THE ECONOMICS NETWORK

Improving economics teaching and learning for over 20 years

Lectures in Economics

CONTENTS

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UPDATED VERSION
John Sloman, March 2016

FURTHER UPDATED VERSION
John Sloman, January 2024

https://doi.org/10.53593/n3879a

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1 Introduction

"The first duty of a lecturer: to hand you after an hour's discourse a nugget of pure truth to wrap up between the pages of your notebooks, and keep on the mantelpiece forever." – Virginia Woolf

"College is a place where a professor's lecture notes go straight to the students' lecture notes, without passing through the brains of either" – Mark Twain

"Academic chairs are many, but wise and noble teachers are few; lecture rooms are numerous and large, but the number of young people who genuinely thirst after truth and justice is small." – Albert Einstein

> *"Some people talk in their sleep. Lecturers talk while other people sleep"* – Albert Camus

> *"When I give a lecture, I accept that people look at their watches, but what I do not tolerate is when they look at it and raise it to their ear to find out if it stopped."* – Marcel Archard

> *"Like all people who try to exhaust a subject, he exhausted his listeners."* – Kingsley Amis

> *"The best teacher is the one who suggests rather than dogmatises, and inspires his listener with the wish to teach himself."* – Edward Bulwer-Lytton

> *"My lecture was a complete success, but the audience was a failure." – Anon*

Lectures have been employed for hundreds of years as a platform for disseminating ideas and knowledge and for guiding and motivating students, and they continue to be a cornerstone of higher education practices today. The traditional lecture can be defined as the one-way transmission of course content from academics to students, involving a series of presentations, usually with visual prompts and aids.

Today, however, classes delivered in lecture slots come in many different forms, from the traditional to highly interactive sessions. The term 'lecture' nowadays encompasses a range of styles, approaches and formats that will be investigated throughout this chapter. Some of these involve considerable student participation.

During COVID lockdowns, lectures were delivered online, whether in real time or pre-recorded. When classrooms were re-opened, although most universities returned to in-person lectures, many also delivered some lectures online or made recordings of the lecture available to students through lecture capture software. Some universities had already made recordings of lectures available prior to COVID-19.

In terms of student learning, the most successful lectures have more than a mere dissemination role. If their intention were merely to provide the students with basic information on the course, then there would be good reason simply to abandon them and provide a competent set of notes in their place. Lectures should also motivate and challenge students and give them insights. This is elegantly summarised by a student who attended Alfred Marshall's lectures at the University of Cambridge at the turn of the century:

> "He was certainly a unique teacher. He seemed to grip the mind of his hearer and force it through unaccustomed exercises, with many a violent jolt and breathless chase. He loved to puzzle and perplex you and then suddenly to dazzle you with unexpected light. 'Ages of darkness and moments of vision', was one description of his lectures, I remember. But the vision was worth it, and was not to be appreciated without the preliminary bewilderment…. What we brought away from Marshall's lectures was certainly not any ordered knowledge of economics, not enough, as he had predicted, for passing an examination, but perhaps an awakened interest, a little more insight, the memory of some moment of illumination and a sense of the importance of economics." (As quoted in **Groenewegen 1995, p.314**)

This quotation captures a key potential difference between a lecture and a textbook exposition. Of course not everyone is capable of holding an audience spellbound throughout a lecture, especially when it is part of the routine of learning. Nonetheless, lectures can be used as an effective means of promoting student learning even if the lecturer is not inspirational. However, they can also be tedious and of little benefit to students. In large part, the success of a lecture depends on how engaged students are and whether it is providing an active learning environment.

This handbook chapter will investigate the costs and benefits of different types of lecture and suggest ways in which the traditional lecture can be improved. Although the focus of the chapter is on lecturing, it is not

considered in isolation from the other teaching and learning formats that are likely to accompany and complement it.

1.1 Opportunities provided by lectures

Lectures provide key opportunities for students to learn in an efficient way about the subject they have chosen to study. The lecture typically conveys and prioritises information about the subject in a structured way and in a relatively condensed format. It can highlight what is important to learn and understand and provide a framework for the student's own work.

It can also enthuse students. The good lecture leaves students with not just an understanding of key theories and applications, but also the motivation to find out more.

Students are exposed, most likely for the first time, to a professional scholar who may be a researcher at the forefront of that aspect of the discipline. Lectures provide a traditional link between research and teaching. They help to preserve a culture of learning in higher education in which undergraduate study is viewed as an induction into an academic discipline – a way of viewing the world.

There are also clear benefits to the lecturer. Assuming that an academic is lecturing on a similar topic each year, the up-front costs of preparing a set of lectures are offset by their re-usability. The lecturer can also improve on the lecture in the light of experience of the previous year.

Lectures have additional benefits for the institution. They are seen as making an efficient use of the lecturer's time, since they allow teaching to take place in classes with a very high student/staff ratio. This has become an increasingly compelling incentive when pressures on institutions in terms of research output and accountability to students and other stakeholders have grown. A greater use of lectures, or of larger lectures, perhaps supplemented by recordings of the lectures being available to students, allows resources to be released to address these other issues – either by reducing lecturers' timetables or by releasing time for more small-group work, personal tutorials or online tuition.

1.2 Inherent problems with the traditional lecture

Notwithstanding the apparent benefits detailed above, newer approaches to teaching and learning, such as problem-based learning, are increasingly being introduced on the grounds that, even for an equivalent investment of staff time, the learning outcomes of students are far improved.

The use of techniques that aim to generate a greater amount of student involvement is of course nothing new. Tutorials, seminars and other variations on student-centred learning have long been used to complement lectures. However, the justification for abandoning or reducing the number of traditional lectures on a course typically focuses on two criticisms: that lectures are a poor medium, first for conveying information and second for developing student understanding and engagement.

Conveying information to students

Are lectures an efficient means of conveying information to students? According to **Miller (1956)**, the average number of items that can be held in short-term memory is 7 (±2). Therefore, if students do not have significant

time to process new information one of two things happens, either previous information is displaced or the new information is lost. Lectures that proceed quickly simply do not give students sufficient time to process information.

Similarly, the ability to concentrate for an hour or so while taking adequate notes is not something that can be taken for granted. Indeed, listening and note taking can be mutually exclusive activities, especially for more inexperienced students. It cannot be assumed that an hour-long lecture will result in an equivalent sum of learning taking place within a student's head.

This problem can be compounded by the problems of a crowded curriculum. As new theories, research findings and policy initiatives emerge, space has to be found within the syllabus to accommodate them, and not always at the expense of existing content. If more and more content is crammed into a series of lectures, it may encourage the lecturer to do little else but talk from the front from start to finish. The logical consequence of such practice is that the pace of lectures is forever quickening to ensure that the expanding syllabus is covered. A lecture could hardly be considered successful if it 'covered' the appropriate part of the syllabus and yet students retained little of what was said or were not guided in their private study.

Students are also more likely to remember information when it is structured in a logical fashion and if it is demonstrably meaningful to them. This again highlights the important of context to learning. Students need to comprehend why they are being taught what they are, and how they will subsequently be assessed on it.

Developing student understanding

To judge the 'success' of a lecture, it is important to identify its intended learning outcomes. Learning outcomes are often specified in module or course descriptors or handbooks. However, caution should be exercised in judging the success of a lecture against them, since these parts of the documents have often been prepared to meet university or national quality assurance requirements, and compliance in this process by lecturing staff does not necessarily mean that the specified learning outcomes are the most appropriate or are even the ones that the lecturer would choose to identify.

In addition, whilst a lecture's success should be judged in terms of what students gain from it, it does not follow that lectures which students consider successful are necessarily good lectures. Students may prefer lectures that allow them to take notes which can be used directly in preparing for examinations or other forms of assessment. If their objective is to maximise marks subject to a time constraint, or to minimise time commitment subject to achieving a target mark, then this will almost certainly be the case. Similarly, a lecture might be very entertaining, and for that reason popular with students, and yet be a poor learning medium. Students are also likely to show a preference for the teaching format they are familiar with, as is equally the case with lecturers.

