JOINED-UP HIGHER EDUCATION
(A letter to my MP Lynne Jones)

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A letter sent to Lynne Jones MP at http://www.poptel.org.uk/lynne.jones/

1 Introduction

I heard you interviewed on Radio 4 at lunch time yesterday. I applaud your standing your ground against the spurious arguments of our New Tory government.

However, there are various points about the debate on universities that I have not heard anyone make yet so I thought I would try to write them down.

Maybe they have been made, but I missed them because I don't read and listen enough, as most of my energies are focused elsewhere. Apologies if this is all old hat. Don't feel you have to read on. In case others are interested, I shall put this on my web site at http://www.cs.bham.ac.uk/~axs/gov/

My main point is that it is just silly to talk so much about universities and top-up fees without putting universities in the context of a complete policy on post-school education. What I am offering is not a detailed policy, but a framework for thinking about the problem. Perhaps someone has already done this but I have never heard it mentioned in any of the public debates. I suspect that's because this top-up fees issue is not part of a coherent policy but just a sort of religious commitment to a "new way", like other things done by this government.

I start with some comments on the fees issue, then go on to talk about how to think about post-school education, distinguishing several categories that need to be separated and funded differently as part of a joined-up system.

2 The fees issue

2.1 The undiscussed cost of top-up fees

The proposal to have top-up fees and loans and exemptions, and earnings-related repayments, will require a vast extra amount of administration, extending over many years for each student.

Has anyone tried to cost this?

Compare the simplicity of an earnings related tax for everyone, combined with free university education and grants for the needy (with people thrown out if they don't perform well). This must be MUCH cheaper to administer.

How many extra civil servants (and computer programmers) will the other scheme require?

We shall all end up paying for this extra administration.

2.2 Fairness is in the eye of the beholder

The argument that the people with university education get most benefit, and should therefore pay most, ignores the fact that we already have a tax system that takes tax from ALL of us and pours it into all sorts of things other than things that benefit every taxpayer. E.g. childless people pay tax to help schools. Healthy people pay tax to provide medical services for others. People opposed to bombing other nations pay huge amounts of tax to pay for bombing raids that put us all at increasing risk from terrorists.

Moreover, who benefits most depends on what you measure. Most people evaluating the public benefit of university education concentrate on how better educated people help to make the nation rich through their inventions, high quality labour, etc.

But there are other important consequences. If better educated people produce children who are better informed, better citizens, then the nation benefits from that. Can that be measured? Has anyone tried?

If people who are better educated have more money then they can look after the needs of their children better, so that they are healthier, are less likely to be criminals (apart from white collar criminals?) and impose a smaller burden on medical, social, police and prison services.

Has anyone tried to quantify those benefits?

I think the arguments about fairness are just a sham: the New Tory government does not want to offend its rich supporters by generally increasing the tax contributions from higher earners, so they pretend they are not doing it and will collect loan repayments instead. But that's just another way of getting higher contributions from higher earners, except that it is far more complex, costly AND involves a *delayed* payment for funds that are needed NOW. On top of that it makes deciding to go to university more difficult for poorer students, even if, as supporters of the scheme claim, many will eventually go anyway. What proportion, I wonder? All? Or will there be a residue turned away by the system who are disregarded by statisticians? Those who go will then have the worry of debts for many years and this can be a serious constraint on further decisions.

As you pointed out in the interview: there are plenty of people who can pay more now in return for the benefits they had when they were students. That's far more sensible than trying to fund universities from loans that will not be repaid for many years. ALL taxpayers will presumably have to pay interest (and lend the capital) in the mean time.

So one way or another, ALL taxpayers are going to contribute whatever happens. So let's have the administratively less costly scheme, which also has far less risk of being very unfair to the poorer students.

3 Universities and Universities, and others

But an equally important question is what universities are for, how many types there should be, and how they fit into a larger system. That question needs to be given a well thought out answer before funding requirements and funding methods can be discussed sensibly. None of that has been mentioned in the parliamentary debates and others I have heard regarding top-up fees. Even vice chancellors, who should know better, rub their hands with glee at the thought of at last getting more money for universities, without considering the wider context (including the fairness and cost issues mentioned above).

Like many others, you mentioned the government's target of 50% for university education, which you appeared to favour. Some critics have understandably asked why the figure is so high, given the distribution of abilities and motivation in the population. Making the university intake target too high (apparently for purely ideological reasons that have nothing to do with what the students are capable of) spuriously makes universities too expensive for the nation to afford.

An alternative criticism is to ask why the target is so low if construed as a target for continuing post-school education, including university education. Why don't we hear about the full range of higher education in a coherent, comprehensive policy?

