TWENTY TERRIBLE REASONS FOR LECTURING

By Graham Gibbs

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Disclaimer
The ideas, explanations and evidence which form the arguments of this paper are not the outcome of years of esoteric study and hence accessible only to professional educationalists. On the contrary, they are readily available in popular paperbacks, notably in Donald Bligh's "What's the Use of Lectures?" The evidence is not new. The arguments have been made before. Only the continued prevalence of lecturing justifies the writing of this paper.

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Introduction

A number of reasons commonly given for lecturing and claims commonly made for the efficiency of lecturers are examined for their basis in empirical evidence and common sense. Most of these claims are found to be somewhat weak. It appears that lecturing takes place rather more often than can be reasonably justified. The real reasons for the popularity of lecturing amongst lecturers are then examined. Of the twenty reasons for lecturing examined here, the first nine have little substance and the last eleven are avoidable.

The dominant teaching method in many Universities is still lecturing and the ratio of lectures to all other teaching methods can be as high as 2:1 and occasionally no teaching method other than lecturing is used at all.

Is this reliance on lecturing an effective way for Universities to achieve the educational objectives they set themselves? Is this reliance on lecturing an efficient use of the lecturer's time and energy and of students' time and energy? Does it give students a rich and rewarding educational experience?

I believe the evidence to be quite overwhelming that the answer to these questions is no. But lecturing is strongly defended by many. In this paper I will take nine of the most defensive arguments I have come across and examine them. I will then go on to ask why these arguments are clung to, and examine eleven of the real reasons why lecturing is so common.

1

If students didn't have as many lectures they'd learn less

Whenever alternatives to lecturing are suggested to lecturers the most commonly voiced reply is that the method is actually very effective: that course objectives could not be achieved nearly as easily, if at all, by other methods. I'd like to examine this claim and to examine some of the consequences of its wide acceptance. I'll consider the following nine claims that lecturers make:

1.1 [\"Lectures should last an hour. If I can stay awake for an hour, so can they\".](#)
1.2 [\"Its the only way to make sure the ground is covered\"](#).
1.3 [\"Lectures are the best way to get facts across\".](#)
1.4 [\"Lectures are the best way to get students to think\".](#)
1.5 [\"Lectures are inspirational: they improve students' attitudes towards the subject, and students like them\".](#)
1.6 [\"Lecturers make sure that students have a proper set of notes\".](#)
1.7 [\"Students are incapable of, or unwilling to, work alone, so it's good for them to have full timetables\".](#)
1.8 [\"The criticisms one can make of lecturing only apply to bad lecturing\".](#)
1.9 [\"The value of lectures can only be judged in the context of other teaching and learning activities which make up the course\".](#)

1.1 "Lectures should last an hour"

One of the issues which gave rise to the request that this paper should be written, was concern with the length of lectures. It was claimed (Cowan 1981) that because 60 minute lectures were inefficient, lectures should be reduced to not more than 25 minutes. (Cowan makes other claims and suggestions, but they need not concern us here). At first sight this seems an astonishing claim. The one-hour timetable slot is almost universally used. That a lecture lasts 55 minutes or so is a conceptual cornerstone of Higher Education. What evidence is there which might make us reconsider our unquestioned use of hour-long lectures? I'd like to answer this by considering two somewhat different justifications people have for hour-long lectures:

1.1.1 "If I can stay awake for an hour, so can they"

Giving a lecture isn't a very relaxing experience and one tends to stay relatively alert. But what happens to students' attention? Normally attention tends to drop off during any single task over a long period of time. Decrements in attention in lectures have been frequently reported and attention appears to fall off fairly steadily after an initial rise, until the last five minutes when it briefly rises again (see Figure 1). (Interestingly lecturers' performance also declines over an hour). Mac Manaway (1970) reported that 84% of the students found 20-30 minutes to be the maximum length of lecturing to which they could attend. There is something of a consensus that about 25 minutes is a reasonable maximum to expect attention during lectures.

This evidence on attention is supported by evidence on students' subsequent recall of information from different parts of lectures. Johnston and Calhoun (1969) found the middle of a talk less well remembered than the beginning and end. Trenaman (in McLeish, 1968) found students to assimilate appreciably less after the first fifteen minutes, and after thirty minutes either ceased to take in anything further or forgot what they had memorised earlier. Lloyd (1968) found the number of facts taken down by students in their notes to decline steadily until the last ten minutes. And Thomas

(1972) found the proportion of correct answer to multiple choice questions to decline steadily until near the end. There are obviously problems associated with generalising from results of specific experiments involving particular lecturers but the general trend of the results seems relatively clear.

During much of the middle of hour-long lectures, little of significance is being learned and even note-taking does not compensate for this. This is such a common-place observation in our own experience of attending lectures that it seems astonishing that we continue to lecture in 55 minute spells.

1.2 "Its the only way to make sure the ground is covered."

I've frequently heard lecturers state that only through their present use of hour-long lectures is it possible to "cover the ground". The evidence cited above in 1.1.1 and below in 1.2 and 1.3 ought to make it clear that whatever it is that the lecturer is "covering", the students are certainly not also "covering" it. But my arguments against this statement are not based on experimental evidence about the depressingly small proportions of factual information which students are able to somehow wrench from lectures. My arguments are concerned with the underlying assumption that knowledge can somehow be beamed into students heads at all.

