problem solving

Ask students to work in pairs on a problem you have just worked through in your lecture.

Give them a specified amount of time to do this.

Students get an opportunity to apply the lecture material and you get a rest!

You can either just tell them what the problem is or give it to them in written form, as a handout.

The handout has several advantages:

a You are more likely to present the problem in an unambiguous form.

b You are able to set more elaborate, demanding and interesting problems, requiring more skills of selection, analysis and synthesis (eg. case studies, simulations, data to be interpreted).

c You can give additional supporting material at the same time, such as references to useful sources.

d You can give an indication of the procedure which the students could follow in solving the problem. If the problem is complex, you can present it in stages, laid out in sequence.

e If they have a handout, students can check that they have remembered the problem correctly.

f The piece of paper serves as a tangible focus for the students while they work on the problem.

Reading guide

One of the functions of lectures is to prepare students to be able to read around the subject to better effect. However, students' notes don't always contain the crucial information needed to read effectively: exact page references, page numbers, comments about authors, warnings about inadequacies or theoretical biases and so on. A handout can be provided which is written to give a guide to reading, to be kept at hand whilst reading and whilst selecting books and articles to be read. A one-minute verbal gloss on such a handout can save 10 minutes of lecture time and provide much more adequate reference information than students' own notes are likely to.

Such reading guides can usefully be quite extensive, giving commentaries on books, suggesting alternatives, suggesting an order in which to read selected passages, and so on. The more specific is the information you provide, the more likely it is that students will actually read what you want them to. Reading guides are different from **resource lists** in that while resource lists enable you to find material, reading guides help you to read it effectively.

The Lancaster University Library system for providing resource lists allows you to do this on-line and automatically linked to students Moodle site.

Preparation activities

Lectures are seldom the only teaching and learning activity on a course. But the linking between lectures and other elements is often left to students. There are various ways of achieving fuller and more reliable integration, and most of them involve setting students very specific tasks to do either before or after a lecture.

Example preparatory tasks may include:

- Simply stating what assumptions will be made about student knowledge at the next lecture;
- Designing brief exercises (eg reading a section of text or answering a problem) the achievement of which will demonstrate possession of the prerequisite knowledge;
- Handing out a brief self-test, and asking students to make sure they can complete it correctly before the next lecture;
- Warning students of a pre-test to be administered at the start of the next lecture;
- Suggesting specific reference which will be used in the following lecture in a way which assumes everyone has read them;
- Announcing that the following lecture will start with a buzz group or syndicate group activity to discuss a particular problem.

Follow-up activities

Example follow-up tasks may include:

- Leaving gaps in lecture handouts which can only be filled in by subsequent independent work or reading;
- Asking specific questions or setting specific problems which will subsequently be discussed (perhaps in tutorials);
- Setting very specific reading tasks. Listing 23 texts may result in less reading than itemising 5 carefully chosen pages;
- Setting a post-test to be undertaken before the next lecture;
- Setting a specific task in preparation for the tutorial, e.g. "Write down three questions you want answers to. You'll be expected to ask these in the tutorials."

Displaying an exam question from a previous year on the topic of the lecture. This should demonstrate that the lecture provides an inadequate basis for answering the exam question and should also indicate what further

Likert scale discussion

Split large groups into small groups of 4-5. Put a contentious statement relating to your lecture on a Powerpoint slide. Ask the students to come to a consensus in their group about whether they …

- Strongly agree
- Agree
- Disagree
- Strongly disagree

… with the statement.

Check with a show of hands how many groups choose each category. Ask a spokesperson from two or three groups to report to the whole group on their rationale for choosing.

If a group cannot agree, they need to say why.

Annotation

Bring an image alive by giving students a copy (or asking them to access an e-copy) and in pairs annotate their own copy of it according to your instructions e.g. What are the key features of this image/diagram?

You can provide your version for students to compare against their own or they can share theirs via social media (e.g. twitter) or Moodle so that:

a. If available to all, students can comment on each other's annotations/interpretations
b. If only available to the tutor – the best annotations can be shared (as long as students are forewarned this may happen)
c. If there are common misconceptions these can be pointed out by peers/the tutor

Etc…

Segments

Divide the lecture into 3 sections. The lecture is given during the first and third segments. Students are invited to talk, discuss and complete small tasks during the middle section associated with what has been or what is to come.

