SECOND DAY OF THE SEMINAR

Prof. Panaretos: After our usual Greek academic quarter we start, I can say on time. The first session of this morning is on the development of the university management statistics and performance indicators and their influence in university practice.
The speaker will be Dr Page, the vice-chancellor of the University of Reading.
I would like to make one brief point, if I may. During our discussion I was wondering whether you can touch upon some items on, or what items exactly the committees on performance indicators looked at and what they took into consideration.
Thank you. Please, Dr Page.

Dr Page: All right, gentlemen. Yesterday, Professor Hanham gave what was really a very broad tour of Europe and what people have been doing about these things that are called performance indicators.
What I planned to do was to tell you what we have done. And I know Professor Sterling later will be saying "but what we are going to do".
I should emphasise that when we started this round about 1984 it was not because we wanted to do it. There had been set up by the Committee of vice-chancellors and the University Grants Committee working party on efficiency studies in universities.
The Committee of vice-chancellors attempted to control the formation of this committee and what it did and it was for that reason that they attempted to forestall the University Grants Committee. It nominated as the Chairman and got the acceptance of the University Grants Committee a distinguished person who had some connection with the university, a man named Jarrod, and the report, now as we all know it as Jarrod's Report. And in that report in 1984 there was more than a suggestion almost like a direction, that we should aim to publish statistics, which would form, eventually, a time series of certain important characteristics in universities. So they could be used for comparative studies between universities.
Well, faced with such a recommendation we had little alternative but to try and publish something quickly. Because if we, the vice-chancellors, did not get something out quickly, then, undoubtedly, someone else would.

So, of course, if you are going to publish something quickly, you ask yourself what data is there? Well it so happens that over many years there has been a University Statistical Record principally formed from annual returns which universities made. And these were, of course, stored on computer in a central place.
The returns which were always required by the University Grants Committee in fact were part of the audit, the normal financial audit operation of a university. The characteristics that had to be entered had been laid down by the University Grants Committee, which was at that stage the government funding body for universities.
But it had become clear over many years that you had to ensure that all universities returned their figures in the same way. Definitions were vital. And there had been set up a working party drawn from many universities. There would be administrators, registrar and finance officers. Themselves attempting to refine and make more precise the definitions.
That was a process that went on for over a decade. And without it, it would have been quite impossible to produce any statistics, which would be of really any great use for comparison.
You cannot just let universities "fit-in" filling the figures according to their own definitions. You have to have adhering to the same set of definitions. And we were then able to use that data bank to produce some things which we could publish.
We have been landed with the term performance indicators. It is a term I hate, because I have yet to be convinced that any of the figures that we have produced are really indicators of performance. And instead I managed to get accepted that the volume to be published would be called "University Management Statistics and Performance Indicators". I had hoped that by now, which is now the sixth volume, that we would have been able to drop the term performance indicators, but I am afraid we cannot.
Now, let me say then what it is that we actually managed to publish.
In the universities, I am sure you are aware, it is much easier to have a number of, to find input measures and to agree on input measures than on output measures. The input measures that we selected, well, first of all, on what degree of fineness should we decide. We decided by subject group. There were about 30 of these subject groups, not quite as many as the groups for the research assessment, but about 30. For example, chemistry would be a group, language studies would be a group, the humanities, different sorts of engineering individual groups, medicine, and so on.

That degree of coarseness or that degree of division, if you wish. So it is by subject group. We would, therefore, have figures published in those fine, comparatively fine, divisions.

Well, what did we publish? We published expenditure per full-time equivalent student, where expenditure by full-time equivalent for a number of staff. By full-time equivalent for a number of staff if you have someone who is half-time it would count a half, and so on. Similarly, if the student spends half their time in the department of chemistry and the other half in the department of mathematics, they each of them get a half.

And so we are publishing total cost divided by this normalising factor of full-time equivalent staff or student.

So, immediately we have a comparison, say, between the University of Reading's expenditure per full-time equivalent chemistry student and the comparison in the University of Lancaster, the University of Brunel, and whatever.

We also published the research income generated from outside per full-time equivalent member of staff.

And you see immediately, therefore, that supposing in the University of Reading it turns out that the unit expenditure in chemistry seems to be high, it may turn out that part of that reason is because there is a lot of research activity, a lot of research money. So if you are spending more at least you have some justification for spending more.

We published the student-staff ratio, the number of students, full-time equivalent, per full-time equivalent member of staff. So that you get a picture of the academic labour that is going into the education of the students in that subject.