There is no simple relationship between what is taught and what is learnt. Meaning cannot simply be transferred to students (even by dictation!). Students make their own meaning. The construction of personal knowledge is a personal activity. What students manage to construct out of a lecture will depend on what they already know and can bring to bear in constructing new knowledge, and with what they are trying to do with lectures. Lecturing is just about the least flexible resource students have if they bring to bear what they know to construct knowledge. The lecturer cannot easily adjust to individuals' existing ways of seeing things, in the content, pace or manner of treatment of the content of the lecture. There is simply too little scope for the negotiation and construction of meaning for much development of understanding to take place. The evidence below in section 1.3 supports this notion.

But apart from this basically philosophical point about where meaning comes from and how communication takes place, there is also a variation in what students are trying to do in lectures which makes the notion of "covering the ground" so naive. It is not just that students understand (or construct) knowledge differently. They also see what they are trying to do with knowledge in various ways: ways different to the goals of the lecturer. Let me illustrate this with just

one framework for making sense of student goals, that of Perry (1970).

> "Let us suppose that a lecturer announces that today she will consider three theories explanatory of (whatever the topic may be). Student A has always taken it for granted that knowledge consists of right answers, that there is one right answer per problem and that teachers explain these answers for students to learn.
>
> Student B makes the general assumptions but with an elaboration to the effect that teachers sometimes present problems and procedures, rather than answers so that we can learn to find the right answer on our own. He therefore perceives the lecture as a kind of guessing game in which he is to "figure out" which theory is correct, a game that is fair enough if the lecturer does not carry it so far as to hide things too obscurely.
>
> Student C assumes that an answer can be called "right" only in the light of how its contexts or "frames of reference" differ. She assumes that several interpretations of a poem, explanations of an historical development, or even theories of a class of events in physics may be legitimate "depending on how you look at it". Though she feels a little uneasy in such a kaleidoscopic world, she nonetheless supposes that the lecturer may be about to present three legitimate theories which can be examined for their internal coherence, their scope, their fit with various data, their predictive power, etc.
>
> Whatever the lecturer then proceeds to do (in terms of her own assumptions and intent) these three students will make meaning of the experience in different ways.
>
> Student A, faced with the kind of lecture expected by B or C, must interpret the experience in some such way as "the lecture

is all over the place" or "this doesn't have any thing to do with the course".

Lecturing is a teaching method which seldom challenges such epistemological stances. These students will learn different things without realising that they have done so (and often without the lecturer realising they have done so). Where there is scope for the negotiation of student goals, and for the negotiation of meaning, there will be a greater likelihood of students at least trying to learn what you want them to. Lectures offer little such scope.

1.3 "Lectures are the best way to get facts across"

Lectures have been compared with a wide variety of other teaching methods in a simply staggering number of studies. Typically students' factual knowledge is tested by objective tests of one form or another (multiple choice questions, true / false statements, etc) both before and after a lecture and also before and after the same amount of time spent in discussion, watching TV, reading, or any other learning activity one could possibly think of.

Combinations of methods have also been compared. For example, three lectures a week compared to one lecture and two discussions. The enormous variety of these studies makes it impossible to describe their methodology in detail here, but you can be fairly confident that if you have a methodological objection then it would be met by the design of at least some of the studies.

The overwhelming outcome of all this work is that there is no significant difference between lecturing and a host of other methods in their ability to enable students to learn factual material. Lectures are as effective as many other methods, but not more so. There are indications that lecturing is less effective, even for imparting information, than certain methods, notably unsupervised reading. (In fact unsupervised reading may have the edge over all face-to-face teaching methods for factual mastery). So despite all the work done on the efficiency of lectures, there is little evidence which might justify an emphasis on lecturing. It is generally believed that a large number of studies have never been reported simply because no significant differences were found.

Of course one could use this negative evidence to justify carrying on lecturing. After all lecturing is not worse than most teaching methods. However, using any one method is worse than using a variety. The exclusive use of lectures for imparting information cannot easily be defended. Lectures are not the best way to get facts across. Using

lectures to the exclusion of other teaching methods is certainly not the best way to get facts across.

1.4 "Lectures are the best way to get students to think"

Of course many lecturers would claim that is not factual mastery at which their lecturing is aimed. They would point to their course aims and stress students' understanding, appreciation of methodological issues, ability to analyse and solve problems and so on. The best way to achieve such aims they argue, is to undertake such analysis in lectures, to explain and demonstrate understanding, to encourage students to think rather than merely remember. Different lecturers adopt different strategies to achieve this goal: some use virtuosity, some careful logical structuring of the subject matter. But by and large, they all believe it can be achieved very effectively by lecturing. The evidence is pretty conclusive that it cannot.

Bligh (1972) could not track down a single study which found lecturing to be more effective than another method for the promotion of thought. He identified 21 studies which found lecturing to be less effective than: discussion, reading, individual work in class and so on. The evidence on the weakness of lectures to achieve this goal is devastating. Bloom (1953) found that during lectures students' thought involved attempting to solve problems, or synthesise or inter-relate information for only 1% of the time, while 78% of the lecture was spent in "passive thoughts about the subject" and "irrelevant thoughts". Bligh concludes: "The best way to learn to solve problems is to be given problems that have to be solved. The best way to 'awaken critical skills' is to practise using the canons of criticism. If this thesis seems obvious common sense, it should be remembered that some people place faith in their lectures to stimulate thought and expect thinking skills to be absorbed, like some mystical vapours, from an academic atmosphere".

