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ARTICLE

NMITE AND THE POLITICAL ECONOMY OF HIGHER EDUCATION: 2023 PARLIAMENTARY LECTURE

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Abstract
The New Model Institute for Technology and Engineering (NMITE) reflects a systematic attempt to rethink what a higher education (HE) institution should look like, based on the best globally competitive models. NMITE has been designed as a model for a small, new, distinctive, open, academically rigorous, skills-based local university. Many cities or large towns across the UK have low economic growth and low value-added per capita, and little or no access to HE. Addressing this gap in attainment successfully would be both equitable and highly economically and culturally advantageous. It would be a major contribution to local people, local communities and to raising regional and national productivity.

Summary Keywords: University; higher education; productivity; work-ready; engineering; Oxford

This year, as this audience will need no reminding, is the 300th anniversary of the birth of Adam Smith. And so perhaps it is not inappropriate to talk a little bit about what one might call the political economy of higher education, and its consequences today. And as you will see, perhaps fittingly for a talk delivered on July 4th, this talk is in its own way a Declaration of Independence.

1. UK Higher Education Today

Let me start with the state of higher education today. In many ways, there is much to celebrate. A recent survey found that four UK universities stood in the global Top 10 rankings for higher education, and there has been a huge expansion of student numbers and so of educational opportunity.

However, it is also true to say that there have been serious public concerns about UK higher education, many of which have been magnified by the after-effects of the 2020 COVID pandemic. There have been claims that the university funding model is broken, in part since fees have not risen since 2012. There have been bitter disputes about pay and the quality of degrees and complaints about rising administrative costs and senior salaries. And there have been concerns about a host of other issues, including the quality of the student experience, student debt, poor student mental health, value for money, plagiarism and declining academic standards, foreign influence, freedom of speech and the impact of artificial intelligence.

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However, there is an even deeper issue underlying many of these concerns. In 1966, the economists William Baumol and William Bowen published a seminal article on productivity in the performing arts. The problem is this: Imagine you are a member of a string quartet. Every year you and your colleagues expect a pay rise, but your productivity hardly increases. You cannot drop a member and still play the Hoffmeister quartet with three people, and when you do play it, it will still last about as long as it did when Mozart wrote it in 1786. If you worked in a car factory, on the other hand, there would be no problem: Productivity has risen hugely in the car industry as a result of technology, automation and supply chain management. This generates gains, part of which can be passed on to employees. Costs go up, but output, normally, goes up faster.

This phenomenon is known among economists as "Baumol's cost disease". It arises generally in service industries, which tend to be hard to automate, hard to standardise and reliant on the personal touch. If you have ever wondered why the real cost of a new car seems to be steady or falling over time, while car repairs are more expensive than ever; then, this is a large part of the answer.

I first pointed this out in my pamphlet *Compassionate Conservatism* in 2006 and highlighted the effects of Baumol's cost disease in exerting downward pressure on productivity. That diagnosis still looks correct, and it is unfortunate to say the least that neither the British government nor the civil service appears to have thought in any structured or systematic way over the past 20 years about its consequences. Our public services are just that: services. Hospitals, schools, and old-peoples' homes are precisely the kinds of institutions whose productivity it is hard to raise above their trend rates. The inevitable tendency is to put upward pressure on public spending in order to offset stagnant productivity.

For similar reasons, Baumol's cost disease is having a serious impact on the political economy of higher education. It is perhaps the leading contextualizing factor behind the concerns that I have touched on about the quality of student experience, overstretched staffing, value for money and the like.

Funding itself is not the whole issue: In terms of HE outcomes, for example, Scotland is doing significantly worse now than England, despite receiving 20% more funding through the Barnett formula. No, the deep issue is productivity. Costs have risen over time due to inflation, regulation and competitive pressure, but as Baumol's analysis implies, productivity has not improved at the same rate. Meanwhile, there is a cap on domestic student fee income, so that real revenues from this source fall every year. The result is that many universities are under huge financial pressure, which they have sought to alleviate by freezing pay, tilting towards courses with lower costs and higher net revenues, increasing student-academic ratios and recruiting more foreign students. These symptoms are widely recognized, but a key underlying cause has hardly been noticed.

If this melancholy catalogue of ills feels like a general diagnosis, that may say something in itself. But these cost and competitive pressures, together with embedded assumptions about what a university should be, are causally intertwined with another phenomenon which also deserves attention: the remarkable lack of diversity and innovation, and the lack of a sense of place, across much of the HE sector today.