And to break down the student body in that discipline, percent research postgraduates, percentage taught postgraduates, that is the taught Master's degree, so that if you have a picture, say, of the department, which is very largely undergraduate teaching, it would be few graduates. If you have got something right at the other end, you might well expect that to be a lower student-staff ratio, because you have got a lot of research students who are taught Master's degrees.

We published, also, the percentage of the total university expenditure that went on administration, on libraries, on computing services, on the maintenance of premises and on student services, the sort of things like the students' union building, the health services, the career services, and so on.

Those then were, in the main, financial measures. But they were also giving a picture of the pattern of the department.
An input measure for the quality of the students was the A-level scores. How in Britain most of the undergraduates, who enter the university, do so either directly from the school or with perhaps one year's break from school and most of the students, not all but most of the students, will have taken an examination at the age of about 18 or 19, the A-level, the Advanced Level Certificate of the General Certificate of Education, then normally take that in three subjects, some of them do more, some of them just do two. And, by scores, these examinations, which are run by a number of national boards, are graded A, B, C, D, E and so we gave originally 5 points for an A, 4 for a B, 3 for a C, 2 and so on. So that, if you got, as perhaps Oxford and Cambridge often did, would get candidates with three A-levels or grade A, you would have 15 points. Some other less favoured universities in less favoured subjects might perhaps just have a minimum of perhaps 6 points, or something like that. So we published for each of the disciplines the A-level scores for entry.
Well, those then are, roughly, the input measures that we published.
Now you begin to look at output measures. And now I have to say I believe that most of them are really quite inadequate.
The first one was what we called, was to give some indication of the employment possibilities for the graduates. The so-called First Destination of graduates. In Britain, I expect you know, people take their degrees in about June or July. In each university there is a Career Service, which is supposed, soon after the end of that calendar year, after December the 31st, to have a record of what has happened to those graduates. How many of them are in jobs, how many of them are still unemployed and looking for jobs, and so on.
Now, what is the first problem? The first problem is that not all University Career Services are equally diligent about finding what has happened to their students. It is easy, often, to find out the students who have got a job, the others they may not know anything about. And consequently if they don't take steps to find out, they can very happily report that all the students that they know about have got jobs. And looks as though they have 100% record.
However, that is one disadvantage. The second disadvantage, and I expect it is the same and in Greece as it is in here, is that many students take a first job and change it, perhaps completely, after a couple of years. We have only sample information about later experience with our students. But we produced information about the

first destination of graduates, that is what was happening to them at December the 31st.
Now the first thing that we did was to look at this nationally by subject, not by university in this case but by subject. So that for each of our subjects we would see what proportion of graduates in that discipline are employed.
And so, at any rate, we have got some means then, when we start to look at a university's record, some method of weighing appropriately for different subject mixes in different universities. So that, for example, in Brunel University, which has considerable number of engineering disciplines, with students who spend some time, perhaps *a year, out in a company and if they are any good the company might* want to keep them on, we find that in engineering disciplines that there is a high record, a high proportion of those who are employed.
We are able to, then, look and say, what would be the predicted employment on an average basis in University A and in University B? And then weigh them in accordance with the proportions of students in the different disciplines. If you had a university which was predominantly in the humanities you would be comparing their employment record with the national average in those disciplines. And so you could work out what if there was average performance for employment record within the university you can work out roughly what would you expect, compare it with what you observe and express that as a proportion per 100 students. If you got more employed it looks good, if you got less it doesn't. Now that is one thing that has attracted a lot of attention, particularly in the press and in government circles as well.
It is, I think, sadly flawed, because of the inadequacy of the data and the inadequacy of the indicator anyhow, but it has nevertheless attracted some attention.
Another of the output measures again done by subject group, was to look at undergraduate success. By that, the percentage of those leaving the university who have actually been successful and gained their degree. And once again you can look at those percentages and to see whether you ought to be producing for example more botanists, if botanists have a pour success rate, or more sociologists. We can look also at the terms of attendance per success so that if some students really have to go back and spend an extra year and the proportion is high, you will be able to compare that from subject to subject.