Assessment is clearly an indicator of student learning and hence of the success of lectures. But even if it were possible to separate the contribution of lectures from other learning media to assessment performance, the assessment itself may not capture the extent to which students have acquired and developed an understanding of the subject matter. To gauge this, it is necessary to consider a theory of learning first developed by **Marton and Säljö (1976a, 1976b)** and since elaborated by **Ramsden (1992)**, **Biggs (1987, 1993)**, **Entwistle (1981)** and **Haggis (2003)**. In these studies an important distinction is made between surface, strategic and deep learners. Surface learners are characterised as focusing on memorising words, formulae and theories rather than building relationships and connections. Surface learning is encouraged by:

- A heavy workload;
- An excessive amount of course material;
- A lack of independence;

- Assessment methods that emphasise recall and create anxiety;
- Poor or little feedback on progress;
- A lack of interest in the subject.

Deep learners seek to relate theory to practice in a range of different contexts. They are able to organise their impressions into a coherent whole rather a set of disassociated facts or formulae. Deep learning is encouraged by:

- Teaching methods that build on students' existing knowledge and experience;
- Active involvement by students in their learning;
- Students having choice over content and study methods;
- Long-term engagement with the subject.

Strategic learners will adopt whichever approach they believe will maximise their grades. If they believe, rightly or wrongly, that the form of the examination rewards memorisation of disparate facts, they will adopt a surface approach. If they believe that the examination will reward a holistic understanding of key ideas and how these apply in different circumstances, they are more likely to adopt a deep approach.

Most students cannot be so readily pigeon-holed, displaying characteristics from two or more categories at any one time and perhaps changing their preferences over time. Nonetheless, this theory exemplifies the potential shortcomings of a wholly didactic model where it is assumed that what is not said is not learnt.

The purpose of this chapter is not to debate at length the merit of this model (**further reading references** are provided at the end), but to establish that the intention of any economics course should be more than simply to allow students to adopt surface-learning strategies that promote the accumulation of transient non-contextualised knowledge.

Finally, there is the issue of the diversity of ability and prior experience of students. This is especially a problem at level 1, where lecture groups tend to be larger, where some students are new to the subject and others have A-level Economics and/or Maths or equivalent, and where exit routes can vary from Single Honours Economics degrees to degrees where no further economics will be studied beyond level 1. How can a traditional lecture cope with diversity? To which students should the lecture be pitched? What back-up support will be necessary for the weaker students and what additional learning activities will stretch the stronger students?

2 Improving lecture practice

2.1 Student preparation for the lecture

In some cases, it may be appropriate for students to come to a lecture 'cold', especially if it is an initial scene-setting lecture. Generally, however, students will gain more from a lecture if they have done some preparatory work. You could assign them reading or specific tasks. If so, you would probably have to address the question of

incentives for students to do this work. This could amount to simple exhortation in previous lectures, or in handbooks or online information, where the importance of the preparatory work was stressed. Alternatively, it could be built into a more formal process of study, leading to some specific individual or group work by students.

Top Tip 1

Giving preparatory work for the lecture helps students to see the relevance of the lecture and they will probably learn more.

Prior work could include:

- Using the Internet to provide background information. For example, if you were about to introduce the theory of international trade, you could get students to find out about recent debates and issues, such as trade disputes, the agenda for WTO meetings or the views of various interest groups. Such groups could include the US administration, the European Commission, particular industries (such as farming, aviation or steel), environmental groups, or various emerging countries' interests (see for example, **www.oneworld.net**). If you were about to look at competition policy, you could ask students to look at the summaries of Competition and Markets Authority reports on **https://www.gov.uk/cma-cases**.
- Revisiting relevant theory covered earlier. For example, in the case of trade, the students could be required to revise production possibility curves, opportunity cost or general equilibrium theory, depending on whether the teaching is at introductory or intermediate level. In the case of competition policy, students could be required to revise relevant parts of the theory of the firm. The lecture could start with a quick 'quiz' using multiple-choice questions (see below on the technology for quizzes and tests in lectures).
- Asking students to identify a set number of issues to do with the topic. This will help them to contextualise the material and see its relevance. These issues could be posted to a discussion board or to a class WhatsApp group (see **Enakrire, 2022**), so that other students could read them. For example, as preparation for a trade theory lecture, you could ask the students to identify recent trade disputes and the arguments used by the various parties to justify their stance, or you could ask them to consider the arguments for and against providing protection for a specific ailing export industry.
- Assigning reading to be completed before the lecture. This could be an introduction to theory or relevant evidence, perhaps from a textbook or an article. A brief quiz on this could be given at the beginning of the lecture so as to provide an incentive for the students to do the work.

In all the above cases, clear guidance will need to be given to students about what is required of them. This could be given in student handbooks, but should probably be reinforced by having a discussion early on in the course in seminars about the role of lectures and how students can maximise the learning benefits from them. It would also be useful to remind students periodically in lectures about these expectations.

2.2 Effective presentation

Students are likely to learn more if a lecture is well structured and well presented. Not every lecturer has a charismatic personality, but students can still be engaged and find the lecture an effective learning experience if thought is given to the structure and method of presentation. This section first reviews three issues in planning the structure of a lecture: aims and learning objectives; overview and clarity of structure; use of examples and pace.

The second half of the section examines three aspects of the method of presentation: presenting graphs and equations; displaying material; and using videos.

The section concludes with some observations on dealing with disruption.

Aims and learning objectives

It has become commonplace for lecturers to give the aims and learning objectives at the beginning of a lecture, usually in the form of a PowerPoint slide, an overhead transparency (OHT) or a sheet of paper displayed on a visualiser. One of the main drivers for this has been university ‘quality’ procedures and accountability to external bodies, such as the QAA, and the stress placed on making intended learning outcomes transparent.

Whilst it is good practice for students to see the purpose of what is to come in the lecture and what they are supposed to learn, beginning the lecture with a bullet list of aims and learning objectives in educational jargon can be a 'turn-off' for students. It is important to communicate in 'student-friendly' language. For example, if the learning objectives of a lecture include an understanding of a particular economic theory – its properties, its assumptions, how it can be applied and what its limitations are – then state this as such, rather than in terms of, say, the development of cognitive or analytical skills. It may also be helpful to understanding the theory by looking at the problems and issues it can address.

The format of lecture objectives also gives students an indication of the approach to learning that is expected of them. For example, an objective in the form ‘Movements along and shifts in the demand curve’ implies that students are required to memorise a list of causes and how to depict these on a simple diagram. An objective ‘Analyse changes in the demand for consumer products using a market demand curve’ implies that the focus of assessment will be on understanding examples of economic behaviour in practice. The signals communicated by these objectives may indicate to students whether surface or deep learning is expected.

Top Tip 2

Students need to comprehend why they are being taught what they are and how they will subsequently be assessed on it.

Overview, contextualising and clarity of structure

At the start of a lecture it is important to give students a sense of how the lecture fits into the syllabus and how it follows on from the previous lecture. A ‘lecture map’ on, say, a PowerPoint slide or OHT can be used to outline the structure of the lecture in terms of main topics, issues and theory. This summary can be referred to as the lecture progresses, helping to retain and reinforce the students' grasp of the lecture's structure. This can also be referred to at the end as part of a brief summary of what has been covered.

Top Tip 3

If you give the students a 'lecture map' on a PowerPoint slide or OHT, this can be referred to as the lecture progresses, thereby helping student retention and reinforcing their grasp of the lecture's structure. This can also be referred to at the end as part of a brief summary of what has been covered.

Use of examples

Brief up-to-date examples, or appropriate historical examples, can make the lecture much more interesting for students and help them to see the relevance of theory. Careful thought should be given to the number and nature of examples. Too many examples and the students might not be able to 'see the wood for the trees'; too few examples and the material could appear dry and disconnected from reality.

