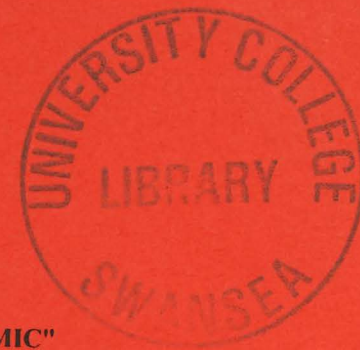


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"THE VIABILITY OF THE ACADEMIC"

by

Sir John Meurig Thomas, F.R.S.

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The James Callaghan Lecture

University of Wales, Swansea

10 February 1997

THE VIABILITY OF THE ACADEMIC

by

Sir John Meurig Thomas, F.R.S.
(Master of Peterhouse, University of Cambridge, and Professor of Chemistry, Royal Institution of Great Britain, London)

1. Introduction

I am greatly honoured to have my name linked with that of Lord Callaghan, of whose public service as a politician and statesman I have long been an admirer. No one who has read his famous Ruskin College speech in Oxford, October 1976 — a speech which initiated widespread debate on education and which, amongst other things, made the case for a national curriculum — or who has read his Ruskin twentieth anniversary speech at the Institute of Education, University of London, October 1996, can doubt his commitment to the just and good society. Among the many important statements to be found in his London speech, of which more later, is the following:

“Getting young people into work, reducing adult unemployment and poverty, creating a sense of hope for the future, are absolutely essential in building the good health of society and in making education relevant to those who feel society excludes them.”

It was my good fortune to have begun my academic career here in Swansea in 1951, at a time when the attraction, charm, vitality and importance of higher education (HE) in this country were far greater than they are nowadays generally perceived to be. At present it is widely felt that HE in the UK is in a state of turmoil, especially so after

the succession of major changes introduced by the Government in 1988 and 1992. And few would dispute that, following the upheavals imposed by Mr John Patten (who, as Secretary of State for Education passed a major education act through Parliament in each of the years he was in office¹), secondary and primary education are likewise — perhaps more so — in a state of near crisis.

It would be an exaggeration to say that all academics are perturbed. Mercifully there are still plenty of gifted, bright-eyed young people entering our system first as undergraduates, later as research students, postdoctoral workers and junior members of staff. I am privileged to be surrounded by such impressive people. It is heart-warming, and it fills me with hope. But when I talk to older academics the situation is very different.

What has gone wrong? Why is there so much gloom, doom, doubt and despair among the older generation of academics? Why is it that so many devoted and excellent academics now feel that the system is suffering such strain? Is all the pain and anguish attributable solely to, or mainly to, the relentless driving down of the unit of resource — the amount of money that universities receive per student per year? (Since 1975 there has been a drop of some sixty-five percent in the unit of resource.) Many academics who, twenty years ago, possessed zest



and optimism and proclaimed an unshakeable faith in the pursuit and promulgation of knowledge, now openly declare that they welcome the thought of retirement from HE or SE, retirement which they are increasingly inclined to take prematurely.

Part of the aim of my talk is to analyse the significant changes that have affected the nation's entire educational systems. It is also partly my aim to identify some of the key issues that now need to be resolved. I realise that this is a vast topic, highly relevant to the subject matter on which Sir Ron Dearing's committee is now deliberating.

2. *As things were*

It is universally agreed by those academics who are old enough or otherwise qualified to testify that, thirty years ago certainly — even fifteen years ago — HE in the UK was arguably the best in the world. It was very good because of its *efficiency, thoroughness, uniformity of strength* across the entire university sector and also because of the *democratic character* of entry to it. It is appropriate that I should briefly amplify some of these attributes.

HE in the universities of the UK was *efficient* because, in three years, more-or-less in any subject with the exception of medicine or veterinary medicine, students graduated with a well-rounded bachelor's

degree, a degree deemed to be roughly the equivalent of a master's degree in the best of the Ivy League institutions of the USA — Harvard, Yale, Cornell, Stanford, etc.