What we need is a "joined-up" policy for higher education that identifies a range of educational needs and then provides the services to meet the needs.

I shall try to describe a range of different sorts of needs and provide guesses regarding percentages for each. I don't stand by the exact numbers: they need some research.

Drop outs

Some percentage, call it NN (for "not now", will want no more formal education immediately after leaving

school – e.g. because they can get well-enough paid jobs, they hate formal education, they have children to bring up or other family pressures, they live too far away from a suitable institution and cannot travel, etc. etc.

I don't know what NN is or should be, but I hazard a guess of about 20% as a long term minimum. Is that a good estimate? Do you know the current figures?

So (100 - NN)% (e.g. perhaps as many as 80%) of recent school leavers should be having some sort of higher education, perhaps some of it part time.

Late learners

At any time there will also be several types of *late learners*, who left education and later wish to return, including

1. **Late deciders:** people who decided to go straight to work after school and later change their minds
2. **Changers:** people who lose jobs and need to acquire new education in order to get new jobs, or who want to move to a better or different type of job
3. **Pure learners:** retired and unemployed people who want education because it helps to make life worth living, by giving them a challenge and enabling them to meet other like-minded people.
   Some of them will acquire new knowledge and skills that enable them to be of service to the community.
   (I have heard it claimed that high levels of intellectual activity helps delay Altzheimers. I don't know if it's true but it's worth paying a lot for if it is true.)

I don't know how the numbers of returning "late learners" compare to the the total number of school leavers at the time. Call the percentage LL. This increases the figure in post school education to

(100 - NN + LL)%

of school leavers. The numbers of "late learners" will go up as the numbers past retirement go up, so they must be included in long term planning.

If LL is likely to get as high as NN, or higher, then we need to plan for a system with the equivalent of 100%, or more, of recent school leavers in formal higher education of some kind!
(Remember: "education, education, education" ? How fast the echoes fade.)

Whatever the figures, we need to plan an educational system to include a large percentage of school leavers and a growing number of "late learners" of different types, all in post-school education. A coherent policy should take account of that.

Those numbers will be split into several categories of different sorts, which I list below with some guesses as to proportions. In each category there will be some "late learners" as defined above. The numbers are wild guesses, but I am trying to make a point that does not depend on the accuracy of the numbers.

We need at least five categories of educational institutions. Some of them already exist, but to get the full range we'll need to split the universities into (at least) two main groups with different functions and funding arrangements for reasons given below. Some institutions may wish to straddle different categories ("Comprehensive Colleges") but I ignore that now. The government hopes to achieve the split *by stealth* using market mechanisms. Instead, it should be part of an honest, explicit policy.

3.1 Categories of higher education

The five categories are Training centres, Polytechnic Universities (PUs). Research Universities (RUs), Star Centres, and Distance learning centres.

For now I am including teaching hospitals with universities, though some could be separate. There may be a need for other categories, or for finer sub-divisions. E.g. some might suggest 'extra-mural' centres as a separate category. See below for more on that. Whatever the subdivision, we need a coherent, integrated policy. (Compare transport!)

A. Training centres

A proportion (call the number AA, maybe 30%-40%??) of school leavers, including some of the late learners, will wish to go to go to training colleges, technical colleges, music schools, drama schools, nursing colleges, horticultural colleges, book-keeping and clerical training colleges, IT colleges, sports colleges, etc. etc. Some will take on apprenticeships, possibly combining on the job learning with some formal training and assessment.

Many of the centres will combine different training functions, sharing resources to good effect and also making possible mixed training, e.g. for students who wish to hedge their bets.

These institutions could offer courses taking as little as a month or as much as several years, including part time courses for people learning on the job or while bringing up a family. Some will offer certificates and diplomas achieved by taking modules that could be spread out over a long time. others will require intensive full time education.

These students want to learn very specific skills from well qualified dedicated teachers who typically are not researchers (though a small subset may be), and many of whom will themselves have learnt on the job.

Perhaps this would include people who join the army or navy in low ranks.

Most, though not all, of the courses will not require exceptionally expensive facilities (e.g. research laboratories) nor huge amounts of one-to-one or small group teaching. Many will be able to benefit from computer-based systems which do some of the teaching, some of the assessment and much of the management of learning. The teachers will generally not be as expensively educated as university teachers and it is likely that average salaries will be lower than in universities.

So most of these centres will have a fairly low cost per student, whereas others may have a higher cost. You can't teach violin playing in large lectures.