Examples could be very short: for example, reference to some current news item or to some real examples of something (e.g. of actual firms when discussing market structures); or for a quantitative lecture a very brief worked example. Students' understanding of economic concepts is likely to be much better if they can relate them immediately to the concrete. There is an opportunity cost of using examples in terms of time not spent covering additional material, but again, if the success of a lecture is to be judged in terms of learning outcomes, this may be a cost well worth incurring.

Pace

Pace is crucial to the success of any lecture. It is very easy for lecturers to imagine that if something has been said, then it has been understood and absorbed by students. Part of this mindset is the perception of students as receptacles: ‘At the beginning of the lecture, you lift the lid on students' heads, pour in an hour's worth of knowledge, close the lids and the students walk out an hour wiser than when they arrived’. Although we all know that this not how students learn, we are frequently faced with the dilemma of how to ‘cover all the material’ in the lecture. Too many lecturers, when faced with the approaching end of the lecture and still having a lot of material to cover, talk faster and faster. The problem stems from two main sources.

The first is that courses have become tightly structured to meet the requirements of auditing and quality assurance. For example, each lecture’s content might be laid down in the course handbook. This can remove the flexibility of being able to vary the pace and content in response to student feedback or current events.

The second, as mentioned in section 1.2, is an increasingly crowded curriculum. Whilst we strive to keep courses up-to-date and include new theoretical developments, policies and applications, we are reluctant to delete an equivalent amount of old material. Take the case of a core level 2 Macro module. If we want to look at the development of macroeconomic theory, do we include both classical and Keynesian analysis, the monetarist critique, the rational expectations revolution, new classical theory, real business cycle theory, new Keynesian theory, including DSGE theory, post-Keynesian analysis, models to incorporate inflation targeting, such as the Romer model with aggregate demand considered as a function of inflation rather than the price level (the dynamic aggregate demand and supply model) in addition to the traditional AD/AS model, the lead up to and aftermath of the financial crisis, the reassessment of theory and policy in the light of the crisis, the importance of balance sheets and regulatory frameworks, the experience of quantitative easing and then quantitative tightening, COVID interventions and implications for public-sector debt and fiscal policy, and so on? In other words, do we keep adding new developments to the existing course? Our module specifications say that in lecture x we will cover topic y, and yet in topic y we want to include more and more each year. What is the solution?

The solution is not to speak faster and faster! Students would almost certainly end up learning less, not more. Either you have to reduce the syllabus content so that it can be covered in sufficient depth and at an appropriate pace within the lecture time, or you have to abandon the notion that the lecture should be used to 'cover' all the material. If this latter is to be the solution, then you have to plan carefully how the lecture fits in with the remaining parts of the students' learning. Is it to be used to introduce topics, or to go through the core theory, or to give pointers or examples not available elsewhere?

Pacing is not just about covering an appropriate amount of material. You will have to decide just what you want students to *do* in lectures. If you merely want students to copy down notes, it would probably be more efficient to give them the notes as a handout, or post them on your intranet (unless a key purpose of the lecture is for students to learn the skills of rapid note taking, in which case some specific instruction in the process would probably be a good idea).

Presumably, you will want students to understand what you are covering, to see its relevance and to be motivated to learn more. In that case, the pacing must take account of this. The planning and delivery of the lecture will need to balance demands on students' writing, listening, watching and understanding. It is too easy to put up a completed OHT, a sheet full of material on a visualiser, or a complete PowerPoint slide and then start talking

about it straight away. What are the students to do? Are they to copy it down or concentrate on what you are saying? If you want them to take something down, it might be best to pause while they do so, especially if it is something they are unlikely to grasp immediately.

An important part of pacing is recognising the attention span of students. This tends to drop off quickly after 20 minutes, unless the students are particularly excited or fascinated by what you have to say (see **Bligh, 1998**). Part of the solution lies in varying the pace through examples or anecdotes when attention is likely to flag. You could vary the use of visual materials, so that sometimes the students would be concentrating on them and at other times on you; sometimes copying things down and at others just listening or composing their own notes. The key is to inject light and shade: to vary the tempo, the nature of the material and what is required of students.

Alternatively you could move away from the lecture being solely a talk and engage the students in various activities. Some suggestions are given **in section 2.3**.

Presenting graphs and equations

If you are using PowerPoint slides, an overhead projector or a visualiser, an effective way of presenting graphical or mathematical material is to give the students a half-complete diagram or proof, which students complete in the lecture. For example, if you were presenting a model which shows an initial equilibrium position and then the effects of a shift in one or more curves, you could give the students the initial position on a handout (with or without the equilibrium marked) and ask students to complete the diagram. This is particularly useful for complex diagrams, such as general equilibrium diagrams. Not only does it save time by avoiding the need for students to copy down the initial part of the diagram, but it also ensures that students can focus on the key points you are making. It is also likely to mean that the finished diagram that the students are drawing is accurate.

This approach allows learning to be an active, yet efficient, experience. Learning is likely to be more active if you ask the students to complete the diagram or proof first and then you go through it. But even asking students to copy down the additional material is likely to make learning more active and effective than students rushing to copy a complete model. If they are copying the key parts (e.g. the effects of a shift in a curve), they have more time to reflect on what is happening in the model.

Resources provided in this way may cause problems in terms of cost and/or equal opportunities. Can your department afford to make copies free to students? If you make them available electronically, what will you do about students with no personal access to a PC or a printer, or who simply forget to print them off beforehand or cannot be bothered? Is it acceptable to sell these materials to students? One solution adopted by several departments is to produce detailed course handbooks with lecture outlines. These outlines could contain the partially complete diagrams and proofs. The handbooks could be sold to the students at cost, with all students expected to purchase them. However, this practice incurs up-front cost in preparation time, and reduced scope to amend the teaching programme in response to student feedback.

Displaying material

Whether using the whiteboard/blackboard, a visualiser, OHTs or PowerPoint slides, it is important to give careful thought to what you want the students to do. In lieu of any other guidance, students will assume that you intend the displayed material to be copied down. If used well, visual materials can considerably improve learning by providing a clear structure for the lecture. If the structure remains on the screen, or is referred back to at the start of each new section, students will find it easier to see how the various parts of the lecture are related, even if their attention wanders for a period of time. Similarly, if students lose the thread of an argument, they will be able to pick up the thread from a ‘lecture map’ presented on a slide or board.

But how much material should you display? If you display a lot, students will spend a relatively large proportion of the lecture simply copying things down. Is this an efficient use of their time? Would it be better to give them a

handout or post the material on the intranet or VLE (such as Blackboard or Moodle)? If you do want them to copy things down, then you must allow enough time for them to do this.

An advantage of using a board is that your writing speed imposes a natural brake on the rate at which students have to process new information. However, if you are talking while you are writing, unless you have a lapel microphone, students will have great difficulty in listening to what you say, copying what you write, and adding notes on what you are saying. Also, some students may find difficulty in reading your handwriting, or in hearing what you say if your back is turned while you are writing. To some extent this can be overcome by writing on a sheet displayed on a visualiser, but students may still struggle with some lecturers' handwriting.

If you use PowerPoint slides or OHTs, the problem of note taking can be worse, as the slides are already complete. Too often, lecturers display a slide and then start talking about it straight away (see the section on pace above). What is the student to do: copy the slide or take down your comments? For experienced lecturers, this may sound obvious, but it is easy for all of us to fall into the trap of expecting students at one and the same time to copy a slide *and* to listen to our commentary on a slide and annotate their copy of it accordingly.

One solution to the time constraint is to give students your lecture slides in advance, whether in hard copy, or as a Word, PowerPoint or other file. If the slides are merely headings, the students can then make their lecture notes under them. Or you could use a two-column format, with your outline and/or diagrams on the left, leaving the right-hand column empty for student notes.

Top Tip 4

Whatever media you use, it is important not to display too much material and to give students time to take things down.

If you are using PowerPoint, you can animate your slides so that bullets or paragraphs or stages in a mathematical demonstration appear one at a time. Similarly you can animate graphs by having lines appear one at a time. They can easily be made to shift in the required direction. A little playing around with the 'Slide show', 'Custom animation' feature can enable you to display diagrams in an interesting and effective way.