As discussed in section 1.5 below, students often have to make a choice between attempting to understand what is being said in lectures and attempting to record what is being said. If the student is bold enough to abandon note-taking then she is still faced with considerable difficulties. The pace at which the lecturer is talking,

may well be faster than the rate at which she can make sense of what is said and she has no control over this. If something is misunderstood she may have to accept that little of what follows can be made sense of. If you wanted to deliberately interfere with someone's thinking, one effective way of doing it would be to talk at them continuously whilst demanding their attention.

It seems clear that expository lecturing is not the best way to get students to think.

1.5 "Lectures are inspirational: they improve student attitudes toward the subject and students like them"

Whenever evidence against the heavy use of lectures (summarised in 1.2 and 1.3 above) is rolled out, someone always says "But I remember a lecture by Professor Snodgrass which inspired me to such an extent I gave up my successful career as a stockbroker and took up Egyptology" (or words to that effect). Of course we all have experiences of particular lectures which enthralled and excited us. But these are isolated and rare experiences. I have vague memories of lecture courses I have attended where I cannot even visualise the the room or the lecturer, let alone recall a single item of content from a year's attendance. The evidence against lectures in general is pretty damning. If one looks at a student's attitude towards a subject, the amount of work they do, the extent to which they undertake follow-up activities and so on, following various different teaching methods, then lectures come out pretty badly. Bligh (1972) reports fifteen studies showing lectures to be less effective than other methods for encouraging positive attitudes, but only one which found the reverse. Evidence for students' use of notes following lectures and their follow-up of references and tasks after lectures, makes depressing reading. By and large, lectures are not inspirational compared with other methods.

It is also argued that students like lectures: that they are popular and that lecturers are forced against their better judgment to lecture by sheer consumer demand. I've never seen any evidence to support this extraordinary argument, but plenty to refute it. The Hale Report cited the ratings of seven teaching methods given by students from three disciplines. Lectures were ranked last for efficiency, fifth out of seven for enjoyment, but easily first for frequency. McLeish (1970) reported distaste for lectures in all groups of students from ten Colleges of Education and several Universities, a distaste exceeded by all the groups' lecturers in the same study. It is not the case that students dislike all teaching methods. A variety of other methods are relatively well liked.

Lectures are very widely disliked and felt to be inefficient by students.

1.6 "Lectures make sure students have a proper set of notes"

Is it true that students end up with 'proper' sets of notes after lectures? Studies of the content of students' lecture notes tend to show that they do not represent a very full or accurate record of what the lecturer said and what was displayed visually. For example, in one study (Hartley and Cameron 1967) the percentage of 'information units' students recorded in their notes was counted. It was found to vary across different sections of the lecture between 33% and 5% (in the way indicated in Figure 1) and averaged 21% overall i.e. students recorded only one in five of the information units presented. This sort of evidence is easy enough to confirm from one's own experience. Have a look at a student's notes after a lecture you have given, and unless you were dictating you will probably find much the same level of performance. It is possible to train students to improve on this, but it is not obvious that this would be a useful achievement because it is not even clear that note-taking is useful at all.

Studies of note-taking have shown beneficial effects in certain circumstances. But there are also studies which have shown note-taking to be associated with no better learning outcome than not taking notes from lectures (eg. McClendon, 1958; Eisner and Rohde, 1959; MacManaway 1968) and even for note-taking to produce poorer learning outcomes (eg. Crawford 1925, Peters 1972). Even in naturalistic studies set in the context of everyday studying it is hard to demonstrate that note-taking leads to better learning than does listening. It is likely that some studies that have shown note-taking to be useful have done so because note-taking has served the purpose of maintaining attention during prolonged lectures.

Why is this? Well many lectures overburden students' information processing capacities. Students may have enough capacity to record what the lecturer says (or writes) verbatim, but not enough left over to make any sense of it. The extent of the information processing demands of lectures varies with the unfamiliarity of the material, its

conceptual density and even how easy it is to hear (or read from the board). Often, when lecturers speak indistinctly or are going over difficult ground, the information processing demands are so high that students cannot even hear what is being said while they are struggling to write down the previous bit. They have a choice: listen and (with luck) understand, or record. They are incapable of doing both simultaneously unless the lecture content is familiar. The consequence of such superficial processing (or encoding) which does not involve the processing of meaning is very short lasting memory.

It is not even necessarily the case that students can subsequently make sense of notes taken in such a way. I have students coming to me for individual study counselling who have apparently full and well ordered notes but are incapable of explaining them to me or answering appropriate test questions from them.

The somewhat depressing picture research reveals of the poor value of taking lecture notes is compounded by the poor use to which they are put subsequently to support other work or revision. One of the most common reasons students give for taking notes in lectures is that they will be used to revise from later on. I do not believe many students' lecture notes are often adequate for this purpose and I do not believe such revision from lecture notes happens all that often. A study by Hartley and Cameron (1967) reported that while every single student in the study said that they intended to do follow-up work based on a particular set of lecture notes, 87% of them did not subsequently even read these notes.