B. Polytechnic Universities (PUs)

A roughly similar proportion (call it BB, perhaps 25-40%) of school leavers (plus additional numbers from the "late learner" categories) should be able to go to what might have to be called a 'Polytechnic University' (or 'Technical University?) to get a 1, 2, 3 or 4 year diploma or degree course which is quite intellectually demanding and many, though not all of which, will require students to have A-level or equivalent grades, but not necessarily very high ones.

Some of these programmes will be fairly closely geared to the needs of a particular type of job. This could include things like primary school teaching, middle grades in nursing, the police, social services, administration, and a range of technical, administrative, and lower managerial jobs in commerce, industry and government.

Some of the courses will be more generic, e.g. extending education in mathematics, various sciences, English, other languages, history, geography, social science, etc. without aiming at specific jobs. However graduates from the generic courses may then go on to on-the-job training where their general education would be helpful, or might switch to more vocational post-graduate courses (e.g. teacher training, various kinds of industrial training, business training, admin training, medical technician training, etc.) which build on the higher level general education the students will have had.

Many of the PUs will also offer short courses and consultancy for local industry as many UK polytechnics did successfully for many years.

The polytechnic universities (or other specialised centres in category A) should also be paid to include six month and one year 'catch up' diplomas for people who are not yet up to the level required for Research University intake (category C, below) but would like to go to a RU and who appear to show adequate potential. There should be special support for students from poorer backgrounds and ethnic minorities who could use this as a route to research university, provided they meet the required standards eventually.

Note: *Allowing under-privileged people to come in to research universities by the back door by lowering*

standards for them is a recipe for disaster. Either that will require university standards to be lowered for everyone – as has already happened over the last ten or fifteen years for various reasons (including pressure to keep up pass rates) – or else many of the people let in without adequate qualifications will end up sinking instead of swimming, which is demoralising for them and a dreadful waste, if they did have the potential to benefit from a 'catch up' course.

The teachers in these polytechnic universities would mostly NOT be researchers, but will need time to keep themselves up to date, to find out about new text books, to develop new courses, etc., and should also be allowed opportunities for refresher courses. In general they will be university graduates, but most will not need PhD level training in order to do their jobs well.

It should be possible for some departments or groups or individuals within PUs to get research funding, and attract PhD students, as used to happen in the old Polytechnics. But the vast majority of staff will perform an important national service and gain high job satisfaction and rewards like promotion from being excellent teachers, also doing their share of administration. Some may produce and possibly sell excellent teaching materials that will be used by others.

Many of us have heard of dreadful examples of cases where such people, after many years of dedicated, high quality service, were made to feel unwanted and inferior because they were not doing research, getting grants, and producing publications – as a direct result of the conversion of Polytechnics to Universities: depriving the nation (and especially a subset of school leavers) of a very important educational service. Some ex-polys are now drifting back to that role but in a fudged system where it is not clear to school leavers or anyone else what exactly is happening. Having a clear label for such institutions, and a proper career structure for dedicated teaching staff, is a requirement for the system to work.

Because these teachers will mostly not need research facilities, and because they will mainly be doing only teaching and administration, with no research (apart from the kind of study required to keep courses up to date) they will have more time for teaching than staff in the next category. For this and perhaps other reasons related to a lower requirement for reading and commenting on individual essays and projects on advanced topics, the student/staff ratios can be higher and therefore the cost per student will be lower.

This does not mean that the teachers should necessarily be paid less than those in research universities, merely that their job will be different, though equally important.

C. Research Universities (RUs).

A third category of school leavers and late learners (call the proportion CC, e.g. perhaps 25% to 35%, or maybe 40% if standards in A levels go up?) will take degree courses in Research Universities.

Some of the courses will be vocational, but many, or even perhaps most, will extend the depth and breadth of students' understanding in generic fields (e.g. one or more of the sciences, mathematics, humanities, arts, etc.) while at the same time offering highly demanding training in analytical, critical, and synthetic thinking and writing, with a very strong emphasis on learning how to learn things that are not on a specific syllabus and also learning how to constructively and creatively criticise what they are taught, what they read, what others say and think.

The graduates will include the most important revolutionary thinkers in all walks of life as well as highly qualified experts of many kinds.

Unfortunately we already have far too many students in universities who neither want that sort of education nor are capable of benefiting from it. Perhaps they have the potential, but their previous education failed to realise it. Keeping them in the system lowers standards for everyone, demoralises the teachers, and adds to the cost of universities. It is in this context that I think a target of 50% at university is daft, unless it is based on a very clear distinction between different sorts of universities with different functions (and costs).