Increasingly, textbook publishers provide OHTs and/or PowerPoint files of lecture outlines. While these can save you time in preparation, there is the danger that they can make the lecture too 'pre-programmed' in a way that does not necessarily match your style of delivery or the content you wish to cover. In this respect, PowerPoint files are clearly much more flexible than OHTs, since you can customise them to suit your particular lectures.

If you do use the animation features of PowerPoint, be careful not to make them too 'whizzy'. The animation should be designed to help understanding, by, for example, showing the direction of a shift, and not distract the students from the model's properties and the points being made.

It is also important, especially in diagrams, to make a consistent use of colour. For example, original lines could be in one colour, initially shifted lines in a second colour and further shifted lines in a third colour. Alternatively, one type of line (e.g. revenue curves) could in in one colour and another type (e.g. cost curves) in another colour, and so on. Shifted lines would be in a lighter or darker version of the original colour. Either scheme, if consistently applied, makes it much easier for students to understand what is going on in a diagram.

Use of videos during lectures

Many lecture theatres permit the playing of video files from a USB drive or streaming video clips through the lectern PC or laptop and data projector. Videos, if used with discretion, can add substantially to the impact of a

lecture.

Two important questions to consider in using videos are ‘What length of clip should I use?’ and ‘What are the best sources of video material?’ If the video is being used to illustrate a point, it is best to keep the clip to no more than five minutes. This change of media and pace can aid students’ concentration and help them to see the relevance of points you are making. Even with a short video clip, the relevance of the clip may not be obvious to all students. You may well need to introduce the clip so as to prime students about what you want them to gain from it.

Top Tip 5

Video clips, if used carefully, can considerably enhance student learning by helping to contextualise material through the provision of examples. By providing interest and variety in a lecture, they can increase student motivation and interest.

Sometimes you may wish to show a longer extract. For example, you may wish to use the video as a case study. There is a potential problem here. With the exception of videos made for educational purposes, the pace and structure of the video may make it difficult for the student to make notes. If this is the case, you might find it useful to display some bullet points on an OHP while the video is playing. These could help to make the structure of the video more transparent.

One of the most effective uses of video is to give a topical illustration of a point or to set the scene with something in the news. Probably the best sources here are news magazine programmes, such as *Newsnight* on BBC2 and Channel 4 News. Other broadcast sources include *Panorama* and *The Money Programme*. Alternatively, you could stream clips from news sites, whether from broadcasters’ sites or from newspaper sites. The *Financial Times* has a range of free streamable economics videos which are suitable for use in lectures.

Most universities hold an ERA (Educational Recording Agency) Licence. This allows free use of TV material for educational purposes. The licence permits you or any other university employee to record programmes off air at home or at the university, to make multiple copies (e.g. for depositing in the library) and to compile extracts. You can edit, but not adapt the recordings. You can show all or part of a programme, so long as it is for educational purposes. The recording should be labelled, 'This recording is to be used only for educational purposes'. Open University recordings require a separate licence. There is no licensing scheme to cover cable or satellite broadcasts and you are free to copy and show these. It is advisable to check with your university the precise nature of what you can and cannot show.

Dealing with disruption

Hopefully, you will not experience this. If you do, you need first to be aware of why the disruption is occurring. It is likely to stem from lack of student involvement and boredom. While it would be nice to think that you are so charismatic that this could never occur, the solution lies not so much in how good a performer you are, but rather in what the students themselves are being required to do in the lecture.

If they are merely being required to listen for an hour, they are very likely to get bored unless you are a superb entertainer. To keep students engaged, try the following (several of which are examined in more detail below):

- ensuring that they have a clear understanding of the structure of the lecture and its relevance to the rest of the module;
- changing the pace;

- giving students various activities (such as short questions to test their understanding);
- making it possible for them to take notes by not going too fast;
- making careful use of visual aids;
- illustrating points with examples;
- using video or audio clips (see above);
- giving them one or two short breaks.

Sometimes, students studying economics are doing so reluctantly, either because they had no choice (e.g. they are studying an economics module as a compulsory module on a non-economics degree) or because the subject has turned out to be different from what they had expected. The solution here is to focus on the relevance of the subject to their degree and more generally to important social issues. If they can see that economics grapples with real-world problems, and if what you are doing with them helps them to gain a better understanding of these problems and possible solutions to them, they are likely to be much more sympathetically disposed to studying the subject.

If, despite the above, students are disruptive (by talking, leaving the lecture, coming in late, etc.), then deal with it directly. If you ignore it, it will probably get worse. First try talking to the whole lecture group about your expectations of them and why 'good behaviour' is vital. Then, on any subsequent occasion when disruption occurs, address the culprits directly and, if necessary, ask them to leave.

2.3 Activities in lectures

An hour (or even 50 minutes) is a long time to listen and concentrate. As we have seen, concentration and retention rapidly diminish after 20 minutes. Not only should student learning be as active as possible, but also it should be efficient. Ideally, a student should be able to:

- Identify main points;
- Distinguish the important from the diversion;
- Identify when the same point is being presented in different ways;
- Perceive connections (e.g. between one theory or part of a theory and another);
- Relate examples to concepts and theories;
- Relate evidence to propositions.

These can all be aided by a careful use of activities in lectures and this section examines different types of activity that could be used. The inclusion of activities comes at the expense of time the lecturer would otherwise spend in talking to the students. The case for using activities is that the breadth and depth of students' understanding is increased even though the sheer quantity of information covered by the lecturer is reduced.

Top Tip 6

The more active the participation of students, the longer and better will they be able to concentrate.

Tests/quizzes

One of the most effective ways of making learning a more active process and helping students to check on their understanding and learn from their mistakes is to give them questions. The simplest forms include multiple-choice, true/false, listing examples or advantages/disadvantages, or doing a calculation. The questions can be displayed on a PowerPoint slide, an OHT or on a piece of paper using a visualiser, although, **as Case Study 1 illustrates**, there are more sophisticated ways of doing this, for example by using an audience response system (clickers or smart devices).

The questions could be at the beginning of a topic. For example, if you were about to look at monopoly, you could give the students a list of companies and ask them to identify which are monopolies. Having done this, you could then look at the difficulties of identification, when the boundaries of an industry are 'fuzzy'; the importance of market power; the measurement of market power; types of barriers to entry, etc. In each case you could use the examples from the quiz. Students would then grasp the theoretical points you were making, having first considered some examples, and be able to relate your arguments to them.

Alternatively, the questions could be given at the end of a section. This could then test students' understanding. If you then asked for responses (e.g. hands up those who answered A…), this would give an indication of how well key points had been understood. Again, as **Case Study 1** shows, a good way of doing this is to use an audience response system. You might also ask students to write down their answers and pass them to their neighbour to mark. When students see what their neighbour has written they can learn from each other as well as from the lecturer, especially if they are asked to spend a couple of minutes justifying their answer to their neighbour.

Top Tip 7

The use of multiple-choice or other simple response questions — two or three times per lecture — can help to provide a break in pace, an opportunity for reflection and reinforcement, and a check on students' understanding.

Worksheet or material on the screen or board

An alternative to short questions is to give the students a problem or some data to consider. This could be on paper, with the students picking up a worksheet at the beginning of the lecture, or it could be displayed on the screen or board. It is normally a good idea for students to attempt such questions in pairs as they can learn from each other. It also makes the exercise more fun. You can then go through the question from the front.

You might also ask students to read a passage that you hand out and then to answer one or two questions on it. The passage could be from a newspaper, book, journal or magazine. It is probably best to make the questions relatively closed. For example, if the lecture focuses on exchange rates, you could give them a brief news article reporting changes in exchange rates between two or more currencies and then ask them to identify possible causes of these changes. More open-ended questions are normally best considered in seminars, where students have the opportunity to discuss their answers with the group.