These, I think, are very inadequate output measures but they are virtually all that we really have.
You've heard something about an entirely independent exercise, the research assessment exercise. Yesterday we told you that this was something set up by the Government-run University Funding Council, that that was separated into some 72 different panels this year, in the earlier years it perhaps wasn't as many as 72, set up, each of the panels by knowledgeable people in the field, nearly all was drawn from universities, and ranking each university department on the scale 1 to 5, the 5 is the highest. This year universities were permitted to eliminate some members of staff from their returns, if they wished. So also was recorded the percentage of the staff who were returned in the exercise. So that in a university that was active in research throughout virtually the whole of its disciplines, each rating from 1 to 5, would be accompanied by a letter, going from A to F, which would indicate the proportion of staff who had been returned in the exercise.
So I mean more than 95% were returned. So all the way down. If you might well goes down to E I think, less than 20%. And some of our new universities were indeed just returning one member of staff in the department or something like that.
Now, those in some way are output measures. But I just now tell you what did the press do with them. They are of course in the public domain and the first thing that the press want to do is to compare it with football teams and produce a table. And it really is incredibly annoying to have what is a complex issue treated in that trivial fashion. But I merely say to you, you can be sure it will happen, it happened to us, I think it will happen to everybody whenever they go into this exercise.
On this research ranking for example what is the first thing they would do in the press? They would add up all the ranks and form an average. What a non-sense! If you might have, say, a department of classics which had, say, 8 members of staff, you might have a department of chemistry which might have 30 members of staff, it would treat them exactly the same. Well, statisticians among you will think goodness gracious, what a darn thing to do, can't you even weigh them in accordance with the size of the discipline? Wouldn't you think of weighing them at least by the numbers of staff, active staff, that were put in! At least then there would of been a little bit better. But they are still deficient, because it has been quite

noticeable among different of the subject disciplines that panels have taken a different view about what their grading from 1 to 5 mean.
Now, as far as the University Funding Council is concerned, all the individual funding councils now were split up into the different countries in Britain it doesn't really matter, because they are using these things to calculate the amount of money they are going to give, and they know that for example, say, in education that is principally the training of teachers, there is only going to be a certain amount of money allocated for research in that discipline. So that if all the departments, which were put in, were graded 5 it wouldn't matter. They would just have that money, distribute it among them in a non-differentiated way. And if therefore their grades turned out to be 1 or 2 higher than those, say, in chemistry it is only just a method of distributing the money. But it has effects on the press, lead tails.
So the press will, one way or another, use those raw figures in a crude manner and will undoubtedly annoy a great many people in the universities.
They also print A-level entry scores, input measures, totally ignoring the fact that certain disciplines require very high A-level scores purely and simply to control the number of people who are accepted. For example medicine and dentistry. There we have a strict control on the number of students that are accepted for these disciplines. Quite right, too. They are very expensive disciplines, you don't want to have too many of them around. But, what is done in order to control those, is for the university to require very high A-levels, just as a control mechanism. You don't need to have 3 As at A-level in order to be a good general practitioner. It is a non-sense. But that is what is done. So that if you have a university which has a medical school and another university which does not, you immediately have a built-in bias for a higher level A-level entry score than in another. But this is what happens.
"The Times" newspaper, would you believe, commissioned a former professor, actually from the University of Manchester Business School which I think had been closed largely through inefficiency, and he produced an amazing composite ranking on data that was suspect with weighing of characteristics entirely idiosyncratic. But that was done.
I quote to you just from one of many articles that have been written on this subject. It said,

"In industry one natural measure of performance, profitability, exists. No such unequivocal performance indicator is available for higher education.".

So, that is what we have done. It is what out experience has been with the use of the information we have produced by the press.

More positively, what we have done within our own universities, how we have used these figures. I, as a vice-chancellor, have found it very useful to be able to compare my unit expenditure in the various disciplines with those of other universities. Because I can look down the figures, I can see the extent to which we are roughly comparable, I know something about the relative standards, the relative respect in which the departments are held, I can say are we spending more money and getting less respect, or does it seem that we are spending the money usefully.

I supplement these comparative figures across the range of universities in Britain, with more detailed figures in my own university and distribute those figures, in the terms of a departmental profile, to the deans of the faculties and of course to the heads of the departments themselves. And of course insist that within the university the figures on such a departmental profile are the only ones that shall be quoted. We all know that the devil can sight scripture to his purpose, heads of departments will sight their own statistics for their own purposes and mislead us if we are not careful. But many of these things have been useful. It is when they get into public domain, I regret to say you get many-many articles in the press which are grossly misleading.

So that is what we have done. And you can tell that I think that we have got some modest successes and we have also made a number of mistakes. I hope you will avoid the latter.