One solution to the weaknesses of students' lecture notes is to use a handout. Howe and Godfrey (1978) suggest that not taking notes initially and then revising from an accurate teacher-prepared handout is the optimum strategy, resulting in better tests scores than any other combination of activities. A common objection to handouts is that students would stop attending lectures. Apart from the immediate question which springs to mind as to whether or not this would be detrimental, there is good evidence that this does not in

any case happen. At Surrey University, where there has been extensive use of printed lecture notes for twenty years, students prefer them and are even happy to pay for them. They do not miss lectures much and make extensive use of the printed notes (Elton 1970).

Lecturing is the poor way to give students a proper set of notes and results in all sorts of associated problems for students.

1.7 "Students are incapable of, and unwilling to, work alone, so it is good for them to have full timetables"

I've heard it argued that if students didn't have a fairly full lecture programme, then they wouldn't work at all. As can be seen in lectures, it is said, students are a pretty passive lot without much gumption and left to their own devices they'd obviously just waste their time. They have to be told what to learn and stood over while they do it.

Firstly, is this true? If we look wherever students don't have heavy formal timetables, what do we see? And secondly, what are the consequences of believing it to be true? What do we see wherever students do have a heavy formal timetable?

So, what happens when you reduce formal contact time? One way of looking at this is to count up the number of hours students actually spend studying privately on courses with different amounts of formal contact time. Table 1 below contains evidence from the Hale Report and from a study in one institution. As can be seen, students compensate for lower formal contact hours with higher private study hours. Of course this is at least partly a function of the quantity of time students are expected to study privately. But the evidence suggests that such expectations tend to be met. There isn't good evidence that reducing total formal contact hours reduces the overall amount of work students do. And as was pointed out in 1.2 and 1.3 above, various forms of private study are at least as effective as lectures even for the mastery of factual knowledge and are more effective for higher educational goals.

	UK universities		University of Canterbury, NZ	
	Arts	Science	Arts	Science
Lectures	6.8	8.3	9.7	10.0

Tutorials/seminars	2.8	1.3	2.3	2.1
Practicals	0.5	7.7	1.6	8.1
Total formal contact	10.1	17.3	13.6	20.2
Private study	25.1	20.4	29.4	21.4
Total hours/week	35.1	37.7	43.0	41.6

Table 1:Teaching and learning hours (from McKay, 1978)

One can go a step further than such data and look at what happens when private study is relatively unstructured and more obviously a consequence of students' initiative and motivation rather than of lecturers' task demands: in project work, for example. It has become something of a commonplace that students working on independent projects work harder. Even when compared against other forms of independent study, project work leads to a larger number of study hours. For example, in Open University courses with a project element, even though practically all students' work is 'private study', the project elements result in much greater inputs of work from students. Even when students have already said that the workload is already too great, students put extra work in the project elements and then say they enjoyed them more and found them more worthwhile. So to some extent the more independence students have, and the more scope for their own initiative, the more freedom to learn which students have, the harder they will work.

Repeatedly students have come to me for study counselling saying that there seems to be much more material than they can get on top of: they feel overwhelmed by the sheer quantity of information they are presented with. I tend to suggest activities such as trying to extract key ideas and information from their notes immediately after each lecture, before the vividness and sense of clarity of the ideas had faded. The students dismiss such suggestions as impractical, because most of their lectures are immediately followed by further lectures or other formal teaching contact. These students end up with folders full of notes taken too long ago for them to remember their purpose and in too great a quantity to memorise (even if

memorising half-meaningless material were a useful study activity in any case). This phenomenon seems to be a direct consequence of attempts to 'transmit' large quantities of information in lectures without adequate opportunity for students to gain feedback on their understanding or to review and consolidate their understanding.

The cumulative effects of heavy timetables and of teaching methods such as lectures which give students little or no choice as to what and how to learn, at what pace, at what time or in what order, are much more serious, however. The Approaches to Studying research project at Lancaster University has clearly shown how a heavy workload and a lack of freedom in learning are associated with students taking a surface approach to learning: that is to students trying to memorise and reproduce rather than to understand in their studying. (see Table 2 below).

A heavy workload and a lack of freedom in learning is associated with students taking a surface as opposed to a deep approach, as illustrated in the following student statements	
Workload	"There seems to be too much work to get through in the courses here." "It sometimes seems to me that the syllabus tries to cover too many items."
Freedom in Learning	"Students have a great deal of choice over how they are going to learn in this department. There is a real opportunity in this department for students to choose the particular areas they want to study." "This department gives you a chance to use methods of study which suit your own way of learning."
Surface Approach	"I find I have to concentrate on memorising a good deal of what we have to learn. Often I find I have to read things without having a chance to really understand them."
Deep Approach	"I often find myself questioning things that I hear in lectures or read in books. I generally put a lot of effort into trying to understand things which initially seem difficult."