In those days the difference in quality of teaching (and subject matter of the courses) between the best and the worst universities — and by using the word worst I do not mean to imply that any were bad — in almost any department was never more than a factor of three or four. Often the best department in a particular subject was not necessarily to be found in Oxbridge, Imperial College, Edinburgh or Manchester but in less fashionable centres. Thus, twenty-five years ago, in biochemistry, for example, it was Leicester and fifteen years ago Dundee, which had the primary department in the UK. One of the best departments of mathematics was at Warwick, of natural product chemistry at Glasgow, of physics Bristol, of medicine Cardiff. And in all four departments of chemistry in the University of Wales (Swansea, Aberystwyth, Bangor and Cardiff) the undergraduate teaching was second to none, and much of the research work, but not all of it, conducted in these departments was of international calibre.

Moreover, such was the general thirst for knowledge and zest for higher education in its widest cultural context at that time that undergraduates, like me at Swansea, shared an exhilarating feeling of

liberation and liberalisation. With a good central library, good equipment and the high morale engendered by members of staff, one was also aware of being part of the noble quest for knowledge, applicable or otherwise. It was, incidentally, during my undergraduate days at Swansea, that, thanks to that superb head of the College John (later Lord) Fulton,² I came into contact with the wisdom of the ancients through the general lectures given to undergraduates by our Professor of Classics, Benjamin Farrington and many other distinguished academics. This is how Farrington introduced his monograph on Francis Bacon (1919):

"The story of Francis Bacon is that of a life devoted to a great idea. The idea gripped him as a boy, grew with the varied experience of his life, and occupied him on his deathbed. The idea is a commonplace today, partly realised, partly tarnished, still often misunderstood; but in his day it was a novelty. It is simply that knowledge ought to bear fruit in works, that science ought to be applicable to industry, that men ought to organise themselves as a sacred duty to improve and transform the conditions of life."

All this, I hope, convinces you of the thoroughness and comprehensive, all-embracing quality of undergraduate education in a

university college, not untypical of others in the Kingdom, that was at the geographical periphery.

Entry requirements were high. You certainly could not get into any university in the UK with the kind of A-level grades (two Es and a D or three Es) now regarded as acceptable in rather too many of our present institutions. Entry was also democratic, by which I mean that, provided the student had the ability and potential to benefit from university education, he or she encountered no financial hindrance to pursuing his or her career. Expectations were high, both on the part of staff and students; and failure rates genuinely reflected the spectrum of abilities that the university system was intended to assess.

So, in summary, we had a system that was *thorough, fair, effective, demanding*; and it was regarded by other countries as an outstandingly effective one, considered by many as I said earlier, to be among the best in the world.

I said *fair*. It was not really fair in that only some 3% or so of the teenagers in this country entered university. The Robbins Report in the early 1960s and the Hale Report later, rightly argued that University Education should be available to a larger percentage of teenagers. I have forgotten which of these Reports it was that pointed out that, per 100,000 adults in the population, the number of students in the U.S.A.

who completed their Ph.D.'s was twice the number that did so in the U.K. And let me remind you that, whereas the initial bachelor degree in the US in the 1960s lagged a good deal behind the bachelor degree in this country, the US Ph.D. then as now is roughly one and a third to one and a half times as advanced as the UK Ph.D. This, of course, has important commercial as well as other consequences.

3% as a participation rate was considered to be and indeed was inadequate. And so we had the post-Robbins expansion that brought the rate up to 7%. New universities like Lancaster, York, Sussex and Essex were created. Although there were some Jeremiahs who preached "*More means worse*", their voices were not heeded. And rightly so. There is no doubt that some of those voices of protest against relatively modest expansion claimed to be defending standards, but many of them, in reality, were simply seeking to defend old privileges and inequalities.