The strategy of segmentising can have a range of benefits:

a. students are not expected to concentrate on anything for more than a (potentially) short period of time.
b. In the middle portion they can reflect on the first third of the lecture and look forward to the final segment
c. the lecturer can stimulate students via tasks during the middle segment
d. the lecturer is also given a 'breather' after a section and can in this middle portion, plan ahead for the third segment and make any adjustments 'on the hoof' given experience in the first third
e. for everyone there is a break from the usual lecture pattern.

One potential problem is that you may feel you do not have enough time to make each section meaningful.

Mindmapping

A **mind map** is a diagram used to visually outline information. A mind map is often created around a single word or text, placed in the center, to which associated ideas, words and concepts are added. Major categories radiate from a central node, and lesser categories are sub-branches of larger branches. Categories can represent word, ideas, tasks or other items related to a central key word or idea.

Encourage students to create a shared mindmap e.g. as part of a revision class. They can (usually) take photos on their phones to take their own copy away or you could post photos on the course VLE for all groups to see.

A commercial example is from Tony Buzan: http://thinkbuzan.com/

Think, Pair, Share

This activity poses a question to students that they must consider alone and then …

Discuss with a neighbour before settling on a final answer and possibly sharing with the whole group. This is a great way to motivate students and promote higher-level thinking. A think-pair-share can take as little as three minutes (quick-response) or can be longer (extended response), depending on the question or task.

Reading

An interval with a focus.

Break up the lecture by stopping, calling a 5 minute break, and asking students to focus on a key piece of reading or image/diagram. Then ask them to share their main ideas about the passage with the person sitting next to them. Then the lecturer can sum up (with or without asking for feedback from the room). This sets up the next phase of the lecture session.

Students will need access to the item to be used, e.g. photocopies or establishing that all bring such resources on some form of device.

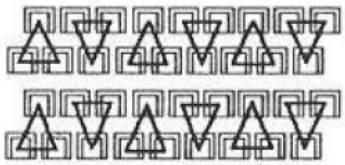
This has the benefit of being a different way to absorb information, mid-lecture. It encourages students to think about a key issue on their own and in pairs; gives the lecturer a breather/time to take stock and plan the next phase of the lecture.

Tiers

Lectures are often held in tiered lecture theatres where the seating is fixed. This may seem to work against flexibility. In fact, it is a very good situation in which to use Buzz groups/think-pair-share. Students are already sitting very close to one another and can easily form groups without having to move.

The students on rows 1, 3, 5 turn round to face those on rows 2, 4, 6, etc.

While it may be a bit chaotic the first time you ask students to form such groups in a tiered lecture theatre, they soon get used to forming groups quickly and quietly..



groups of three

groups of four

Demonstration

Because lecturing is the main teaching method on many courses, it is used for a wide variety of purposes, for which it is not always entirely appropriate.

A particular instance is that of demonstration. The lecture theatre is a suitable arena for demonstrations if your aim is to show to a large number of people in a short space of time something which is easily seen from a distance or is sufficiently contained that you can show this via a visualiser (some teaching spaces have this as standard, but there are also portable ones available) and in which students don't need to be involved.

If, however, there is a technique which the students need to acquire or if there are problems in getting a clear view, then other methods should be considered.

For instance, students studying microbiology had difficulties with the technique of streaking agar plates because staff were demonstrating it to large groups. When the staff made a recording with magnified close-ups of tile technique the problems ceased.

Theme summary

Perhaps the most difficult aspects of courses for students to perceive and learn about are the higher-order conceptual frameworks which structure the subject matter and the course itself. Often abstract and built upon a thorough understanding of the separate components of the subject (as presented in separate lectures) these overall themes can pose real problems for students especially in their note-taking. For example in a history course on "Contemporary Perspectives on Medieval Europe" it may be alternative analyses of social change which form these higher order frameworks, and the underlying themes in any particular week's lectures. Methodological issues and aspects of the philosophical basis of the subject discipline itself often form such themes.