Some degrees will start generic and then become more focused, e.g. medical degrees requiring a lot of general science in the early years; also business studies, various kinds of social sciences or engineering

degrees. A degree in computer science might start with deep explorations into the nature of computation along with links to several other disciplines (e.g. including mathematics, philosophy, psychology or biology) and then narrow down to a specific application area or a theoretical specialism pursued in depth.

All of the degrees will have substantial components every year that involve independent projects or dissertations with close supervision.

All of these degrees will require applicants to have high grades at A-levels (or equivalent) for entry, but not with watered-down A-levels as we have now.

The degrees should be very demanding in prior knowledge, in intellectual qualities, in effort, and in motivation, but not in race, colour, creed, gender, social class or ability to pay.

As mentioned above, there should be special 'catch-up' courses, possibly offered by Polytechnic universities, or perhaps special colleges if the demand is high enough, for students from under-privileged backgrounds who have not yet reached the required standard but show some promise. This could also be useful for some late learners who want to go back to university education but need preparation.

Cross institution transfers:

There should be an easy route for people who find the RU degree programmes too demanding to transfer to a PU after the first term, or after the first year or the second year, instead of, as now, either being thrown out, or forced to struggle through something they are not suited for or not motivated for, thereby putting pressure on standards to be lowered for everyone.

Likewise there should be well-publicised opportunities for people who do outstandingly well academically in PU courses to transfer to a research university if they wish to.

The RUs will also, as now, teach advanced degrees, including masters degrees, including *cross-discipline 'conversion' masters degrees* and other higher degrees. Each research-active member of staff will tend to have at least 2 or 3 PhD students at any time (approximately one new one each year), though some will have many more and some will have research areas that are not attractive to many PhD students.

Some proportion of staff, though probably not more than half, and possibly less will also have externally funded research projects paying for one or more research fellows, extra equipment, extra conference travel, extra PhD students, etc. Some people will have several grants and some will have none. Not getting external grants should **not** count as evidence of inadequacy: many sorts of research do not require grants, and grants can sometimes add spurious and distracting obligations. (The proof of Fermat's last theorem did not require Andrew Wiles to have research grants and research fellows, etc.)

But this means that the assumption should be that normal employment arrangements cover the default research requirements. (Universities used to use the phrase 'well-found laboratory' to describe this.)

Teaching costs

The teaching in RUs requires a great deal of individual attention (including critical marking and discussion of individual essays and projects, often, in the case of better students, requiring the teacher to read up new material that the student has discovered), along with a lot of small-group teaching which is no longer affordable in universities though it used to be.

All this is part of what makes teaching in research universities expensive, and will need to be restored if university educational standards are to be restored.

The other part of what makes the cost per student high in RUs is that the teachers are mostly also researchers, as indicated above.

The present government, like the last, seems to want the researchers to keep getting their own funding for research. But this is dreadfully inefficient and demoralising. Moreover, it is really impossible for committees to judge who is going to do good research or which research areas will turn out to be important in the long term. So the competitions for funds are often just a lottery, or a sham or a farce, depending on how you look at them. Which ever way, putting too much research funding into competitions is very wasteful as it drains effort and has a high administrative overhead, compared with the alternative of

carefully selecting people for posts who are good teachers and promising researchers and then managing them in a supportive and constructive fashion, which includes getting those who are less successful or who lose interest in research to take on heavier teaching and administrative loads.

I.e. provided that we do not foolishly try to support too many Research Universities, it is more productive to provide funding by default and require universities to ensure that the people who turn out to be not so good at research or who lose interest, compensate by taking a higher share of teaching and administration, as has always happened (though perhaps not often enough in the past).

This may mean that funding based on the assumption that only 40% of staff time, *on average*, is on research will suffice, since for most it will be more like 50% and for others much less. Sabbaticals and externally funded grants may allow the truly outstanding researchers additional time and resources for research.

The majority (between 75% and 90%) of the teaching staff in the RUs will be active researchers and they will be frequently updating their courses to include new research results or teaching requirements. In larger departments probably 75-80% of research-active staff will suffice as more specialised administrative abilities will be required for managing large numbers of students, including admissions, examinations, discipline, etc.

The line between teaching and research will often be blurred, especially with more advanced students. and the balance may vary between individuals.

Normally, in order to fulfil their function, staff in RUs will need to have a PhD or equivalent experience, and will have demonstrated before their first appointment that they can do excellent research and publish it. This will potentially make them more expensive than staff in PUs but traditionally the benefits of job satisfaction (much in decline now) academic freedom and collegiate university management have compensated for lower salaries than RU staff could earn elsewhere.