3. *As Things are Now*

Since the passing of the so-called Great Education Reform Bill in 1988, and especially since the further changes introduced in the HE and FE Acts which Parliament passed in 1992, we now have approximately

30 per cent of our teenagers entering university. Moreover there have been numerous other radical changes:

- There has been a doubling in the number of universities — we now have 102 in the UK.
- The binary line separating the polytechnics and universities has been abolished.
- The range of so-called academic subjects offered at undergraduate level has been hugely increased; and the difference between the best and worst departments in certain mainstream subjects is now a factor of some thirty to forty. (Degree courses are now offered in subjects such as floristry, garden management and golf studies.)³
- Entry requirements in many universities have been considerably relaxed.
- University management has been remodelled on the basis of business and industry. (To quote one eminent critic¹ "*Their promotional literature and public statements are increasingly couched in language which might even make a hard-sell public relations executive blush*".)
- Excessive emphasis is now placed on audit and transparency. Performance indicators loom ever larger in the language of the academic. That which can be measured inevitably tends to be

regarded as important, irrespective of its intrinsic value. By "*mistaking the measurable for the valuable one entrenches a mentality of uniformity and compliance, and generally imposes the idea of control in lieu of the search for truth and originality*"^{1,4}

- The unit of resource has been relentlessly decreased,⁵ and so have staff : student ratios.
- With the inevitable consequence of the earlier elimination of O levels and their replacement by the inferior GCSE examinations and with the phasing out of traditional single-subject A levels (in physics, chemistry, zoology etc.) and their replacement by 'general science' courses, attainments at A level have decreased. Consequently, universities have increasingly tended to introduce four-year undergraduate courses in an effort to maintain the standards of the bachelor degree.

Before we can begin to identify the key issues that affect the viability and credibility of the academic we need to examine the far-reaching changes that have also occurred in secondary education.

4. *Interface Between Secondary and Tertiary Education.*

It is extremely sad to observe that our state schools have, in general, not been functioning as effectively as they were say 40 years

ago. The reasons for this are varied and complex. Starvation of funds, lack of equipment (books and apparatus) and poor pay for school teachers (is it right that we should be paying teachers so little?), all reflecting a lack of respect for the role of education in the community.

I am not alone in believing that immense harm was done to the morale and work of teachers in the state schools in the 1980s by the alienation of the teaching professions. The cavalier and combative treatment by a succession of Secretaries of State for Education from Sir Keith Joseph onwards, "*Who*", to use Lord Callaghan's words in his London speech,⁶ "*hardly seemed to care whether they had the support of the profession or not, was all part of the Government's expressed disdain for the public service in all its aspects.*"

Up until some twenty years ago, both in and out of the classroom, schoolteachers were among our most respected and vital public servants. Their cause, and certainly their status, has suffered greatly because of the political dogma that generally undervalues public servants and public service.

In the wake of such buffeting many experienced and valued individuals who had devoted their lives to schoolteaching left prematurely. Subsequently, when the full impact of the crisis began to be appreciated, efforts were made to induce more graduates to enter

schoolteaching. But these have not been very successful. The damage done was deep-seated. It is a horror statistic to quote, as Lord Callaghan did in his London address⁵, that “*seven out of ten secondary schools cannot recruit suitably qualified staff to teach mathematics.*” How can we possibly meet the needs of either society or industry when, as a result of the above shortage, a growing fraction of our secondary schools products are so innumerate?

In his retirement address as Chancellor of UMIST, Sir John Mason, former Director-General of the Meteorological Office and Treasurer of the Royal Society, remarked⁷ that:

“The deterioration of our whole educational system is the result of having had no long-term consistent strategy that treats the various sectors as being inter-dependent, interactive parts of a continuum.” ...
“The decision greatly to expand HE before attending to the schools was like adding an extra storey to a house with crumbling foundations.”

George Walden took up the same theme in his admirable book⁸ “*We Should Know Better*” when he criticises the Universities, as represented by the Committee of Vice-Chancellors and Principals, for opting for the much more expensive method of curing our nation’s educational ills by adding a fourth year to university undergraduate

courses, instead of addressing the basic problem lower down the educational ladder.