Handouts which summarise such themes, and which point out those aspects of the particular lecture which bear on these themes, may be particularly useful to students, especially those new to the subject or to note-taking.

Media clip

A media clip can add a visual dimension to a session.

There are many sources for accessing and using media (e.g. from YouTube) or specifically for use in teaching e.g. Box of Broadcasts is a source of TV programmes available through the Library for use in lectures or for students to review.

There are lots of options for inserting a clip into a lecture and exploiting it meaningfully.

For example, play a short clip (2 minutes is often sufficient) and ask groups of students to either:

a. discuss the title and their expectations of the video BEFORE the showing;
b. narrate, commentate, or analyse AS THE VIDEO PLAYS -perhaps pausing in key places; or
c. review the clip AFTER it finishes?

Diagrams

Diagrams frequently feature in lectures. But they can be time-consuming to draw on the blackboard and time-consuming for students to copy down. They are often copied incorrectly or so scrappily that they are later impossible to interpret. This applies to diagrams more than to any other kind of information presented in lectures. The more complex the diagram, the more likely are mistakes. One way of dealing with this problem is to give students copies of diagrams, graphs, and so on, in handouts.

You may be worried that this will result in students' overlooking key features or forgetting them later because they didn't go through the process of drawing the diagrams themselves. In this case there are several things you can do to ensure that students interact with the handout diagrams:

a Leave the diagram incomplete or unlabelled, and require students to complete or label it following your instructions (or copying from slide of the diagram)

b Ask questions which depend on an understanding or interpretation of the diagram. These questions can be written on the handout

c Require students to work together to explain diagrams to each other or answer questions together

60 seconds

A minute long breather for the class which can be used in any lecture.

At any point through the lecture, stop and call for a ‘timeout’: “right there will now be a 60 second break, starting now!”. Students chat, eat, drink or stretch their legs. After 60 seconds, begin the next part of the lecture.

This is a simple, helpful and effective method. It changes the atmosphere for a small time (refreshing), breaks up students’ concentration span (healthy) and gives the lecturer a breather too (welcome).

You will need to consider whether you think 60 seconds is too short a time for a ‘timeout’ and whether students’ concentration is adversely, rather than positively, affected by a break.

“I experienced this tactic when I was a student. One lecturer did it quite regularly. It was novel and pretty basic – but the minutes break was welcomed by everyone involved.

Interactive Handout

Involve the students via interactive handouts. Lectures can be based on, and around, specially produced handouts. A typical lecture handout would be structured in line with the lecturer's structure. It would be designed so that in places students are just 'following' the lecture and taking notes in allotted spaces. In other places however, students would be challenged to interact with the handout – filling in boxes, adding to graphics, and in allocated spaces putting down their own thoughts on certain key matters.

Benefits are that:

a. it provides students with a reference-point and a helpful structure;
b. students are actively involved in the lecture – gets them thinking, talking and contributing around a nice variety of small tasks
c. students take on some of the responsibility for their learning as part of the lecture

Potential problems are the time it takes for the lecturer to prepare such handouts if they are radically different from the presentation itself; possibly more suited to more technical scientific subjects than those that are more discursive?

Worksheet

Test students at the end of a lecture, especially where complex information and detail needs to be grasped quickly.

Prepare a worksheet in advance and ask students, in pairs, to work through it in the last minutes of a lecture session. The questions on the worksheet would relate to issues raised in the lecture so far and can also act as a mini-comprehension exercise. The lecturer circulates and chats to pairs as they work through the worksheet; he or she then runs through the worksheet answers in the final minutes of the lecture.

This activity could be extended beyond this individual lecture to ask questions about a block of lectures.

Answers can be collected in class via a Personal Response System in class or via Moodle (real-time quiz in class or after the lecture as a questionnaire or a quiz which gives the option to provide feedback on students responses); the feedback from the lecturer could also be done via a vodcast or posting the lecturers version on to Moodle for students to self-check.

Benefits of this method are that it helps the lecturer to gauge students understanding and helps students to recap on key issues raised in the lecture.