Completing diagrams or proofs

Copying down mathematical arguments or diagrams can be a fairly mindless exercise. Giving students a partially complete proof or diagram and then asking them to fill in the extra material can help (as argued above), since the student has time to reflect and to focus on the key points you are attempting to convey. For example, if you were looking at income and substitution effects using indifference analysis, you could present the students with a diagram which included the indifference map and the initial budget line, and then ask them to draw the new

budget line and the income and substitution effects. Presenting the students with the diagrams in this way would allow you to ensure that they could clearly distinguish between normal, inferior and Giffen goods.

You can make this process more active by stopping part way through presenting a model and getting students to fill in the next step. They can do this individually or discuss it with their neighbour. Alternatively, you can test their understanding at a particular point by asking them which way a particular curve shifts if you change a particular variable, or getting them to repeat a particular mathematical step using different numbers.

Making lists

These can be useful for getting students to think expansively or to think about policy or other implications. For example, you could ask them to identify a list of possible determinants of a shift in a curve or a list of advantages and disadvantages of a particular policy. They could do this individually or with their neighbour; or they could start by doing it individually and then compare their list with their neighbour's or get their neighbour to mark them against a list that you supply.

The hybrid between a lecture and workshop

You might restrict the formal lecture on a topic to 20 minutes and then set students some work to do, either through a worksheet or questions on the screen. The questions could be in the form of calculations or data response, preferably of the closed variety. You could go through the questions at the end or post the answers on your VLE or intranet. This practice is illustrated in **Case Study 2**.

Alternatively, you might give students a set of questions on a case study or an article. The formal lecture might be presented as a follow-up to the questions or it might be used to introduce the key ideas that will be investigated further through the questions. Either way, it is important for you to integrate the case study or article carefully with the lecture to ensure that students are getting the best from both parts.

Top Tip 8

Think about using some of the timetabled lecture slots for workshop activities. These could be for part or all of the timetabled slot. You might say less, but student learning could significantly increase.

2.4 Use of breaks in lectures

Given the decline in student attention after some 15 to 20 minutes, it makes sense to give students a break during the lecture. When the lecture resumes, attention is likely to be restored to its original or near original level. This does, of course, require you to avoid the temptation to fill the lecture time with you talking, under the mistaken belief that the more you succeed in saying, the more students will be receiving and learning.

If you do opt to give students one or more short breaks, there are several things that you can ask students to do with this time. Some are related to the lecture; some are not.

Breaks related to the lecture

You can ask the students to use the break to reflect on what they have learned so far in the lecture. A good way of using this ‘pause for reflection’ is to get them to look through the notes they have taken and ‘revise’ what you have covered in the first part of the lecture. They could also ‘tidy up’ their notes. One way in which they could do

this is to re-work the material into a 'Mind-Map' diagram (**Buzan and Buzan, 1994**). If this lecture follows on from a previous one, you could also ask them to check that their notes follow on from the previous lecture.

An alternative is for students to exchange notes with their neighbour and for the neighbour to comment on them. This both provides useful feedback to each student on the notes they have made and also helps students to learn from their neighbour's notes. The process should help to clarify understanding and to identify gaps.

Top Tip 9

You could ask students to compare and discuss notes with their neighbour. Students will benefit from giving as well receiving feedback.

Breaks unrelated to the lecture

The simplest form of break is to give the students a few minutes just to stop and have a bit of quiet time or to chat to their neighbour – or check their messages! If the room lends itself, you could let them move around. Such breaks can get noisy and so it is important to set 'rules' that allow you to end the break quickly so that the lecture can resume. A bit of theatre here, such as using an old-fashioned hand bell, or playing the 30-second 'Count Down' music, could be used to end the break efficiently.

An alternative to the 'pure' break is to provide some form of entertainment. Many lecturers may feel uncomfortable about this, but it can prove very popular with students and the complete change can be very effective in helping to restore concentration. For example you might show an entertaining video clip or read a diverting and interesting text. The video clip could be a cartoon or a comedy sketch, or anything that you feel the students might like (within reason). You could even serialise a programme over several lectures.

Alternatively, you could show an economics item from the week's news, which, even if unrelated to the lecture, can reinforce the relevance of economics to current issues. This can be very useful at level 1 for students who will not study the subject again, or who might be persuaded to do so if their interest can be sufficiently aroused.

You might choose some text from a news extract or even a poem. You could even arrange with a colleague to come into your lecture to read something (a 'favour' you could reciprocate). You could assign students in rota to bring something to read out – although you may have to vet their contribution in advance!

You could discuss with colleagues various creative things you could do in a break.

Top Tip 10

A short 'entertainment' break is likely to prove popular with students and thereby improve motivation. The break would improve concentration afterwards. If students end up learning more, it could be time well spent.

2.5 Overcoming barriers to more active learning in lectures

Section 2 has presented a number of alternatives to traditional practice in economics lectures. Whilst these approaches are becoming increasingly common in practice, there are various barriers which restrict their adoption:

- Preparation time: preparing materials, such as PowerPoint slides with integrated questions, questions in other formats, worksheets or handouts, rewriting lecture notes, etc.;
- Other time costs: maintaining a virtual learning environment (VLE), answering student questions in an online environment, the time taken to gain and evaluate student feedback;
- Risks: students may react adversely to being challenged (at least initially); the new methods may not be successful in terms of learning outcomes as hoped; you may feel uncomfortable in a new lecturing environment;
- Reactions of colleagues: if you take a 'radical' approach to lectures, and the students like it, there could be an adverse reaction from more conservative colleagues; there may be a departmental expectation of what a lecture should be and this may be a very traditional didactic model of 'covering material';
- Financial considerations: the use of technology (such as an audience response system or aspects of a VLE) may require hardware, software and technical support, all of which may be blocked for financial reasons.

Given the above, it is often easier to introduce change iteratively. Try some small activity in a lecture that takes no more than a few minutes, or try introducing a break for a couple of minutes. See how successful it is. Then build on it or adapt it.

Try revisiting your learning objectives and asking whether the lecture really addresses them. Revisit how the seminars build on the lecture material. Consider whether you are making the best use of the materials you make available to students. Do they contain too much or too little material? Should they be made available before or after the lecture?

Consider how you present information, for example on PowerPoint slides. Do you want students to copy them down? Why? Are you giving them long enough? What work do you expect your students to have done before the lecture? Should you assign specific preparatory activities?

This is not to say that you should not introduce radical change, but a progressive approach is probably safer, less costly and more practical. Try limiting changes initially to things that do not take up more time. Once you have learned how to manage the new processes efficiently, they may save you time. For example, students may use more forms of self-help and rely less on coming to see you, or you may be able to rely more on FAQs on a discussion board. This could then allow you to devote more time to other forms of student support or to developing materials.

3 Building on lectures and student support

What do you expect your students to do to build on the lecture? What support do you offer them and how can this be provided in a cost-effective way?

3.1 Work for seminars and tutorials

Typically, lectures are directly related to seminars or tutorials and it is worth stressing the importance of carefully integrating the two. You will need to address the following questions.

- How much time do you want students to spend on follow-up private study after the lecture before coming to the seminar? This should be made clear to students, so that they can maximise the benefits from the seminar. It is unwise to assume that students will know what is expected of them.
- Do you want to refer back to material or activities in previous seminars? If you do, this is likely to give students a greater understanding of how the course is structured.
- Do the seminar questions directly relate to the material covered in the lecture? Here you will need to decide whether the lecture material needs reinforcing through seminar questions or whether the seminar could be used for follow-up work, such as examining policy implications. For example, a seminar following a lecture on fiscal policy could involve students preparing a Budget based on information provided to them beforehand or examining the details of a particular Budget.
- If you are going to use various short activities in lectures including diagram and table manipulation, completing proofs, etc., or if you are going to use some lecture slots for workshops (see Case Study 2 below), does this enable you to do more creative things in seminars? For example, you could reduce the amount of 'drilling' in seminars (such as going through numerical exercises) and increase the amount of debate on policy issues (see chapter on **small group teaching**).
- Do you use some of the time in seminars to allow students to ask about points they did not understand in the lectures? Do you actively encourage them to do this? If so, are there any other ways of achieving the same objectives that you might consider using, such as discussion boards to which you reply or student self-support groups (see **archived chapter on VLEs**)? These alternatives could release seminar time for other activities and prevent them becoming in part a repeat of the lecture.