We must welcome the arrival of the *National Curriculum* (now that Sir Ron Dearing has simplified it and made its implementation more workable). But we must have all been appalled by its initial Byzantine complexity, and by the deep-seated suspicions that successive Secretaries of State exhibited towards those beleaguered teachers who had to implement it. We remember the many fiascos when a fresh edict was issued from Central Government, hardly before the preceding one had been received by the schools.

One cannot help thinking that George Walden is not far from the truth when he talks of the class distinction that plagues our secondary education system:
 Briefly, 7% of the pupils are in private schools 93% of the pupils in state schools. But the professional classes and higher earners — doctors, lawyers, directors of education, and certainly almost all the Government ministers responsible for legislation on Education — send their children to the private sector — at least in England, not so much in Wales — where it is not even obligatory to implement the national curriculum — where it is not necessary, as in the state schools, for the

(relatively well-paid) teachers there to jettison the traditional maths, physics and chemistry three-subject A level for 'general science' and other general courses as it is obligatory to do in state schools.

Walden quotes some interesting statistics. A few figures from the Table on p.43 of his book are revealing:

	State Sector	Private Sector
No. of Schools in U.K.	31,000	2,540
No. of pupils	8,883,000	610,000
Cost per secondary pupil	£2,250	£3,600 - £8,700
Entry to HE: %	27	88
Oxbridge: % of all entrants 1994	54	46

There are several revealing facts in this table, amplified in a compelling manner by Walden himself. One cannot ignore the fact that a pupil in the private sector has three times as much money spent on him or her than one in the state sector. And the fact that the seven per cent of the nation's pupils at private schools account for forty-six percent of the Oxbridge entry is remarkable. The reasons for this high percentage entry, however, are complicated. Admissions tutors in Oxbridge colleges always look for ability and potential in an applicant. They naturally look for applicants well grounded in basic principle and for evidence that the candidate has already acquired an impressive

knowledge base. They are inevitably (and certainly sub-consciously) going to be impressed by those candidates who express themselves well, who are versed in foreign languages, who are accomplished musicians or athletes. All this tends to favour the private sector applicant for even in the assessment of potential it follows that someone who has already surmounted the kind of hurdles encountered at university — say differential and integral calculus in mathematics or physics — is a safer choice than someone who, in the public sector, has not yet been exposed to mainline physics or more advanced mathematics and who, therefore, is more of an unknown quantity.

Increasingly, as one looks at the progression of students from secondary to higher education, it is being asked what proportion of students have the talent and the commitment to benefit from a truly demanding academic course?¹ Sir John Mason, whom I quoted earlier, leaves us in no doubt⁷:

“the present system which allows any student with minimal qualifications to follow any course or mixture of courses without regard to intellectual or vocational quality, utility, social or economic need, and at the taxpayer's expense is not sustainable.”

Look at another of the tables in Walden's book,⁸ (p.182)

Thousands of full-time 1st-degree students by subject
in F & HE 1993/94

	Males (x10 ³)	Females (x10 ³)	Total (x10 ³)
Mathematical Sciences	32.9	10.8	43.7
Engineering and Technology	58.1	10.3	68.4
Languages	14.9	34.2	49.1
Creative Arts	19.4	26.5	45.9
Education	2.2	5.8	8.0
Social Sciences	39.5	45.7	85.2

There are almost twice as many studying social sciences as there are the mathematical sciences. Note also that there are far fewer females studying engineering and technology than there are the creative arts or languages, a consequence, in part at least, of the disastrous collapse of the teaching of mathematics and the hard sciences at the secondary level.

5. *Some Possible Ways Forward.*

Confronted with such a bewildering array of problems, some of which could have been avoided by wiser political action, one is tempted to repeat the intervention in a House of Commons debate of the late Alderman Tudor Watkins, MP for Brecon and Radnorshire;

"What is the answer? That is the question!"