One danger may be that this method 'trivialises' the learning or complexity of the content being taught.

Quiz

Break up the lecture with a short quiz to recap on key points or finish it by quizzing students on its content and related issues.

This can help to keep students engaged with the content and its connections to other things, e.g. what is currently happening in the news, or their own experiences.

Depending how this is administered, e.g. where answers are displayed in class with how many got it right/wrong it can inject a bit of healthy competition. Even if results shown are anonymous, students know what they answered.

It also enables the lecturer to gain a sense of how much students are taking in.

One issue is that a quiz can only really take place where there are key 'facts' or technical detail to absorb.

Think-pair-share (aka Buzz groups)

At regular intervals during a lecture, ask students, working in pairs or small buzz groups of 3-4, to discuss a point or issue, work on problem-solving tasks or specific exercises that are closely related to the main lecture themes and content. The lecturer can circulate and each students group can report back to the whole class, if small enough, or the lecturer can invite feedback from different points around the lecture theatre.

This potentially could involve students looking up primary data using smartphones/tablets/laptops as the activity does not require all students to have such technology, but to be sat next/near someone who does.

Benefits are that it:

a. gets students involved
b. breaks up the activities
c. fosters discussion as a legitimate part of lecture time
d. is more likely to get a response to a question in the large group situation as students have checked out things with each other first

Possible issues might be students not talking about the issue you want them to, instead about their weekend, or indeed not talking at all.

Study Diary

Post-session reflection activity.

Students supplement their note-taking *during* the session with focused reflection *after* it – written up in a special study diary (could be physical or on-line), often used to support students creating connections between their experience, the 'real world' and theories being explored.

The lecturer has the choice of:

a. is this a mainly formative (for supporting students learning) or summative (for checking students learning) activity
b. will you respond/comment on it or
c. is it private to the students; could they choose to share sections with you if they wish
d. does it carry any marks (e.g. a fixed percentage just for writing something; assessed against criteria/marking schema)

It is helpful for students to see examples of this style of writing as it is not generally something that they will have encountered before. They will be particularly cautious/anxious if marks are attached to this form of writing.

The rationale behind asking students to keep the diary, in whatever format, needs to be explained carefully.

Lecture-seminar

This is clearly dependent upon the number of students you have in your lecture and may need more structuring/planning if >25

All students are given a set reading to familiarise themselves with during the week preceding the session. The lecturer will ask three students to prepare for the class particularly thoroughly – they will facilitate the class.

The lecturer takes a back seat during the discussion, but if the three coordinators do their job properly, the same issues that would have been raised in the 'standard' lecture will be covered in the 'lecture-seminar' class.

The benefits are that:

a. it puts the onus on the students
b. frees up the lecturer to contribute when and where necessary, rather than all the time
c. enables more than one viewpoint to be aired in a 'lecture' session.

Potential problems are that much depends on:

a. the three students asked to lead the session (and are these volunteers or does this responsibility move around the group?)
b. the ability of the lecturer to limit his or her interjections
c. how this fits or clashes with any accompanying seminars

The three most important things ... for students

Earlier (see item 27), this method was suggested as a means of summarising the lecture at its close in order to highlight its most important features. This same device can be used to check on student learning. You could say, "Right, that's the end of this week's lecture, but before you go I'd like to Check whether I've got my main points across. I'd like you all to write down the three most important things about this lecture: those three things that, if you forgot everything else, would capture the essence of the lecture for you. You have two minutes".

While students are doing this you write down what you think are the three most important things on an overhead projector transparency. When the two minutes are up you display your transparency and briefly explain your three points and why they are the most important. You then ask for a show of hands: "Who, honestly, has written down all three of these points? Who has written down two? Who one? Who none? What other points did people consider important?"

If this seems too threatening to students you can:

a. emphasise that what is on trial is your own competence as a teacher rather than their competence as learners;
b. ask for their points before revealing your own;
c. collect up students' written statements to read in private;
d. emphasise the scope that exists for alternative perspectives, different conclusions, etc.

This exercise can be very salutary.