It is impossible to give answers to these questions that are appropriate to all circumstances. For example, the most appropriate answer will depend on the nature of the learning objectives and the type of work students are expected to undertake outside of lectures and seminars. However, it is important to stress the need to integrate the lectures and seminars and to use each to complement the other.

Top Tip 11

Think carefully about the connection between lectures, workshops and seminars and how student learning can be best achieved through the allocation of material and activities between them.

3.2 Online materials and online teaching

Posting materials, such as lecture notes and copies of PowerPoint slides, has become commonplace. These could be within a virtual learning environment (VLE) or on the course website, intranet or shared drive. If learning in lectures is to be an active experience for students, you will need to have a clear strategy for the use of these materials. If they are too detailed and follow the lecture very closely, they could be seen as a substitute for the lecture by the student. You may well want them to be so, thereby giving students greater flexibility in their modes of study. In this case, however, you will need to address the issue of students merely downloading the materials and not actually using them, but being lulled into a false sense of security that they can use them ‘later’. They might intend to study them but procrastination is commonplace with students.

Online materials can support student learning more effectively if they are integrated with the seminar programme and related to assessment. If your course is in a VLE, you can use its features to organise the materials within the scheduled programme and, if you choose, make them available for only a specific period of time. This can provide an incentive for students to access the materials shortly after the lecture.

More creative use of online materials as a follow-up to lectures would include interactive 'study guide' questions. For example, if you were covering a particular model in the lecture, you could set a series of questions online for students to test, consolidate and deepen their understanding of the model. These questions could be multiple choice, problems or manipulating graphs. You could choose whether to make the answers available online. Question sets are readily available, whether through the **Economics Network question bank**, the **Economics Network links to resources** section or from textbook publishers' sites or electronic resources.

If you are using online study guides, you will need to decide what incentives there will be for students to use them. How closely will you link them to assessment? Will you encourage students to work in small groups and what are the incentive mechanisms for encouraging them to do so?

Lecture capture

Many lecture theatres nowadays are equipped with the facility for recording the lecture. The simplest form is a recording where the audio is what you say and the visual is whatever is presented on the screen, perhaps just from the lectern or your laptop computer, but perhaps also from a visualiser or interactive whiteboard. Another form is similar to this but with the addition of a 'talking head' of you, which appears in a small panel on the screen when the students play it back. When no PowerPoint or other image is displayed on the screen it can be set up so that just the image of you appears in full screen.

More sophisticated forms have split screens, with the video of the lecture in one panel, lecture slides in another and a rolling transcript of what you say in another, with your voice automatically captured and converted to text. Software such as Panopto® or Echo360® can do this.

Students can access the recording through the module VLE or intranet and play it back in their own time. Normally you can choose when to make the recording available. You might make it permanently available – at least until the end of any resits – or you might prefer to make it available for just a short time after the lecture to encourage students not to get behind.

During the pandemic, when students were allowed to return to campus but social distancing was in place, many universities had to restrict the number of students attending each lecture and did not have the lecture theatres and/or staff to provide space for all students to attend. Lecture capture was the main way in which this problem was overcome. This led to a large increase in its use and in many universities this continued when social distancing ended.

The advantage of lecture capture is that students can revisit the lecture as many times as they like until they feel they have fully understood it and/or have a comprehensive set of notes. At any one viewing, they can stop, start and replay according to their study needs. It is also a safety net for students who have missed the lecture, say for reasons of illness. What is more, it allows students to concentrate on understanding during the lecture and not to worry too much about noting everything down.

A possible disadvantage is that lecture attendance will fall as students know that they can always access the lecture online. Some of these students may well procrastinate, intending to watch the video but not actually getting round to doing it before the next one, and so on. Where lecture capture has been used, however, most lecturers report that attendance has not fallen, but rather that students see the live lecture and the recording as complements, not substitutes.

The handbook chapters, *The Use of Media and Technology in the Classroom* (**section 2**) and *Creative uses of in-class technology* (**section 2.1**) look at lecture capture in more detail.

Online lectures delivered remotely

During COVID lockdowns, universities were forced to deliver classes online. As far as lectures were concerned, these could be either synchronous (students watching them in real time as the lecturer delivered them), asynchronous (students watching a pre-recorded lecture in their own time) or both, with lectures delivered in real time being recorded and thus also available to see later.

When lecturers were required to record their lectures rather than simply delivering them to camera in real time, many reported the process as being stressful. It was common to feel the pressure to make the lectures studio 'perfect', resulting in more than one 'take', thereby making the process time-consuming. Also, many lecturers have felt the pressure to include various 'bells and whistles', such as including external video clips and making creative uses of PowerPoint and graphics. Again, this is time consuming and potentially stressful, especially when more tech-savvy colleagues may produce slick recordings. There needs to be departmental support for making recordings at home or in a lecturer's office, and minimum (and possibly maximum) expectations need to be set.

Whilst it was necessary to replace in-person lectures for online ones during the pandemic, most universities and lecturers saw in-person lectures as preferable and were quick to revert to on-campus provision as soon as lockdowns ended or social distancing requirements were relaxed. Nevertheless, as we saw above, many universities have used lecture capture in the hope that the benefits of both forms of delivery can be harnessed.

The use of pre-recorded online lectures has also continued post-pandemic in many institutions, particularly when a university's degrees are made available not only on the domestic campus but also abroad.

Use of online real-time chat

Some lecturers using synchronous online lectures have enabled the live chat feature, allowing students to ask questions (see **Galloway et al., 2022**, **Broadbent and Lodge, 2021** and **Robson, 2022**). This has the advantage of encouraging a degree of student interaction within the lecture and alerting other students to questions and issues. Students are likely to feel more comfortable asking questions in the chat than out loud in an in-person lecture. They are also able to respond to other students. It is also possible to use online chat using various platforms in an in-person lecture, with students using their smart devices.

Advantages to students of using live chat include: ability to post anonymously, which encourages shy students to ask questions; getting instant or near instant feedback; helping students to engage with the lecture; learning from other students' questions and answers given to them; lecturers also responding by giving additional explanations or examples or by changing pace.

The chat, however, can be a distraction to students, who may turn their attention away from the lecture and to the chat. It can also be difficult for lecturers to monitor the chat while lecturing. Some universities have overcome this latter problem by employing a graduate teaching assistant to monitor the chat and answer questions.

One variant is to take breaks in the lecture and to enable the chat feature during such breaks, with the lecturer selecting one or two questions to answer at the end of each break. Another variant is for the lecturer to answer questions from the chat after the lecture. This does not have to be immediately, but preferably very soon after.

Flipping the lecture

The practice of '**flipping the classroom**' has developed in many universities and colleges, especially in the USA (see **Becker and Birdi, 2018**). In the context of lectures, the flipped classroom is where the lecture is recorded in a studio or empty classroom, or in the lecturer's office or home, and the students access it, normally via the module's VLE, and watch it in their own time. Alternatively, the lecturer may select online material for the students to watch or read, which may be in the form of podcasts of lectures in the public domain. Or it could be a mix of the two. In addition, there may be specific passages that students have to read before coming to the live class.

Having watched the material, students then come to class (which might be in the full-sized lecture group) and have an interactive session. This can involve exercises, problem solving, case study work, role playing, etc. The session may be in the form of a workshop (see **case study 2**) where students work individually or in pairs; this is more suited to a traditional fixed-seating lecture theatre. Alternatively, it could involve small-group work if the room has loose chairs and the students can move around.

Alternatively, the in-class session may be a hybrid session, with short summaries of material by the lecturer and then exercises based on each chunk of material. To make sure that learning was an active process, the ratio of workshop activity to summaries by the lecturer should be high.