Prof. Panaretos: Thank you very much for a very detailed presentation in a short period of time of what is happening in Britain now and how you use performance indicators and for also pointing out the difficulties in interpreting them and also reading about them in the papers.

I would like to raise two or three points with reference to performance indicators. You mentioned that one performance indicator is the first destination of students. If I understand it correctly, the policy of the Thatcher Government was that by the year 2000 the number of students at the universities would be doubled. Am I right in that or

not? Yes. I also understand that the philosophy was that, although the number of students will increase, the jobs available would also increase. So, there will be no surplus of graduates. And, I don't know whether I am right or not, I think up until 1989 there was not a real problem with the number of graduates.

Dr Page: Yes, I think that is correct.
Prof. Panaretos: But what I want to ask is has there been any consideration taken to the effect that these large increases of the number of students will have in the universities? Like for example, since we are talking about statistics, the probability of a student getting a job, say in 2 or 3 years time, when the increase takes place to the full extent?

Dr Page: Well, you are taking .... [end of side A of the tape]

Dr Page (cont.): [not heard] .... a wider range of jobs that will be done by graduates. Now, I don't regard that as necessarily a disadvantage.

Prof. Panaretos: If I am not mistaken, another question that has been raised, and I don't know whether it related to a performance indicator, is the value added. Has that been examined?

Dr Page: That is the most difficult thing. We haven't managed to do anything. You see, one of the things that you might be able to say is, well, look at the A-level grades that are on entry to university and look at the quality of the degree at the end. That I think is quite impossible to do. There is a fiction which is being circulated in Britain that all degrees are the same. It is all that a nonsense.
As a Cambridge mathematician I know perfectly well that the mathematics degree in Cambridge at a first class there is a great deal superior to a first class degree in mathematics in London and a good deal better than the first math degree in CNAA. Is all that a non-sense. And if we take that as a measure, we know that what we will get will be great inflation. People will be getting more first class degrees and more upper second class degrees just in order to suggest that they are adding greater value. It is all rubbish.

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Prof. Hanham: Could I draw-in just on the subject of employment, and so on.
Because I think one of the things to bear in mind is that since the 1960's particularly a large number of occupations have decided that they will, in principle, employ chiefly graduates. This is a process that has taken place all over the world, but for instance it used to be the case that accountants were not expected to be graduates. Now they are.

And the process has gone a long way. Lawyers did so. They were not expected to be graduates, now they are. Nurses increasingly are expected to be graduates. Social workers are a wide range of people. So that, what you have had is a large number of people who are in posts, who are getting qualifications part-time, and the new entries are on the whole enrolled in degree programs.
The effect of that is that the distribution of incomes becomes rather peculiar by traditional standards. Because a lot of those jobs are badly paid. So that you have lots and lots of structural low pay, built into the graduate position.
And I think this is a familiar problem all over Europe, but it is one that people don't talk about enough, because they do not realise what has happened to the numbers. We have already, or probably have got to the point where we have the number of students that were planned for the year 2000. A large proportion of that is simply unflowerished expectations by the particular professional bodies.

Prof. Panaretos: The reason why I ask the question about value-added is connected to what universities are doing and what the government wants to do. When I visited England last spring I visited the Department of Education and I realised that in their thinking this business of value-added was very much in the makings, and they wanted somehow to get something out. So I don't know whether they will press for that, whether the universities will do something about it.

Dr Page: They will press away. But most of these people are innumerate, some of them are not very good. This is political. And I believe it has little hope of anything accurate coming out.

Prof. Vergados: I have two questions.
I subscribed to a good piece of graffiti I had seen in the United States some years ago, saying that merely because you are a bit paranoid that does not mean that they are not out to get you.
In connection with the press of course it is obvious that it can be abused or not wisely used this table. But on the other hand why should we be afraid, why not for example a negative side is not balanced by a positive one. Why for example we should expect the data to be against, may be miss-represented but not necessarily on the worse side, and b) what I would like is to go through these criteria, these indicators and, if you may, tell us what they were

supposed to do a priori and what in your opinion they have done a posteriori. So that for example you mentioned some items here but what really matters for us now that we are going to repeat this, if we may, what has been accomplished, what was it supposed to do, what it actually did and what you think will never be done. With each one of them.
Thank you.