Table 2, Approaches to Studying (from Ramsden and Entwistle 1981)

It seems likely that having to attend large numbers of lectures leads to students adopting a passive and reproducing approach to their learning. The passivity lecturers see in students may be a consequence of their teaching. To take responsibility from students because they appear to be passive is to compound problems

initiated in schools. Ramsden and Entwistle (1981) conclude from the Lancaster study:

> "It looks as if changes in teaching (good teaching, greater freedom in learning, and an avoidance of overloading) are likely to move students away from the surface and towards deep approaches to learning, and also to improve attitudes, thus improving the quality, at least, of what is learned"

1.8 "The criticisms one can make of lecturing only apply to bad lecturing"

At this point in the argument, addicts of lecturing start taking things personally. They often make the claim that many of the criticisms which have been levelled at lecturing so far do not apply to good lecturing (i.e. their own lecturing).There are certainly a large number of training courses, which aim to improve lecturing, which are advertised nationally. Indeed, I have run such courses myself. But the evidence cited above does not only apply to bad lecturing, it applies to average, run-of-the-mill lecturing. I am perfectly willing to accept that Polytechnics have their share of excellent lecturers. But it is hardly credible that we are all above average. Indeed with our history of practically no training courses whatsoever it would be surprising if we were not, overall, somewhat worse than average. And students would have me believe that some of us are very much worse than average.

Furthermore, the evidence that improvements in the presentation of lectures is worthwhile is not encouraging. What improvements in learning outcomes one can produce are often of short duration and undetectable a week later (Bligh 1972). Nevertheless, I believe worthwhile improvements can be made, though more as a consequence of the introduction of non-lecturing activities during lectures than as a consequence of improved lecturing per se. However, it may be more efficient to abandon a method than to put a lot of effort into small scale improvements of limited value.

1.9 "The value of lectures can only be judged in the context of other teaching and learning activities which make up the course"

So far lecturing has been considered to a large extent in isolation from other elements of courses. Criticisms of lectures as being inefficient at getting at students to think about the subject may be unfair because other elements, such as seminars, may be designed to achieve such aims. It is unusual for lectures to be the only teaching method, (though not as unusual as might be expected). Lectures are often defended, despite their weaknesses because, it is argued, they function well in combination with other teaching and learning activities. This seems a much better defence than most, and yet there are still many problems.

Lectures are often the most dominant teaching method, outnumbering all other elements of courses combined. Where course objectives are stated, low level objectives concerned with factual mastery (the only objectives which lectures can achieve as well as other methods) do not normally outnumber all the other objectives. So, very often, the choice of teaching methods does not match the course objectives.

However, it may be argued that it is justifiable for the objectives of lectures to be different from course objectives. Lectures do have low level objectives but this is a preparation for other teaching methods which have higher level objectives. The question then is whether lectures are a good preparation for other activities which students undertake.

What preparation does a small group discussion require, for example? If it was simply memory for some crucial factual information then lecturing wouldn't come out too badly. It is as efficient as most other methods, though it does have certain problems. The middle section of an hour lecture will have been poorly remembered if it was more than 24 hours ago and students'

notes will tend to be rather poor and may in any case contain the wrong things.

If preparation for a discussion requires gaining some understanding of the subject matter and this would seem more realistic, then lectures are a poor preparation. If you want students to think and discuss then the best preparation involves thinking and discussion. If you want to prepare students to solve some problems, then give them some problems to solve. If you want to prepare students for reading, or writing, then they would spend some time reading or writing. Attending lectures prepares students pretty poorly for any activity. The artificial separation of different learning objectives by emphasising different objectives at different times in different methods results in inefficiency. Crombag (1978) in a comprehensive review of the efficiency of combinations of teaching methods in achieving different objectives, concludes that systematic lectures cannot be expected to lead to comprehension or application of knowledge and are inefficient in any combination with other teaching methods.

Lecturers tell me that their students turn up to seminars unable to contribute because they don't understand what was 'covered' in the preceding lectures (perhaps a week before) and so they feel forced to go over the same material again in a mini-lecture. But it is the inefficiency of lectures to achieve comprehension which causes this problem in the first place. The traditional notion of allowing students to discuss questions which arose during lectures at a subsequent tutorial, is, I think, fundamentally misguided. If students have questions in their minds during lectures (and the evidence cited in Section 1.3 suggests this isn't a frequent occurrence) then they will probably have forgotten them by the time the tutorial arrives and their notes are not likely to help them. Students arrive at tutorials remembering little and understanding less and this is not all their own fault: it is a direct consequence of our use of tutorials to 'support' lectures.

2

Why is there so much lecturing going on?

Unless you know of convincing evidence, which I do not, which refutes the points raised in Section 1, then the question which remains is why is there so much lecturing going on? Some of the answers to this question are not very comfortable ones, but if we want more learning to go on, I think we have to face up to them. In this section I will suggest eleven of what I believe to be the real reasons for lecturing:

2.1 We are ignorant

2.1.1 We are ignorant of evidence about the effectiveness of lectures
Many lecturers are simply unaware of even the existence of evidence on the use of lectures, let alone what conclusions the evidence leads to. However, many of the clearest findings are easy enough to observe in ones own teaching: students' lack of attention after half an hour, the inadequacy of their notes, their poor memory for the content of the lecture evident in subsequent tutorials and their even poorer understanding. It sometimes surprises me that more lecturers haven't spontaneously abandoned lecturing as a consequence of their everyday experience, regardless of their ignorance of the literature.

2.1.2 We are ignorant of alternatives to lectures
One reason for lecturers not responding to their everyday experience is, I believe, their ignorance of alternatives. If you can't imagine what else you might do than lecture, then it hardly matters what your everyday experience is telling you. Lecturing is taken for granted. Courses are designed around lecture topics. Knowledge is packaged in our heads in one-hour-lecture-sized chunks. Why is this?