D. Star centres.

I don't know what the figure for this proportion (DD) should be, but I suspect it is likely to be below 5%.

There will be some artists, musicians, and athletes who tower above the majority, with the potential to be international stars. These will need special centres and special training or coaching, with a great deal of individual tuition, often starting while they are still at school, in order to produce finely honed skills of the required sort.

It may be possible for some of this to be done in the other centres, though in some cases it may be best for a small number of national centres to be set up to bring the stars together, where they can compete with and inspire one another. This could include outstanding music, drama, art, and sport centres.

Perhaps this could also be done for more academic subjects while the stars are still at school, but if RUs are properly managed and funded the academic should fit well into them.

In particular RUs should teach degree courses that allow young academic stars to learn to fly, as was possible in the past, instead of the changes of the last few years towards standardised modules in standardised 'modular degrees' that pull everyone down to the same level.

E. Distance learning centres

Some proportion (call it EE perhaps 10-15%?) will not be able to attend normal degree courses, and may have to learn mostly in their own time because of family or job commitments, ruling out attending of lectures and seminars in a normal university. They may also be unable to devote a continuous stretch of time to a degree course, preferring to spread the work over a long period perhaps with some gaps. Some will live too far from any sort of university.

As far as I know the Open University caters very well for this category and it should be well supported for the task. Perhaps there are, or should be other institutions offering similar opportunities, as there are for

A-level courses done by correspondence colleges.

At present the OU also functions as a research university. I can see arguments why a distance learning centre should do that, and arguments why it should not also be a research university. Perhaps the answer is to allow both to exist, and perhaps supply different needs.

3.2 Different costs

It should be clear from the above that there will be considerable differences in the cost per student at the different sorts of organisations described above. In particular training in Star Centres will be particularly expensive because of the amount of specialised individual teaching required, which will lower the maximum acceptable student/staff ratio.

In Research Universities the amount of individual (one to one) teaching will be less, than in Star Centres, but the costs will nevertheless be high because so much of staff time should be for research. There will also often be requirements for expensive, up to date, equipment and highly qualified technical staff to support the teaching as well as the research in the RUs.

This is why it is daft to aim for too high a proportion of students going to research-led universities: it will be doubly a waste of money if (a) many of the students cannot cope with the sort of degree standard expected in an RU, and (b) it is hard to find enough high calibre staff to justify the high levels of research expenditure. It is arguable that this situation exists and as a result many of the really good researchers are being penalised by very low funding levels because funds are spread too thinly. As suggested above using competition to remedy this is a mistake.

So the clear answer is to go back to something like the old distinction between polytechnics and universities. Since this is probably politically unacceptable, the next best thing is to have labels for two kinds of universities, as suggested above. This occurs in some other countries.

The government is apparently trying to achieve this 'by the back door' by allowing some universities to charge more for their courses, without having to give the real reasons for the higher charge per student.

Doing it by stealth is unfair and confusing to students, (a) because it does not make it easy for applicants clearly to identify the type of university that will meet their needs and ambitions and (b) because it conceals the fact that high fees in research-led universities are needed in part to offset the cost of having researchers as teachers.

Moreover, if we allow "University" to cover both RUs and PUs, then it could be argued that 50% is *too low* as a target. It's time for a more coherent, realistic, policy.

3.3 Will it be divisive? Pay teachers in PUs more!

Yes of course it will be divisive, but no more divisive than having different football leagues or having distinctions between medical and other degrees within the university system, or having special colleges of music within the higher education system, or having both a navy and an airforce with different requirements and obligations.

I don't remember complaints in the old days that having polytechnics clearly distinguished from universities was dangerously divisive. They performed different functions, functions which the nation, and school leavers, and often local industry, needed to have clearly differentiated, and many of the polytechnics were quite outstanding in their role. Some also managed to have pockets of high quality research.

However the differences of status may make it hard for polytechnic universities to attract enough really good teachers, since most will prefer jobs in research universities.

In part this will be dealt with by the requirement for most RU teachers to have PhDs.

However, in order to ensure the quality of teaching in PUs it may make sense to address this by allowing them to offer slightly higher starting salary levels to reflect the fact that the teaching loads will be much higher and the 'kudos' for doing research will not be available, but since the jobs are important for the

nation, good people need to be attracted into them.

Soon after I started my first lectureship in the early 1960s another new lecturer complained to me that one of his former fellow PhD students who had gone to a polytechnic was earning a higher salary than he was. I asked him if he would be prepared to move to a Poly in order to get the higher salary. He said No. That convinced me that there was no injustice.

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