Dr Page: Right. Principally the input measures by department for example for chemistry to be able to compare expenditure within one's own university with those of comparable universities, comparable departments elsewhere, those that I think has been achieved, these have been useful as management statistics within the university, even if government had taken the trouble to look they would have got a great deal of useful information comparing, at that level of detail, that I think was what it intended I think that that actually has been achieved as a useful management tool.
The abuses have come, as I have said, by unjustified agglomerations of these figures attempting to gather some single indicator for an institution as a whole. Whereas the usefulness of this data was at the final level, the departmental level.
That is an abuse and you may say, well, is there something good that can come out of that? Perhaps. I can see so many disadvantages with the way things have been done and yet I would find it difficult to produce something with real justification for putting those figures together to give an indication about the institution as a whole.

Prof. Vergados: So it has all been negative, in other words.

Dr Page: Perhaps I am too much of a pessimist. But I am very doubtful that it is possible to get a single figure which describes an institution, separate parts of the institution. The variability within all our institutions is enormous.

Prof. Sterling: It can be quite useful as a manager of an institution to look through and simply see the cost of your own electrical engineering department relative to others and then to overlay on that one's own judgement of the quality of those other institutions and the type of graduates that they have.

So in terms of controlling your own resource distribution it is an invaluable source really. I have brought along with me the copies of the publications that Yiannis was referring to. I am afraid I'll need them back, but if you like to look at them I can pass them around.

Prof. Lykourgiotis: My interest now is focused on more elemental, fundamental indicators, such as the ratio of the number of students to the number of staff for a given department and secondly on the optimum number of students in a given department. Can you tell us more about these indicators? For instance I wonder if there is a widely accepted value for this ratio.

Dr Page: I don't think there is a widely accepted value for those figures, but certainly you get some pointers to whether you are generously staffed or not. For example some of these ratios, student-staff ratios, differ between subjects in an unplanned way. I will give an example.
Twenty years ago physics was a comparatively popular subject, there were departments which were staffed in order to deal with what now turns out to be twice as many students in physics as there are now. Students do not wish to do physics, it is a bit hard for them. But we *have* been able to get rid of the staff. Consequently the student-staff ratio in physics is comparatively low, I don't know what the figure in that pink book is, but it is about 6 or 7 or 8, something like that.
And in other disciplines like law you'll find it is like 16 or 18. There may be an argument for it being higher in a non-laboratory subjects, and I think there is. But many of these ratios have grown to be what they are, because of the history of the subject. All that you can have is to say, well, what does my department of law look like compared with other departments of law, and that is very useful.
But I do not think that there is an accepted ratio. What is happening in some disciplines is that the ratio has gone so high. You are seeing a question are those students really getting a university-type education in that discipline?

Prof. Karamanos: I am wondering, if you could just name some of the parameters used in your research assessment exercises just to rank the universities and the departments, please.

Prof. Sterling: Gentlemen yes. I got a slide and I'll come to it if you like, that actually shows you the criteria that were used.

Prof. Tsaoussis: I have two questions to ask.
The one, I know that to a certain extend it is a bit awkward to put the question, but it has been raised both at national and at European level. All these exercises are related to what is perhaps called quality performance, quality assessment, quality assurances, etc.
My first question is what is the real effect of the evaluation and the assessment processes in terms of quality assurance not for the public but for the institutions themselves. How does it really relate to what is quality. I know, it is an awkward question. I would like to have your response on that.
But because, also, the idea of quality is more or less in the wider public related to the cost-effectiveness situation, my second point would be how is management related to the whole exercise of evaluation in two ways. How do for instance management people, university professors etc., assist in making the framework for evaluation and deciding on the definitions and the indicators, etc., and what it means to break down various activities into this kind of indicators and to what an extent is management, university management, an area by itself for evaluation, in terms of what was yesterday referred to in the three part division teaching, research, organisation. So the management enters at two sides. As a tool and as an area of evaluation. That was my second question.
Thank you.

Dr Page: You have indeed asked some difficult questions, indeed. And I fancy that several of us here may have personal views about how one might assess quality within a university.
My own belief is that quality depends almost entirely upon the behaviour of individual members of staff. The extent to which university management, senior people in universities, can influence the behaviour of the individual members of staff is crucial. Whereas the pattern of individual behaviour that is set, just simple things like does the lecturer arrive on time, does he start on time, does he speak up, does he invite clearly on his slides, does he provide full student news, the quality of that element of teaching, is the examining done in a fair, conscientious manner, are student exercises returned

quickly, and so on, all of those things I think are an indication of quality.
We'll use certain of these figures that I've talked about. You can of course take some view about that.
If we have a student-staff ratio in one subject which is, let's say, 16 to 1, and then another of a rather similar discipline, let's say, 12 to 1, one expects either that the department that has the 12 to 1 ratio is perhaps doing more successful research, is teaching its students better and, if not, why should it not loose a member of staff or two in order, in your allocation of your resource for you as university managers, to get better performance from your university.
But many of these things are part of the managerial ethos of your university or the departments within your university.
These figures that I have been talking about I do not believe are indicators of quality. What they may be is indicators to you of what quality you might expect.