I am quite sure that talk of the formation of a super-league of universities is misguided. It is first class *departments* — and they can exist anywhere, Civil Engineering in Swansea, Space Engineering in Surrey, Applied Mathematics in Aberystwyth, English Language and Literature or Japanese in Cardiff — that we need to cultivate in our universities. And much can be done to encourage greater alliances between departments (in both small and large projects).

I am also convinced that we could do with fewer 'market-force' arguments in tertiary education. There are some things the market-force system does not do either very well or very badly. In the good society, to quote J.K. Galbraith, these are the responsibility of the state. (In many countries the market system provides good, low-cost food: not so low-cost housing.) In the good society there must also be attention to a range of activities, and education is one of them, that are beyond the time horizons of the market economy. This is true in the services, and especially in medical research. The market system invests for relatively short-term return. Much scientific discovery does not offer early or certain pecuniary reward. To support it is pre-eminently the responsibility of the state through university departments and research centres. The best example I can quote is in molecular biology and medicine.⁹ e.g. Transplantation surgery — now a huge and humane

activity that has enhanced the quality of life of millions — was made possible by the curiosity-driven, university-based research of Sir Peter Medawar on immunity and immunological tolerance.

The whole of modern medicine has been revolutionised by work that was undertaken (by Perutz, Kendrew, Klug, Milstein, Sanger, Crick, Watson — all in Cambridge) for purely scientific reasons. In no facet of their pioneering work was there an industrially relevant question that presented itself. Yet biotechnology owes its very existence to this work, which interacts so successfully with the now hugely profitable pharmaceutical industry.

It is for these and other reasons that I wish to see less intrusion of market force arguments in higher education and academically-orientated research centres. We could do with less prominence given to spurious performance indicators, less tendency for departments to be replaced by cost centres, less management mania and less emphasis on mission statements. (Rutherford and Linus Pauling, two of the greatest academics of the twentieth century, had no mission statement — neither did Socrates, Maimonides nor Mozart.) And as for the accountability mania, that paladins of the Treasury and others have forced upon the academic, is it not ironic that the principles of a system which so singularly failed to deter such enormous scandals as the Maxwell

pension fund fiasco or the collapse of the Bank of Credit and Commerce International should be wished upon universities as a measuring stick of their performance?

Universities need to be accountable. Anyone who has worked in a university knows that over the years many scholars have been allowed to rest on their laurels or indeed on unfulfilled early promise and have used the security of their tenured positions to lead undemanding and cosy lives. Some measure of competition and the compelling urgency that the business world thrives upon could, with profit, be introduced into academia. The true scholar — including the Rutherfords and the Paulings — has always worked on this principle. But the ideological pursuit of competition has often been inimical to educational advance, and in no facet of this nation's educational scene has this been more apparent than in the workings of the Examination Boards for A levels.

With the advent (and worship) of schools league tables, headteachers have been shopping around for softer options for their pupils. The A-level Examination Boards created more attractive (softer) examinations so as to increase their market share. The net effect was to drive down A-level standards.¹⁰

6. *Questions About the Nature of University Education.*

If the prime justification for the post 1992 sharp rise in student numbers was the need for a skilled and adaptable work-force to meet the demands of a fast-changing and a high technology society, one cannot but enquire whether the best way of responding to that need was to sanction the rapid expansion of the old universities. The question put recently¹ by the Chichele Professor of Medieval History in Oxford is relevant here:

"If higher education covers a wide spectrum of students with very different aptitudes and needs and is meant to serve a whole range of social and economic as well as academic purposes, is it best served by calling all the institutions who serve it 'universities' (thereby encouraging them to ape each other)?"

Before we answer this and related questions, it is timely to re-examine what we mean by university. According to Cardinal Newman,¹¹ who delivered his famous Discourses on *The Idea of a University* in 1852, a university "is a place of teaching universal knowledge".