Our past learning experiences: Most of us were taught in a very conventional way - through lecture courses. With relatively few exceptions (e.g. Oxbridge) our knowledge of teaching methods is overwhelmingly dominated by our experience of sitting in lectures - thousands of them. It is our model of teaching and learning in Higher Education, our paradigm. We are even called lecturers. We are largely ignorant, from our own experience, of alternatives.
Our current teaching experience: What is more our current teaching experience does not greatly differ from our past learning experience. Everyone was taught Law by lectures, and everyone teaches Law by lecturing. There are alternatives used elsewhere and even within Polytechnics there is a refreshing variety of alternatives in various quiet corners. But by and large few people know about them, let alone have first hand experience of them.

The literature: Even without first hand experience or second hand accounts from colleagues, it is possible to find out about alternatives to lecturing by reading. Libraries and Educational Development Units do not however often provide an adequate resource and many people have a justifiable aversion to educational literature and to educationalists' writing in general. The literature isn't always accessible. Written accounts do not often convince or give clear enough guidelines for action.

2.2 We are overworked

2.2.1 Alternatives to lectures may appear to involve more work
We often worry when it is suggested that we do something differently, that it will take us longer. As many of us already feel under a certain amount of pressure we often carry on doing what we know is not working well, even when we know of a better alternative because we do not want to be under more pressure. And much of the advice and cajoling from people like me appears to imply more work and so it is resisted. This seems reasonable enough. But do alternatives to lecturing necessarily involve greater workloads? No, they do not. The introduction of an alternative technique for teaching economics at Heriot-Watt University, for example, saved 30 hours per week from first year courses.

Similarly it is common for PSI (Personalised System of Instruction) courses to be as efficient in terms of the number of students per staff-hour (see Table 3) while bringing a wealth of benefits to the quality of students' learning experience and often improved grades.

Course	No. of students	Conventional course		PSI course	
		Total staff hours per week, lecture+tutorial	Students per staff hour	Total staff hours per week, lecture+tutorial	Students per staff hour
Physics	65	2+12	4.6	11	5.9
Mechanics	70	2+7	7.8	10	7.0
Electronics	13	2+0	6.5	2	6.5

Table 3,Comparison of conventional and PSI courses in terms of students per staff hour

(Data from Sussex and Royal Holloway, abridged from Unsworth, in Warren-Piper, 1978)

There is a wide variation in the time demands on staff by alternative teaching techniques, but there is an increase in the ratio of students to staff hours is sought, it is perfectly feasible to achieve. Abandoning lectures need not add to workloads. Some examples are quite striking. The Architectural Association School of Architecture introduced a radical and flexible course structure, without formal teaching, in the early seventies with a staff-student ratio of 1:20 and per capita costs half those of equivalent University courses (Warren-Piper 1978).

2.2.2 Changes take time to introduce
Where allowances do need to be made is in the initial stage of planning and designing alternatives, and in producing written materials for those which are resource-based alternatives. For example, Open University courses are very cheap on staff time to run but very expensive to produce. Course teams take 2-3 years to write Open University

course units and radio and TV programmes. Similarly PSI schemes may be very efficient in their use of staff time whilst running, but complete costings of staff time may show them to only break even after several years running due to the original production costs. Many alternatives require an initial investment of staff time a nd this is a very real disincentive to change.

Of course even redoing a conventional lecture course takes a lot of time, and this is not always taken into account. But, we are fairly practised at preparing lectures and do it reasonably quickly as a result. Preparing alternatives takes time to learn and initially preparing these alternatives may seem disproportionately time consuming, even though they may subsequently became as quick.

2.3 There is a shortage of resources

2.3.1. Books
The common library provision policy against holding multiple copies makes resource-based learning based on set books almost impossible unless students buy their own books. There are exceptions. But multiple copies of a cheap book which would all be regularly used cannot be easily provided.

There are obvious and real constraints on libraries which have helped form the present policies. They are attempting to meet conflicting demands for breadth and depth on the one hand and accessibility on the other. But it must faced that this policy supports a particular model of teaching in which texts support lectures (for a lucky few students) but cannot easily replace them. The dependence of lecturers on inefficient lecturing is in part a direct consequence of library provision policies.

2.3.2 Resource Materials
A lecturer can write and give a lecture without making any demands for extra resources. A few slides, OHP transparencies and even a handout or two can slip by without causing much of a murmur. But as soon as certain alternatives to lecturing are adopted there are likely to be resource implications as you replace lecturer time with resource materials.

Let me give an example. Recently I was asked to give an introductory address at a conference. I had already written a paper which said very much what the organisers wanted me to say in the address. I could have spent hours preparing an address only for the subtle differences between my address and the paper to be quite probably lost on the audience. Instead I asked the organisers to pay for the printing of the paper so that participants could read instead of only listening. In the time it would have taken me to read out the paper, participants had all read each section, discussed the section in small groups and raised one or two points in public before moving on to the next section and so completed the whole paper. What is more they had a perfect set of 'notes' to take away with them at the

end. In the feedback from the session the participants were unanimous in saying that they would have liked an address less and would have learnt less from an address. Printing the paper cost £30 for 100 participants. My fee and expenses were rather more than that. My presence was almost entirely redundant. But had there been no additional costs for my time (as with everyday lecturing) then the request for additional resources for printing the paper might have seemed less excessive. £30 for an hour and a half's teaching? Taking the full costs of the event into account, making it resource-based instead of teacher-based was very evidently the efficient thing to do. But the conventional way we have of costing 'educational events' makes resource-based learning look expensive. This is an illusion. A framework which makes the spending of lecture time a matter of little account and which at the same time makes the spending of money on printing and material resources difficult, is unlikely to be making optimum use of total available resources. If it is harder to arrange to produce materials to replace lectures than to lecture, then people will lecture and students will learn less as a result. It also seems to have been the case, at least in the past, that lecturers were kept in employment by the copyright laws - many ideal resources, including Television programmes, having been made inaccessible or expensive by the Laws of Copyright.