Flipping has proved particularly suitable for many US courses, where often there are solely large classes rather than separate lectures and seminars. This allows work done in class to be more interactive and for deeper learning to take place. In the UK system, however, it has proved less popular, given that interactive learning can take place in seminars/workshops, if appropriately designed (see the **handbook chapter on Seminars**), especially if the lectures themselves also contain interactive elements.

Nevertheless, the advent of facilities to record lectures and to integrate external materials within them does give universities greater flexibility in allocating both staff time and rooms. One way in which flipping could take place would be for all the lecture materials to be pre-recorded and for the 'lecture' sessions to be used solely for workshops on more technical issues and for the seminars to concentrate more on debate and policy issues. The recorded lecture could be in the form of several short videos of a few minutes each with the total length being variable to suit the material. Short videos make the material more accessible to students, especially if the topics are theoretical and/or complex. It also makes it easier for students to replay and take notes.

During the pandemic, many universities required lecturers to record their lectures (as single videos or several short ones), with the flipped classroom taking place on line in the form of a webinar after students had seen the lecture. The question then was for universities/departments/individual lecturers to decide whether the recorded lecture should be made available only within a narrow window before the flipped online classroom.

Recording of lectures in the studio/office/empty classroom is particularly suitable for courses which use problem-based learning. This is examined in the handbook **chapter on Problem-Based Learning**.

Recording bespoke short videos for use in a flipped learning environment can impose quite high fixed costs on lecturers, especially if the recorded lectures make creative use of technology and use clips from other sources. Clearly, the greater the number of years that the material will be used, the more these costs are spread (see **Stankov, 2023**). Re-recoding the clips in subsequent years, to improve your delivery, to refine the arguments or to add new material or updated information is likely to be less costly than doing the original recording. For some lecturers, this may simply mean refining recordings made during the pandemic when campuses were closed.

One issue is the disincentive for lecturers to move modules – such moves would involve the (high) fixed costs of making a new set of recordings and most lecturers would not want to use the recordings made by the previous lecturer on the module. Even if lecturers continue teaching the same modules, there is the danger that there will

be a reluctance to record new video material to improve presentation, reflect developments in the discipline or give current examples/applications.

A danger with the flipped-classroom approach is that students may not watch the videos. Even if they intend to watch them, present bias may lead to procrastination, so that they come to the in-class session unprepared or simply choose not to come (see **Sadeh, 2023**). Summaries by the lecturer in the in-class session may help, as may working together with one or more other students.

The combination of online lectures and face-to-face classes is known as the 'hybrid-flexibility (hy-flex) model'. Finding the optimum balance of online materials and face-to-face classes depends on what is done in class and how the various sessions meet specific learning objectives (see **Stankov, 2023**). Departmental discussions on how to optimise the combination of class types, and making it clear to students how the various session types benefit their learning and what the expectations are on students, can help to ensure the best use of a hy-flex model.

The following is an example of a hy-flex model which flips the classroom, based on Stankov, 2023.

The basics (online) 1 hour	The live 'lecture' 1 hour	The seminar 1 hour
Definition: A collection of two elements: 1. short, focused curriculum units (3-7 units, 7-15 minutes each) 2. activities centred around the low-level cognitive learning outcomes for the unit (e.g. remember, understand)	Definition: A standard set of activities designed to: – Briefly recollect the main points from the previous hour; – Solve problem sets; – Apply concepts to real-life events; – Discuss press articles using concepts developed in previous hour; – Try forging teamwork within groups.	Definition: A student/student and student/teacher interaction session designed to develop teamworking skills and higher-level cognitive abilities. Provides a platform for discourse, not just answers to questions. For example: – Why was this part of the reading confusing? – What made this problem difficult?

Top Tip 12

Think about the optimum allocation and scheduling of learning between out-of-class and in-class activities for achieving the best learning outcomes.

3.3 Use of interactive facilities in VLEs

The use of VLEs is discussed more fully in **a specific chapter, now archived**. This section provides a brief overview of possible links between lectures and a VLE.

Discussion boards

One useful mechanism for encouraging students to make full use of their learning in lectures is to set up a discussion board. This is easy to do in a VLE. Alternatively, you could set up a Facebook page or WhatsApp group specifically for your module. But even a conventional email list can serve the purpose. You can post questions on the lecture that follow on directly from its content and students would be expected to respond. For example, if the lecture were examining market failures, the discussion could be based on particular examples of market failure and possible policy solutions. You can 'require' students to make a set minimum number of contributions. You can log their contributions and decide on an appropriate encouragement or 'penalty' for students who do not contribute.

If you do set up a discussion board, Facebook page or WhatsApp group, you will have to decide what students can expect of you. If you merely 'pump prime' it and then expect students to make all the contributions, it can be relatively undemanding in terms of your time. If used in this way, it can be a very useful mechanism for promoting a culture of mutual self-help. It is important that students clearly understand what use they are expected to make of the medium and what your role is.

Chat rooms as virtual seminars

As an alternative or addition to using a discussion board, you could set up a chat room in a VLE. This is different from the use of real-time chat in lectures that was discussed above.

Students could log on at a particular time and you could choose whether or not to lead it, merely start it off or not be present at all. The virtual session could last for a set length of time or could be open ended. The advantage of the former is that it requires a clear commitment of time by the student and is seen as something structured. The open-ended session has the advantage that it can continue as long as it is valuable to the remaining students.

Either way, the chat room can be used as a discussion session on the lecture, whose purpose is to help students sort out problems they may have. These may be simple questions of clarification, or they may be issues of contextualisation or application. Alternatively, you could start the session by giving some follow-up material from the lecture – an example, case study or problem – and posing the students some questions based on it. This makes the session more like a seminar.

To get the students used to using the chat room facility and to the protocols for 'synchronous' debate, it is a good idea to hold the first of these sessions in a classroom with students using their own devices, or in a computer lab. You would be present to answer questions about how to use the facility and to ensure that people are contributing. Thereafter, students can take part in the session from any computer/device with Internet access.

It is important to recognise an important limitation of chat rooms: they have poor graphical and algebraic facilities. This makes them unsuitable for technical discussions. They can be excellent, however, for exploring policy implications and for examining issues where there is scope for differences in opinion. They can also provide a medium in which shy students can feel comfortable in contributing, especially if you allow them to use an alias, with their true identity known only to you.

If one of these virtual sessions is held after each lecture (in addition to normal face-to-face seminars), it can significantly deepen students' learning from the lecture and make them feel that they have an opportunity to contribute.

If you have time, you can post edited 'highlights' from the chat room session. Failing this, you can simply leave the contributions on the site for students to revisit in their own time.

For a more general discussion of virtual sessions as seminars and how they can be used, see the case study, **Use of Virtual Seminars in Economic Principles**, on the Economics Network site.

Follow-up questions by students

You could encourage students to contact you if they have queries about the lecture. If you do not want to answer the same question over and over again, then you could again use a discussion board, Facebook page or WhatsApp group with a 'frequently asked questions' (FAQ) section. Once you have answered a question and posted the answer, then you will not answer the same question again, even if asked by a different student. The students would be expected to consult the FAQ section to check that any question they ask you has not already been answered. This can save you a lot of time and is very useful for encouraging a culture of self-help in learning, rather than students simply expecting 'to be told'. An FAQ section could be substituted for half of your office hours and you could dedicate the released time to answering the online questions.

Top Tip 13

Encourage students to answer questions posed by other students after the lecture on a discussion board. You need only intervene if the students were not working their way to the 'right' answers. This is a mechanism for encouraging self-help.

3.4 Assigned work

Assigned work: private study

Rather than merely expecting students to follow-up the lecture by reading or working through questions, you could assign them work to do. If you are not assessing this assigned work, whether summatively or purely formatively, you will need to provide incentives to encourage students to complete this work.

You could emphasise the intrinsic benefits of the work in helping them to improve their understanding and, thereby, their final grade. You might also emphasise the development of subject-specific and generic skills that will be of benefit to them later in their studies or in their career. The use of logbooks or a system of personal development plans/portfolios (PDPs) would help to encourage this more holistic and reflective approach.