Prof. Vergados: I want to return to what Professor Lykourgiotis said, because for us these indicators, students divided by staff, is really a control mechanism either to prevent, let's say, our expansion or to force us to admit more students than we would like.
Therefore, I think it is very crucial a) if we could have a number that is more or less accepted as the standard and b) suppose in a department, because of historical reason, you do have such a good ratio. What does that mean? Should the department age this way? Suppose that the people who retire, you know, it takes some time for them to retire, say ten or twenty years. Does that mean that we don't employ any new faculty in that department? I mean these are the questions that for us here in Greece is not an internal matter so we *can* play with these numbers, adjust them and do whatever you want with them. It is the Government that would like to use these numbers.

Prof. Panaretos: Excuse me. Before you answer, I think there are two questions on the same topic.

Prof. Lykourgiotis: I agree with the professor, the Rector of the University of Ioannina and the origin of my question is the discussion that we had yesterday, in which we compared our university and your university.

In the University of Patras there are 17 departments and in your university 32 departments. On the other hand, the number of students in your university is 9000 and in our university is 14000. And for me this is, I think you have better ratios than I have and this is the reason for which for me it is very critical the ratio staff-students and the number of the departments.

Prof. Panaretos: If I may add something to that. I understand that the OECD has some standards say for students-faculty ratio, or faculty-student ratio, and, if I can contribute to the question and let you answer the whole thing, in your exercise, the short exercise in performance indicators, do you take into consideration what the OECD is doing? Do you strive for something, are you trying to achieve a better ratio?

Dr Page: I can answer that one very quickly. No, I do not believe any British vice-chancellor pays the slightest attention to any utterance on OECD on what the ratio should be. I do not think it relevant.

Dr. Munby: One other contribution to the question, which is about quality, started on. We have got this whole thing divided up into the difference between measures of efficiency and measures of effectiveness, because we get hung up on the word quality. And, if I may suggest, the student-staff ratio measure is inefficiency measure. Efficiency measures measure your performance in terms of things like savings which you can get. They are semi-economic, or indeed entirely economic, whereas the effectiveness measures measure impact.
So, if you are talking about student-staff ratio, which is a useful, as Dr Page says, internal measurement tool, this is to show you whether or not you can make additional savings or how you can improve your performance in economic terms. It doesn't tell you anything about impact. So it is not a quality measure in my opinion.
The difficult ones are effectiveness measures, because it is always difficult to define something that reliably measures impact. And so could I throw that into the question?

Dr Page: Should I try and answer the other questions that came in first?

First of all it was a very pointed question and I will rephrase it to say, if you have a low student-staff ratio and you do not intend to have a low student-staff ratio, what do you do?

Well, you can try and recruit more students to increase the numerator. In terms of physics that is difficult, because the students either don't want to do it or are not qualified to do it. Or you can get rid of some members of staff. There may be some difficulty in this, because of the legal terms of contract. The great reaper will help you, but as you point out it might be rather slow in doing it.

We faced this problem, particularly in 1980/1981, when British universities were subject to a very severe cut in money. And, in many cases, the only practicable thing to do was indeed just to wait. We bought some people out for early retirement, but we had to wait. And that did mean that in some disciplines there were no new appointments made for a number of years. And of course after a little while everybody gets worried that if you continue in that way you get an intellectually dead department and especially a one that is in rapidly developing field, you have no possible succession of people coming in and you must take some special measures to do it, and that is what we did.

We had what was called the new blood exercise. So there was an *in*jection of money in order to make some new appointments. There is no easy answer here I am afraid. So, you have indeed tumbled to the fact that if you have to increase your student-staff ratio, because for economic reasons or for government pressure, if you cannot get additional students, you've got to get rid of staff or do so in some way or another.

Now to turn to the Rector of Patras' question on what should be a desirable student-staff ratio.