Generating student questions

Ask students to write down one or two precise questions on the lecture material so far and then share these questions with two to four people around them, then ask for questions from the whole group.

Start with a test

Starting a lecture with a brief test can serve a variety of very useful functions:

a. Tests of material dealt with some while ago can serve to review and rehearse that material so that it is established more firmly in your students' memories.
b. When preparation for the lecture is important. giving advance warning of a test on the prepared material will make it more likely that-preparation is undertaken thoroughly, and will highlight weaknesses in preparation.
c. Where the structure of the subject matter is hierarchical and your lecture requires previous knowledge, a test can provide you with feedback on whether students have this knowledge.
d. Students corning straight from a lecture on a different subject may need a minute or two to re-orient themselves to your subject and focus on those ideas which they will need in order to make sense of your lecture. A demanding task such as undertaking a test can function very effectively, and quickly, to help students to get their ideas together on your subject.
e. In selecting questions you can highlight links between this lecture and previous topics you have examined.
f. By asking questions which students will not be able to answer you can highlight what they do not yet know, and so indicate what this lecture has to offer.

Items (e) and (f) can be used together *as* a way of making clear what the lecture will be about.

Such tests can be set by displaying a slide, or by using handouts (see 16 Questions) and students can be asked to work on these questions alone or in small groups (see 38 Buzz and 39 Problem centred and syndicate groups). If you want to save time, then use multiple choice questions rather than open·ended questions where collating the answers takes more time.

Finish with a test

Finishing with a brief test is a good way to round off a lecture and provide students with feedback on how much they have understood and learned in the lecture.

Such tests also have other uses:

a. In answering test questions students are reviewing the lecture and going over the ground again, reinforcing their learning.
b. Test questions which cannot be answered demonstrate to students where follow-up work needs to be undertaken.
c. Tests can be set which are intended to be tackled during a subsequent tutorial, or which are intended to be tackled during the last few minutes of the lecture but discussed during a subsequent tutorial. This provides continuity with the tutorial.
d. The test can be handed out at the start of the lecture with the instruction: "In the last five minutes I'll ask you to answer these test questions. So keep them in mind while I'm lecturing and think about how what I say can be used to answer them". This can help to establish the objectives of the lecture and to focus students' attention on what matters.

Such tests can be set in handouts (see 16 Questions) or on slides. Students can tackle them alone, or in small groups (see 38 Buzz and 39 Problem centred and syndicate groups). Answers can be provided verbally, on slides, on flipcharts, by asking individuals to check with their neighbour, in subsequent tutorials, or at the start of the next lecture. A test can be re-administered at the start of the next lecture as a way of linking the lectures (see 50 Start with a test).

Creating connections: opening questions

Start a lecture with an opening question to help students exercise their prior knowledge of the lecture's subject matter

E.g. Take a moment to think about what you know about the sun's energy?

Give students a few moments to think then ask a few students for responses

Connects existing knowledge with current topic

Creates focus on the lecture topic

Flagging

Flagging is explaining what you are doing, and why. Teachers often introduce an activity or the next stage of a session without flagging it, assuming either that students already know what it is they are supposed to do and what they are supposed to get out of it, or that students don't need to know: all they have to do is follow instructions. But people's ability to undertake tasks depends crucially on their understanding of the task - and not just their understanding of what the task is, but of why it is a sensible or useful thing to do. Many of the suggestions in this book may need thorough flagging the first few times they are used or students may feel hesitant and reluctant to engage in the suggested activity.

For example, you might want to introduce a break into your lecture- something you haven't tried before- and say, "OK, stand up, stretch your arms and give a big yawn". This is likely to be met with embarrassed giggles and not much movement. To flag this would be to explain, "You've been sitting still in this gloomy, stuffy room for 40 minutes now. It may help you to be comfortable and to stay alert for the next 20 minutes if you use the next minute to move around a bit. Stand up, stretch your anns, have a good yawn, try anything you like to release the physical tension and relax your muscles. I'm going to do the same".