The assigned work could help students to prepare for the next lecture. For example, if in the next lecture you are going to develop a theory that you have introduced, you could set students a couple of case studies that put the theory into an applied context or set a couple of problems that require the students to use the theory. For example, if you have been looking at Keynesian goods market analysis, or *IS/LM* or *IS/MP* analysis, and were planning to look at fiscal policy in the next lecture, you could get the students to study particular features of the last Budget and how they relate to projections made in the government's *Budget* document. This type of work can help students to see how the lectures are linked.

It is useful to pose one or two questions at the beginning of the next lecture to evaluate this work. These could be in the form of multiple-choice questions, e.g. on a PowerPoint slide. A show of hands would be a simple way of checking how well the students had answered them. An audience response system is a more sophisticated approach (see Case Study 1 below).

Assessed work: formative and summative

There are several ways in which lectures can be linked to assessment.

First, students' understanding of the material may be tested directly. A seminar shortly after the lecture could begin with an objective test, a short essay, a problem, or a case study.

Second, the lecture could be directly relevant to an examination or formally assessed assignment. Students are likely to be motivated by the knowledge that a specific lecture covers material directly relevant to a question posed in the examination. However, while this might be an effective means of getting students to attend the lecture and to concentrate, it could encourage surface learning if it merely provides an opportunity for students to regurgitate material. If deeper learning is to be encouraged, then students would need to know that the form of the assessment will require them not merely to reproduce lecture material, but to apply their understanding gained through the lecture and follow-up study.

Third, students' lecture notes could be assessed. This could form a small part of summative assessment, if clear marking criteria have been given to students. Alternatively, students could read and provide written comments on each other's notes. This commentary could then be assessed. This approach provides benefits to students through the commentaries they receive from peers and the reflection on note-taking that the assessment encourages.

Fourth, each student could be asked to provide a commentary on one lecture, which would be distributed to other students and formally assessed. The number of students commenting on each lecture would vary according to the size of the lecture group. Once students have prepared their commentaries, they could be disseminated through a VLE, intranet or shared drive. You could require that word processed notes should have appropriate diagrams and tables in PowerPoint or Excel, pasted into the document. With a large lecture group, you could assign some students to act as editors of the notes. These types of activity not only encourage students to take a more reflective approach to their learning in lectures but also help to develop précis and critical skills. They also signal the importance of lectures and provide useful feedback to you.

Top Tip 14

Assessment is a major motivator for students. Think how you can best link lectures to assessment in order to encourage deep learning.

4 Evaluating your lecture

Most universities have systems of formal student evaluation of lectures, involving some form of questionnaire. Sometimes these simply involve students scoring particular aspects of the lectures, such as clarity, pace and relevance. Sometimes they give the opportunity for students to make comments, and sometimes both. If these are to be used to allow you to make improvements to your lecturing, it is important first to establish what that the questions are seeking to evaluate and what assumptions are being made. For example, the questions may focus largely or wholly on you as a 'performer', rather than on the student learning experience. A lecturer may be very entertaining and popular with students, but that does not necessarily mean that lectures have been effective in terms of student learning.

If the most effective form of lecture is one where the students are actively learning during and after the lecture, then evaluation questions should reflect this. Students may prefer lectures that allow them to get a clear set of notes which are relevant to their formal assessment. As discussed above, some students prefer to be 'passive learners', and may resent lectures that are challenging in terms of material and activities.

The formal student questionnaire is only one means of evaluating your lecture and gaining useful feedback. This section reviews other methods of evaluating the success of a lecture programme.

Self-evaluation: judged against criteria

One of the most valuable means of evaluating your lectures is to reflect on what you are planning to do or have done in terms of student learning objectives. Before the lecture you might consider the following:

- What do you want students to get from the lecture?
- How will the lecture achieve this?
- Are you planning to cover the right amount of material, given the abilities, experience and motivation of the students?
- Are there any other better ways of organising your material?
- Are the examples appropriate?
- Are visual aids clear and the right length? How could they be improved?
- What activities for students are planned? What do you want students to gain from these activities?
- How will the materials you provide to students complement the lecture? Will they encourage or discourage attendance and/or attention?
- How will the lecture be related to assessment?

This list is by no means exhaustive, but it does illustrate the importance of reflecting on the links between what you are planning to do and what the students will actually do and learn (as opposed to what you would like them to).

After the lecture, it is important to reflect on what you believe students have learnt and whether you could improve on delivery, content and student activity. You should be realistic and not believe that just because you have said something, students will have understood it. Try to judge honestly what you have achieved in terms of the learning objectives you have set. While self-evaluation is important, this should ideally be backed up with more objective forms of evaluation.

Feedback during the lecture

If you are brave, you could ask the students periodically to judge your lecture against some clear criteria. This could be in the form of multiple-choice questions, perhaps using an audience response system. This allows students to ‘vote’ on various aspects of the lecture and the results are instantly displayed for you and the students to see.

A less threatening alternative is to ask students to complete short question slips and to deposit these in a box at the end of the lecture. These could be questions about specific aspects of the lecture, or they could be more general. For example, you could ask students to name two things they liked about the lecture, two things they found difficult and two ways in which the lecture could be improved.

It is best to avoid asking students to comment orally on aspects of the lecture, unless the group is small and the students feel very comfortable to state that they are having problems. Whilst traditional forms of lecturing sometimes include asking students orally whether they have understood, this is normally a waste of time as they will generally prefer not to respond.

Feedback after the lecture

If you are using a virtual learning environment (VLE), you could set up a discussion board inviting comments on the lecture. You could arrange this in sections. For example, students could be asked to identify topics they have

not understood, questions they would like to ask, and discussions to which they would like to contribute. You could have a section devoted purely to general feedback on the lectures. You could have an FAQ section, where, as we discussed above in **section 3.3**, you post the answers on the strict understanding that if a student asks a question, you will answer it only if you have not already answered the same question (or very similar) from another student. As well as providing useful feedback for improving the quality of your lectures, such a system supports students' learning.

If you do not have access to a VLE, an email list or WhatsApp group can serve the same function. You could also use email, if you want students to be able to comment to you privately. Alternatively, you could ask students to submit written comments on the lecture, and then come to see you personally to discuss their comments. Provided this is set up in a spirit of being mutually helpful, it could be a very useful and a profitable use of the office hours system. Alternatively, time could be set aside in seminars to discuss these comments.

Some lecturers provide students with their mobile phone number and encourage students to ring them with any queries. These can be much quicker to resolve than through email as the query can be discussed. To protect their privacy, some lecturers may prefer to have a dedicated pay-as-you-go mobile for this purpose.

Top Tip 15

Simple questionnaires involving slips of paper or an audience response system at the end of the lecture, or using a discussion board, email or WhatsApp after the lecture to seek feedback, can provide valuable insights into the effectiveness of your lecturing. It is also likely to make students feel more empowered.

Submission of notes by students

Another useful way of assessing how well you have communicated is for students to submit their lecture notes to you for comment. Use of this practice depends on how much time you have to devote to making comments, but verbal comments could be delivered quickly and individual students could see you with their notes in your office hours. This approach can provide you with valuable feedback on the effectiveness of lectures and provide students with valuable comments on their note taking.

Peer observation

Many departments have instituted a formal system of peer observation of teaching as part of an appraisal system. Others use it as a confidential and more informal form of staff development. If it is used to enhance teaching, rather than merely judging performance, it can play a very valuable role in improving student learning from classes.

A pairing system, where the two lecturers take it in turns to be observer and observed, can be a relatively unthreatening process and a very useful means of finding out how to improve your lecturing skills. This is especially so if the process is carefully structured, with prior discussion of learning objectives between observer and observed. The action of observing and giving feedback can be as instructive as the feedback from being observed. There is a danger, however, that the partners merely reinforce each other's prejudices. For this reason, it is normally good practice to rotate partners and also to provide some staff development activity in observing and giving feedback.

5 Case studies

6 Where next?

Suggested Reading

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Views on request