2.4 Our attitudes obstruct change - we lecture as a coping strategy

The reaction of many lecturers to the suggestion that lecturing is not all it is cracked up to be is often rather less rational. People get defensive and distrustful. One of the reasons I have made this paper as long as it is, is that I have experienced people's arguments defending lecturing often enough to realise that they shift ground, change their premises and make all sorts of indefensible statements in order to avoid the obvious conclusion. I have had to bear in mind as many of these alternatives as I can to minimise the effectiveness of these manoeuvres. People distrust change and cling to their existing way of seeing things. This is a natural and necessary phenomenon. We need fairly robust notions as to what is going on when we stand up in front of students to teach or we would not be able to cope with what, after all, is a fairly difficult task for most of us.

We also distrust students. We do not trust them to work alone or find out for themselves and we feel more secure when they are sitting in front of us doing exactly what we want them to. The security this brings may be much greater than the insecurity which comes with knowing that what we want them to be doing is not necessarily of much benefit to them.

And we fear losing our authority and status. In lectures it is clear who the authority is. And we rig things (by choosing the topic, the level and pace at which it is tackled, the way we encourage passivity and discourage real questioning) so as to make that authority nearly invulnerable. Some of us rig our seminars in the same way (making sure we know more than the students about every topic which is discussed, moving the focus of discussion away from tricky areas to safe ones and generally hogging the limelight). Many alternatives to conventional lecture courses involve teachers taking on a different and less authoritative role: as a facilitator, or manager of resources for example. For many of us this is a direct threat to our identity and self-image.

We feel that if we are not authorities, then we are nothing. This is one of the biggest blocks to effective teaching. Beyond fear of loss of authority is a fear that once our authority has gone we will no longer be able to control things and ensure we remain on ground we feel competent on, and in situations we feel competent in. Once there is more flexibility and less control we may find ourselves out of our depth intellectually and socially.

It is not just that we carefully steer our students away from topics and questions about which we (and maybe the discipline itself as well) are pretty clueless, but we also devise our teaching methods with formal and ritualised social relationships that would look bizarre to an anthropologist. A student who talks to a neighbour in a lecture is accused of not paying attention or breaking rules of etiquette even though it might be a very sensible thing to do in order to learn. We are afraid of treating students as social equals. Lecturing is a defence mechanism.

We also have very predictable, but somewhat irrational attitudes against teaching other people's courses. We never believe there is a suitable set book for the course we want to teach. Many Open University tutors spend their tutorial time lecturing to students because they believe that, despite the excellent course Units, their students cannot manage without their personal interpretation of the subject matter. It seems to escape their notice that all the other students studying the same course are getting entirely different lectures from their tutors and that in any case the half of the students who do not attend tutorials are managing perfectly well. It is a great threat to our sense of the rightness and importance of our own ideas for students to be able to rely on texts and set books. At the Open University it has had to be faced that course units produced by Open University course teams are not so much better than existing books (accompanied by brief Open University study guides) and that the enormous expense of producing their own courses is not always justified. Recently, specialised Mathematics and Science course planning had started by surveying existing text books in order to see which subject areas it would be economical to teach (rather than

taking the egocentric and self-important approach of deciding which subject area they would like to teach, finding, inevitably, that no suitable text exactly covers this areas and then, inevitably, writing their own course from scratch). Our sense of self-importance is a luxury even the Open University is finding it cannot afford. It is seldom justified on rational grounds. Using books, resource materials and entire courses which are already used elsewhere successfully is likely to be much more efficient than designing our own courses and so giving our own idiosyncratic lectures. Lecturing is a symptom of self-importance.

2.5 There are institutional constraints which support lecturing

There are a number of disincentives and obstacles to the introduction of innovations and alternatives to conventional lecture courses which are beyond an individual's power to avoid. Unless these are removed, the likelihood of more efficient teaching methods being adopted will be greatly reduced.

2.5.1 Counting teaching hours

At present it can be in an individual lecturer's interests to be as wasteful as possible with teaching hours. If a Lecturer devises a way of enabling students to learn more which involves fewer formal contact hours, then he or she may be punished for this achievement by being given extra teaching duties which involve contact hours which do count.

In FE the development of resource-based learning, and especially of distance resource-based schemes such as Flexistudy, have been drastically obstructed by a failure to solve this problem. There appears to be more flexibility in Polytechnics and I cannot say that I understand the implicit rules which govern whether a lecturer's workload is considered acceptable or not. But until a way is devised of recognising teaching duties in terms of student learning hours rather than in terms of formal teaching hours, then there will continue to be too much teaching and not enough learning going on in Polytechnics and the introduction of more efficient teaching methods will be held up.