It will vary from subject to subject. For example, in, say, the clinical disciplines you can only have about four or five students around a bed, looking at a patient. So that there has to be a student-staff ratio of about 5 or 6 to 1 otherwise they cannot get near the, or where, the patient is suffering. That is one. Similarly in laboratory disciplines for safety reasons you cannot have students in dangerous laboratories without some supervision. And that, again, my feeling is that a ratio of about 10 or 11 to 1 in a laboratory discipline is plenty. In a normal laboratory discipline, one of the humanities for example, then perhaps one could go to 15 or 16 to 1 provided you have ample library facilities, you have language laboratories and other supportive things so that the students can learn themselves, teach themselves,

which is, after all, one of the things in the university we must try to do.
When we get to higher ratios then we will have to be looking for alternative methods of instruction and clearly a great deal of effort is going into that at the present moment.
But you also have to take into account when you are looking at these ratios what is the make-up of your student body. In my university about 20% of the university is postgraduate. That is quite a high ratio. And you would therefore expect that many of the ratios would be lower, because if the students are doing research, well, member staff can only supervise so many, the research student, if he teaches at the top Master's Degree level, is a more advanced form of teaching, there will be a substantial amount of project work with short dissertations and again you cannot have too many of those. If it were entirely undergraduate, then you would perhaps relax the ratio a little. But I think these are, these depend on your expectations of your staff. What you expect them to do. If you expect them only to teach, then it is reasonable that they spend more time teaching and have more students. If you expect them to keep up with their subject, perhaps a rapidly developing one, to do some research, to add to it, then you need some more time.

Prof. Panaretos: Let me raise one more point about the student-staff ratio, because I think this is obviously one of the important points of very much concern.
The question I want to ask is the following one. When the expansion started in England I think you had a student-staff ratio of less than 12 to 1. I understand that now the number has gone up and of course there is a concern for quality Once the ratio increases, then there is a concern of quality. Do you think that the new methods employed for teaching, when you have larger classes, will compensate for whatever loses have been caused by the increased number of students?

Dr Page: Yes, but I think you are in the wrong order of magnitude in your student-staff ratio. I mean in late 1970's, in 1980 it was unusual for a department to have a ratio of more that about 10 to 1 even in the humanities. In the scientific disciplines it would be no more that 1 to 6, 1 to 7. Now, we have not quite doubled those figures but that is the case.

I think, again, a subjective view. I do believe that we have very largely improved our efficiency in the teaching of our students. There is a greater awareness among our staff that teaching is a job. When I came into the university it was, all right you taught some students, certainly you did, but you were there to satisfy your own intellectual curiosity, a certain narcissistic existence that we are clever we all produce things, we are in universities to enjoy ourselves. Well, we do enjoy ourselves still and I am quite sure, but we all recognise we have a job to do, we have to communicate knowledge, to establish standards among our bright students.

Prof. Sterling: Gentlemen, if I could just come back to the SSR, the student-staff ratio, the universities, that is the old universities, during the 80's essentially tried to defend the student-staff ratio with the help of the University Grants Committee and later the UFC. But the problem was there was competition in the system. And our colleagues in the polytechnics sector chose to drive down ..... [not heard, end of tape]

Prof. Sterling: [inaudible]
..... towards the end of the 80's did the numbers actually start going up very rapidly. So, that was effectively competition, undermining a cartel operating. If you had just been the old universities I think we would successfully have defended the student-staff ratio.
An earlier point was, is there an ideal, effectively, is there an ideal size of department as far as the student population is concerned? Well, I would suggest that one of the factors one would look into is the management of that department. What is the ideal management size for the staff? How many staff can one person supervise? Is it 20, is it 30, is it 50, before you need another level of management in between? I mean it depends upon how you break that down. From the vice-chancellors, to the Pro-Vice-Chancellors, to the Vice-Principles, or whatever you call them down to the Deans, to the Heads of Departments. And at what point is the department of 50 too big? It probably is. You actually fragment within the department of 50 into semi-autonomous groups within that.
So my own gut feeling is that it is around 20. But my colleagues may totally disagree with me on that. But that seems to be a manageable departmental size. Perhaps a top size of 30 before you start, I mean,

different structures, less efficient if you go down bellow 15, shall we say. But that I think addresses that.

Prof. Hanham: Can I just say one thing about the economics of this issue. Fundamentally governments are not in a position to increase the share of GNP and allocate it to higher education. Therefore you've had a situation in which in Britain you've had a clear intent to double the number of students. More resources have been put in. But essentially that increase in resources has stopped. And it is assumed that there would be level funding for the next 30 years.