"This implies," continued Newman, "that its object is, on the one hand, intellectual, not moral; and, on the other, that it is diffusion and extension of knowledge rather than its advancement."

This definition is no longer valid, owing largely to developments in universities in Germany in the second half of the last century and the early decades of this, both in the humanities and the sciences. It is valid in special circumstances where teaching is of primary importance (as in the special meaning we apply to *The University of the Third Age* — that imaginative venture for people who have largely retired from full-time employment — or for *The University of the Valleys*, another laudable initiative taken by this Institution). The *Open University* too, in its delocalised state — not the localised campus at Milton Keynes where there are research and language laboratories of various kinds — also falls in line with the Newman definition.

But these days, most academics would argue that the best university education is given where research flourishes. Where the teacher is as much a student as the student himself or herself is. "A student is likely to appreciate the uncertainty of knowledge at its boundaries if taught by someone who has experience of that uncertainty, and is likely to gain insight into the analytical and creative processes by which these boundaries are advanced if taught by someone who is working to advance them."⁹

One may deliver such higher education only if the academics themselves are of the highest calibre, and if the students are able and



committed. The top academic, entrusted with teaching and to undertake research, has to exude excellence, has to maintain his or her pre-eminent rôle as a researcher-teacher. And the students need the zeal as well as the ability to carry them through, and then to proceed to serve and function in the broader public community of which they are a part and by whom, in substantial measure, they have been supported financially and otherwise.

How does one proceed from here? How can we again make the British university system one of the best in the world? I am not at all confident that we can ever recover our former excellence; but we must explore some options.

For the reasons adumbrated earlier, I do not believe that the Thatcherite solution of outright privatisation, which the Government tried to apply, but failed, to the Medical Research Council four years ago, is the solution. It is already time, in my opinion, to re-introduce a kind of binary line so that most of the former polytechnics revert to their mission of providing largely vocational and technological training, rather than pursuing pure research. It should be made abundantly clear that polytechnics serve purposes quite different from those of universities that are equally valid and prestigious. The "new" universities ("old" polytechnics) have found it extremely difficult to

attract research income and, even more disturbing, have found that they were being outbid for students by the "old" universities. The establishment of "new" universities from "old" polytechnics has introduced "softer option" subjects because of the market pressure to attract students. To be specific, the "old" universities found that the only way of surviving financially was to expand student numbers so dramatically that both the sizes of their classes and the quality of the education they provided approximated ever more closely to that of the former polytechnics.

7. Epilogue.

I have touched only some of the issues relevant to the problems in Higher Education which the Dearing Committee, due to report early this summer, is in the process of trying to resolve. I have not, for example, discussed the relative sums of money spent by the British Government on primary, secondary, and higher education.

I have not compared what university education costs in the U.K. with corresponding costs in other European countries — the average cost to the state per student in HE is almost double that of France (£6,500 as against £3,500) and a third higher than Germany's.

I have not focused on whether the research monies available to universities should come exclusively from the Research Councils or from the University Funding Councils — my feeling is that there should always be research money available from Funding Councils to help particular universities put internal difficulties and discrepancies aright.

If the universities of the U.K. are to remain viable, concerted action to rectify the sad decline in secondary education is required from the policymakers in HE and SE.

In Wales, with smaller numbers to cope with, and where the percentage of pupils in private secondary education has been traditionally far less than in England, there ought to be a better prospect of developing a rational approach that builds on the interdependence of the secondary and tertiary education. I very much hope that due consideration is being given to these issues by the Higher Education Funding Council for Wales and the Welsh Office.

Of one thing, however, we can be sure. Given the nature of mankind's intrinsic curiosity and unquenchable thirst for knowledge, academics of one kind or another will always be with us. The aim must surely be to balance the intellectual freedom of the individual with his or her's duty to society and to the creation, maintenance and extension

of the nation's prosperity. The true academic knows that the secret is to live without certainty and yet not to be tortured and paralyzed by hesitation.