2.5.2 The relationship between individual courses

One disincentive for an individual to reduce formal course requirements on a course is the likelihood that heavy formal requirements on other courses will result in students simply transferring their efforts to these other courses. It is already clear here at Oxford Polytechnic that those courses with course work deadlines take priority in students' work over those without deadlines. Course leaders can be unscrupulous in designing the

course and setting students tasks so that students are obliged to spend a disproportionate amount of time on their course, at the expense of other of other courses.

At the Open University, course Units were consistently written over-length despite plenty of evidence that they were over-length and that they took students much too long to work through. Eventually, after years of mere pleading with authors to stop the selfish and thoughtless habit, a simple page limit has been imposed. This is a dreadfully crude limit to impose, but a similar constraint may need to be imposed on lecturers if their present lack of responsibility is not to constrain worthwhile developments. Descriptions of courses do not often make it clear what actual work requirements there are on students and some reading lists suggest, if only implicitly, quite unrealistic expectations. Often the only way of finding out what the real workload on a course is like, is to ask the students. We know very little about how students spend their time, and even less about why.

2.6 Course validation and other external forces often support lecturing

To some extent it is easier to carry on doing what we have always done because then no-one expects us to justify or explain ourselves. It is very simple to list a syllabus and say that it will be taught through lectures with a few seminars and tutorials. We are unlikely to be asked difficult questions about our choice of teaching methods.

Even the CNAA, despite their support for innovation, ask for fairly elaborate justification of radical alternatives, while accepting conventional course designs with hardly a comment. I have sat in on one CNAA approval visit during which not a single question was asked about the (conventional) teaching methods and with less than half a page in the submission document devoted to teaching methods; and on another in which the visiting party questioned how a syllabus could possibly be covered with so few lectures! Less scrupulous external bodies, such as some professional bodies, are even less likely to question how a course described as being taught entirely by lectures can possibly achieve its objectives (if any are stated) in this way. Some courses currently simple divide up an externally defined syllabus into the number of hour-long slots during which students attend the Polytechnic, label every single slot 'Lecture', and receive no comment whatsoever. There is an enormous weight of precedent and inertia, institutionalised through external validating bodies which makes lecturing the easy option in course design despite its inefficiency.

2.7 We don't know how to design courses

For many courses the only way a student can find out what it consists of - what it is that is to be learnt - is to attend lectures. CNAA submissions and course descriptions in the prospectus, handbooks and even information private to Departments often consist of little except a syllabus: a list of topics to be 'covered'. What this 'coverage' actually consists of may be understood only by a small group of lecturers or even a single individual and it may be written down in some lecturer's lecture notes. The only way for a course or part of a course to be taught by a different lecturer without it being dramatically changed, is for the lecturer taking over to attend the previous year's lectures. Even essay and exam questions do not define the content of the course to outsiders. Students come to me for individual study counselling because they don't understand what an essay question is asking, because the particular lecturer who set it is not available to clarify this and because other lecturers available either don't know or disagree! The lectures are the course, in many instances. Without them there would be no even half adequate indication as to what the course was about. Without attending the lectures, students would flounder terribly. But this is not because lectures are a brilliant teaching device. It is because we are so terrible at course design and don't know how to describe and define courses adequately except by talking in public for 20 hours or so (and often not even then). Abandoning lecturing forces us to be clearer about what our course is about, what our students are reading for and so on. We resist being forced to think about our teaching so carefully and prefer to avoid adequate course design by lecturing.

This may partially solve the problem for ourselves but unless our lectures are exceptionally clear, it doesn't help students much. What students lack, most of all, are clear statements about what is to be learnt. Lecturing, (supported by our present abysmally low standard of course description) helps us to avoid this problem.

The problem of dividing courses up into lecture topics, the content of which is only known to the lecturer, is most marked where different lecturers teach on the same course. What little coherence exists in

some such courses does so only in the minds of some of the lecturers. Relying on the content of lectures to define the course content causes students terrible problems, and makes links with other course elements, such as seminars and practical work, somewhat tenuous. If such courses had realistic learning objectives clearly stated or had the course content written down, I believe it would be less likely to happen. But while we continue to pretend we can design courses around lecture topics we are unlikely to bother. It is clear from teaching methods such as PSI that, once you have bothered, the need for lecturing may disappear, or at a minimum the function of lectures may change radically.

A lack of sophistication in some of our assessment techniques also supports lecturing, I believe. While acceptable learning outcomes are synonymous with the recall of the content of lectures, there may be little incentive to change. Only when understanding and application of knowledge are made criteria and when students who can only recall factual information are failed, will the inadequacy of lecture-based courses be clearly highlighted.

3

Conclusion

I would not like to leave the impression that I feel that there is no justification for ever lecturing. I lecture myself (though seldom for more than fifteen minutes at a stretch and then seldom when written substitutes are available). I believe there are circumstances when a well structured, well paced, varied, lively lecture can be the most efficient teaching method. But I do believe there is far more lecturing going on than can reasonably be justified by the evidence concerning the efficiency of lectures, especially bearing in mind the nature of the educational goals we claim to be striving for. I believe this state of affairs to be largely due to ignorance, attitudes, and institutional constraints, rather than to any inherent virtues of lecturing which I have overlooked, and which everyone else is privy to. I believe both institutions and validating bodies ought to be asking serious questions about courses which appear to be based primarily on lecturing as the dominant teaching method.

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