If you wanted to introduce a buzz group exercise (see 38 Buzz groups) you might say, "Now, in pairs, I want you to look at the map I'll project upon the screen and decide what Christaller's theory would have to say about the location of the towns". For students unused to such activity during a lecture, and unused to working with one other student, and certainly unsure whether this was some sort of trick test, this might be a difficult task to get going on. To flag it might involve explaining, "It's important that you are able to apply Christaller's theory to specific places and I need to know whether you are able to do this before I continue. So I'm going to set you a very brief task to do. It might be difficult to get going on your own so work together with your neighbour".

It is probably better to be over-explicit in your flagging than to assume your audience already knows why you are doing what you are doing.

Body Language - Creating an Impact

It's not what you say – it's the way that you say it! Body language can tell you a great deal about a person. Eye contact, posture, gestures, facial expression, voice tone and volume and breathing can all give out messages.

Your students will form an impression of you based on:

- Your appearance and mannerisms (visual)
- The sound of your voice (vocal)
- What you actually say (verbal)

If you are well prepared you will feel more confident and in control, and your students will sense it.

You also need to watch the body language of students, as this can give an indication regarding whether they are understanding the lecture. However it is more useful to make the lecture interactive by asking students questions, to gauge whether they are following the lecture well.

Eye Contact

Your eyes are a really important feature. Even with large groups ensure you look around the room, but avoid fixing your eyes on anyone person. Good strong eye contact that moves around the group will make you appear confident and in control. When lecturing to a large group mentally divide the room into four sections and ensure that you look at all sections. Frequent glances to the ceiling and or floor can indicate nervousness.

Your Voice

The sound of your voice plays an important part in the impression others form of you. Some people naturally develop a good speaking voice, but we can all improve and make our voice more effective, ensure your voice can project to the back of the room. If students cannot hear they will switch off and then there becomes a tendency for students to talk through boredom, which then distracts other students. If you have difficulty being heard, use a microphone.

Vary Pitch, Tone and Volume

When speaking to a large group you need to add colour and interest to what you are saying. Try taping yourself and play it back. Try to emphasise important words and phrases but don't highlight too many. Use pauses for emphasis and effect. Watch key presenters on the television and listen to the radio. What makes for an interesting voice and what are some of the tips and techniques that newscasters use?

Notes

It is unlikely that you will be able to give a lecture without notes. Avoid writing long and copious notes and then reading them like a script. You are better writing down key words and phrases so that when you glance down you can quickly see where you are, and what comes next. You could use one of the following methods.

Conventional Notes - These could be written notes on A4 paper or card with a highlighter pen to pick out the main points.

Index Cards - Use a card for each main section. Numbering the cards and fastening them together prevents you losing your place, or the order, if they are dropped.

Structuring content

Hierarchical

This, commonly used, type of structure might be found when the lecture is concerned with listing a series of related entities and describing their features or properties. For example, it might be a series of diseases with their symptoms, investigations and treatments; a series of organisms with their anatomical features; a series of political leaders with their backgrounds, policies and achievements. The overall structure might concern itself with comparing and contrasting the various entities.

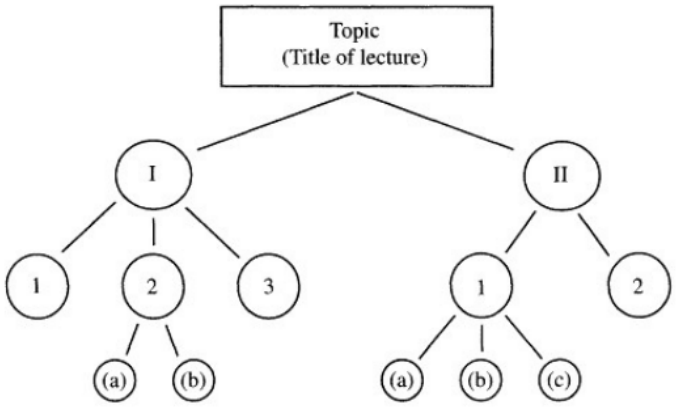


Figure 7.1.
An example of the classification hierarchy form to show 'links'

Sequential: a then b then c then d…

This is possibly the commonest type of lecturing structure, in which the lecturer goes through a simple sequence of related sub-topics that underpin the main topic and form a logical and coherent 'narrative' with a specific conclusion. Care needs to be taken to ensure students are understanding each progressive step.