I am grateful to Sir Idris Pearce and Professor David Dilks for stimulating discussions concerning part of this lecture.

References

- ¹ The Chichele Professor of Medieval History at Oxford, R. R. Davies in his article "What is Happening to British Universities?" (*The Welsh Journal of Education* 5(1) 1995, 5, says:
 "As in so many other aspects of British public life, a culture of change for change's sake has become *de rigueur*, be it on the assumption that the current institutions have failed British society or, equally, on the assumption (almost Maoist in its conviction) that permanent change is the only way of preventing institutions and professional groups from becoming sclerotic."
- ² J.S. Fulton, who left Balliol in his early forties to become Principal at the University College of Swansea gave superb academic leadership to that institution. Apart from discussing the contents of essays read to him (four at a time) by 200 undergraduates each year, he instituted a series of general lectures that were compulsory for all first year undergraduates. Some of the

individuals (together with their lecture topics) that he introduced in one year were: Isaiah Berlin (Karl Marx), Charles Coulson (Science and Religion), Benjamin Farrington (Sir James Frazer and *The Golden Bough*), The Revd (later Archbishop) G.O. Williams (Nationalism), Sir Glanmor Williams (The Idea of Nationalism in Wales), Kingsley Amis (The Modern Novel), Florence Mockbridge (Evolution and Darwinianism), Stuart Hampshire (The Impact of Darwinism), E. V. Morgan (J. Maynard Keynes), F. Llewelyn Jones (Revolution in Modern Physics), Gareth Evans (Einstein), Neville Masterman (The Oxford Movement), C.H. Waddington (Modern Biology). Fulton spent little time fund-raising.

- ³ The satirical magazine *Private Eye*, so a friend tells me, once carried the following spoof advertisement:

**Heathrow University
(formerly Phoenix Carpets Plc)**

offers degree courses (undergraduate and post-graduate)
in "The Philosophy of Aromatherapy and Aerobics"

- ⁴ In *The Audit Explosion* (Demos, 1994) by Michael Power we read: "the danger is that it is now more important to an organization's legitimacy that it is to be seen to be audited than that there is any real substance to the audit."
- ⁵ Sir David Williams, QC, in his retirement address as Vice Chancellor of the University of Cambridge (1 Oct 1996) talked of "... biting financial constraints (imposed at times casually or almost in a mood of absentmindedness)."

- ⁶ Lord Callaghan, "Making Education Britain's Top Priority". The Ruskin Speech Twentieth Anniversary Lecture, Institute of Education, University of London, 15 Oct 1996.
- ⁷ Sir John Mason, retirement address as Chancellor of UMIST, Jan. 1996.
- ⁸ G. Walden, "*We Should Know Better: Solving The Education Crisis*" (Fourth Estate, 1996)
- ⁹ G. Horn, *The Cambridge Review*, Nov. 1996, p.13.
- ¹⁰ On the day that this lecture was delivered, 10 Feb 1997, *The Independent* newspaper carried the following report:
- "The number of A-level exam boards and syllabuses is to be cut back amid concerns of variable standards, ministers will announce tomorrow. In a move to protect the reputation of the A-level "gold standard", badly dented last month by revelations that one board had inflated pupils' grades, the present system is to be streamlined to ensure greater consistency.
- The shake-up is likely to see the number of A-level boards reduced from six to just two or three through a series of mergers, and the range of syllabuses - currently more than 100 - slimmed down.
- The intervention by Secretary of State for Education, Gillian Shephard, on the advice of government curriculum advisers, amounts to an admission that the present exams free market has fuelled growing concern over standards. Schools, conscious of pressure to maximise exam passes in order to secure a high league table position, are suspected of shopping around for a pick and mix of the easiest syllabuses. Competing exam boards, meanwhile, have been accused of lowering pass thresholds to attract a greater share of the market."
- ¹¹ J.H. Newman, "*The Idea of A University*" (University of Notre Dame Press, 1982).