Now, if you assume that, which is perfectly reasonable, my own prediction is that the level of funding will go down, because of the ageing of the population. That is, that medical costs and all those other costs will rapidly increase. And the majority of the population becomes over 60, which is going to happen according to the statisticians at a not too distant date. But, anyway, you've got a situation in which the amount of money that are going to be available for the young I believe will be going down.

Now in those situations, officials have to plan on the assumption of particular student-staff ratios. There is only one way you could do it. You look at the money, you look at the number of students and try to equate them. They then have to say, if those numbers look particularly horrendous, we are going to have to do what American universities have done, increasingly American State universities, divide your system into tears, and the pioneer there was the University of California. With the University of California system, the California State University system and the Community Colleges.

If you work on that sort of assumption, you may be able to contain classes. And at the moment there is an effort being made to move as much of higher education into low-cost institutions as is possible. That is particularly the further education colleges. Because anybody trying to do planning will see that there is an impossible economic problem.

But all this presupposes that you've also got to build-in a number of quality institutions, which are funded more generously. And how do you select those in a democracy? That is the fundamental question which everybody is talking about. And the reason why you and Dr Page are so upset about the use of these statistics is that these statistics are used by the press and by the politicians to decide which

universities will be in the category of those that are thought sufficiently serious to be deserving more funding.
The mechanism, that has been used in the past to secure that, has been special funding for Oxford and Cambridge plus, in effect, more research money in certain universities. And research money has been used to subsidise.
Now, I don't believe that this will be an easy thing to do in the future, but, whatever we start with, we've got to assume that the planners are going to have to work on a student-staff ratio that is not less than 25 to 1. Because that is what the numbers are. And the question is, at that sort of level some institutions are going to be functioning like that teaching only, working with large classes or with new equipment. Other institutions are going to survive very much in the old style.
..... [inaudible]

Prof. Panaretos: Yes, if it is on the same topic.

Prof. Siderides: It is about the economics. I would like to draw your attention to another problem that has been created. A lot of people here in Greece that have studied for long in Britain are in close contact with their counterparts, we have got the impression that your education system that we were proud of in the past, is a bit going down. And this is because you increase these indicators by decreasing the denominator and getting rid of some members of staff, which says to me that it is another parameter that you shouldn't pay so much attention to these indicators. We expect something more out of these numbers.
The quality of basic research that you had produced in the past, the last two decades, I haven't got any figures, it is my feeling. I will be very happy if you say to me that I am wrong. But it is a feeling that is being shared by a lot of people that you pay for that. You get out of the system, because you increase the performance by reducing the cost per head, etc., etc., but at the same time you pay with the reputation of the British institutions. And if I am wrong about it, please, comment and try to persuade me that I am wrong.

Dr Page: Well, I think you are basically wrong, but there is no doubt that in some disciplines, which have been very expensive, Britain has effectively taken the view that it will reduce its commitment and therefore reduce its activity. I mean, we see this in the struggles that

there are to contribute for example to expensive facilities like CERN and various other of these international things. But there are many other disciplines where the money has been focused and the quality and reputation have been maintained.
We said yesterday, Professor Hanham said and I agreed with him, that our own feeling is that since the research assessment exercise started the quality and quantity in fact of the research that has been done in universities has been improved. Now, I had some figures of my own university where I know that for example we have increased our share of the government money allocated and competed for from the research councils. I know that we have increased our income in real terms. And also in real terms per member of staff, because we have grown, from industrial sources. Now, these are sums of money which come to one in competition with others. The fact that some have won means that some may have lost. And we have increased our number of universities quite markedly.
I think you have to look now at whether all those institutions mean the same. Are they all what you have thought of as universities. And that quite really will not be the case. There will be universities that are predominantly teaching their students in an atmosphere in which knowledge is being added to. And that is principally the older universities in Britain. And their standards I think are still high and can hold their heads up internationally. I have much more doubt about newer ones.

Prof. Siderides: Excuse me, but this is not the research that I was talking about. I was talking about basic research not industrial research, not the government's money. And this is not a political question.
I have in mind great mathematicians that go out in the States. I have examples from Brunel for example. The last five years they have been to the States. And you may keep on loosing, I mean time and time again, people like this, working on basic research, pure mathematicians, fabulous ones. Or computer scientists, theoretician ones.
But for the industrial sector, we have these figures, too, in these universities here, in Greek universities. We get money, we increase the money for research or from the EEC, Brussels, etc. But this is not what exactly I am talking about.