Process: a then b then c then d then a

There are cyclical processes to be described in biochemistry, ecology, geology, economics and many other disciplines. Using the sequence of components within the process itself will provide a logical and coherent lecturing framework.

Chronological

Clearly temporal and historical sequences provide a ready-made framework for structuring lectures. History itself or the development of a scientific or technological theory or process can be structured in this way.

Spatial

The spatial relationships between entities is a useful teaching framework. Anatomy and embryology can be taught in this way but other subjects involving spatial relationships such as geography, architecture or engineering can benefit from this approach. For example, in anatomy the three-dimensional structure of a limb could be described in a sequence that might build up from the skeleton, then muscles, then blood supply and nerves and finally the layers of skin and subcutaneous fat. In geography a country might be described in terms of its major cities, rivers and mountains and the relationships between them. In architecture the design of a medieval cathedral might be described in terms of the spatial relationships between its major structural features such as apse, nave and arches.

Comparative: pros and cons, advocacy and controversy

Some very stimulating learning can be generated by setting up a debate between competing ideologies, concepts, methods, procedures or techniques. The lecturer can give the case or evidence for one and then shift to the other side. This is an ideal situation for student involvement and students might be asked to contribute to the debate or vote at the end. If another lecturer is available then the two sides of the argument can be delivered by two different people, turning it into a genuine debate. The technique can also be used for other dichotomous entities such as comparing the normal with the abnormal in medicine.

Induction and deduction

The process by which observations, facts and evidence are synthesized together to form theories, rules and laws is known as induction. The opposite process by which theories and rules are used to predict and calculate facts about the world is known as deduction. Both processes generate inductive and deductive reasoning and can be used as the basis for structuring lectures. For example, an inductive teaching structure can be used to show how facts and evidence eventually led to the development of a theoretical framework. On the other hand, a lecture might begin with the exposition of a theory and then show how it can be used to deduce or predict specific facts about the world. The implications of these two forms of reasoning in developing explanations will be discussed below.

Problems and case studies

Inductive and deductive reasoning are brought together in the hypothetico-deductive system that characterizes scientific, technical and clinical diagnostic reasoning used in problem solving. Problems and case studies are an ideal vehicle for structuring teaching episodes as they bring together conceptual understanding and reasoning with real-life, relevant situations. For example, a clinician absorbs the symptoms and signs of illness during history taking and examination and, by means of induction, comes up with hypotheses about what the problem might be in the form of a set of differential diagnoses. In order to test the validity of the diagnoses and to differentiate between them, further examinations and investigations are carried out based on possible deductions from the hypotheses. On the basis of the results some hypotheses are eliminated, and so on, until a final diagnosis is arrived at. The same process is carried out by a car mechanic or electronic technician in attempting to diagnose a fault.

Lectures structured around problems and case studies might come at the end of a series of more conceptually orientated lectures but they provide a valuable opportunity to synthesize and summarize many key ideas while emphasizing important reasoning processes.

Narrative

Beginning -> Middle -> End

Or

Context -> Content -> Closure

False Hypothesis

A hypothesis is proposed, or series of statements made, at the start of the lecture. The rest of the lecture is spent disproving or arguing against these initial points. This needs to be used with care, as students can sometimes miss that this is a false hypothesis and not realise that you are arguing the opposite, particularly if they are catching up via Moodle and any posted PowerPoint slides/lecture notes.

Reference list

This collection of ideas for teaching in a lecture setting has been drawn from the following sources:

Bligh, D. (2000). What's the use of lectures? (5th ed., Jossey-Bass higher and adult education series). San Francisco: Jossey-Bass.

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Haynes, A., Haynes, Karen, Habershaw, Sue, Gibbs, Graham, & Habeshaw, Trevor. (2012). *53 interesting things to do in your lectures (5th ed., Professional and higher education). Wicken, Cambridgeshire, England: Professional and Higher Partnership.*

More ideas for lecturing in this section of the Continuing Educational Development Leganto Resource list.