As William Whyte argues in *Redbrick*, British universities in the 20th century had a very wide array of origins, places and purposes. However, he tellingly concludes:

> "As the steady assimilation of the polytechnics showed, the British proved incapable of rethinking the nature or the form of higher education. Even though an elite system was giving way to mass university access, the old symbols and old assumptions retained their purchase. The result was not the highly differentiated system that the government hoped to create, but a set of strikingly similar institutions – all of them modelled on the civic universities, whose structure, working practices and architectural forms were the implicit points of comparison throughout. HE aped Redbrick, not Oxbridge."

As I shall suggest, this lack of institutional diversity may itself carry significant costs.

2. The Shortfall in Technical Education

Within this context, we should also note the particular weakness that has arisen in modern UK technical education.

A 2022 review by the Institute for Fiscal Studies reported: "Half a century ago, a third of teenage boys entered apprenticeships on leaving school, mostly into programmes for 3–4 years in manual trades. A sizeable though much smaller proportion of girls also entered apprenticeships, in fields such as hairdressing. These apprenticeships provided many young people with a route into stable and secure employment".

The numbers are much lower today, and the IFS went on, "These falling numbers matter because apprenticeships can help young people into good jobs. A recent study shows that starting an apprenticeship at Level 2 or 3 is associated with higher average returns than completing classroom-based vocational qualifications at the same level. For men, apprenticeships raise earnings by 30% and 46% for those educated up to Levels 2 and 3, respectively, relative to a classroom-based vocational qualification at the same level. For women, they raise earnings by 10%–20% for the respective groups".

And there is a specific concern even within this area, as relates to higher technical qualifications. The 2022 IFS review pointed out that "compared to other countries, England has a high share of graduates: almost half of young people now progress to higher education. Yet at the same time, a quarter of working age adults in England are not even qualified to upper secondary level (A Level or equivalent), which is over twice the level seen in Germany and the US… Around 1.5 adults per thousand in the UK population complete a Higher Technical Qualification each year, which is lower than most other developed countries. Adults in the United States are over four times more likely to complete a Higher Technical Qualification".

So far, I have briefly discussed the state of UK higher education, the economic impact of low services productivity, the lack of diversity and "place" in the sector and the specific weakness of UK technical education. Let me close this section with four further observations:

The first is commonplace: that despite some progress, there remains a vast need in the UK for people with STEM skills and knowledge, a need which is only likely to increase over the next few years. This is manifest in business, and well understood. However, the impact of weak STEM skills and knowledge is if anything even more telling, but much less well understood, among politicians and civil servants, as the COVID pandemic response demonstrated.

Secondly, one can still catch echoes of an old antipathy to "skills" within UK academia, government and HE. On this view, the function of a university is solely to promote learning through scholarly research, these have little or nothing to do with skills, and teaching at universities is merely ancillary to their scholarly research purpose.

Without getting enmeshed in definitional issues, one might note that in Britain at least, this view faces the irony that much of the original medieval curriculum of the *trivium* and *quadrivium* – grammar, logic, rhetoric, music, arithmetic, geometry and astronomy – depended on the acquisition of specific skills, and was designed to support a clerical or courtly career. The same was true of Britain's "third university", the Inns of Court in relation to the common law. However, in any case, the argument takes us very little way. An insistence on academic rigour and a spirit of open inquiry are essential to all true HE, many would say, but these are hardly the sole preserve of the research university, conceived in any strong sense. Also, even if one grants some form of intellectual or historical primacy to the research university as such, that itself is now just one model among many. Is anyone seriously suggesting that Amherst College and Williams College, for example – ranked by the THES as the top two US liberal arts colleges in 2022 – do not count as universities because they do not offer PhD programmes?

Thirdly, the huge "missing middle" that has arisen in UK STEM educational opportunity has highly adverse social and economic consequences. After all, it is well established that investment in skills is positively correlated with economic growth, indeed more so than is investment in infrastructure. More people would lead more successful and happier lives, and more areas of the country would enjoy higher economic growth, if those people had greater skills, especially in STEM subjects.

Fourthly, it seems plausible that the lack of institutional innovation and diversity and the erosion of a sense of place in UK HE that I have noted are likely to exacerbate these negative equity and growth impacts. The same is true of lack of regional spread in UK HE: There are lots of large UK towns and small cities that have low economic growth and little or no access to HE. Think of Doncaster and Chatham, Grimsby and Wakefield, Southend and Taunton, Chesterfield and Macclesfield and Rochdale. Universities energise local economies, and good universities supercharge them.

3. The hyperintellectualisation of UK HE

Let me sum up the argument so far: at its best, Britain has a world class higher education sector, which has hugely expanded over the past two decades. However, the sector is now caught in a period of malaise driven by a core lack of productivity and innovation. It has also increasingly lost institutional diversity and a sense of place, and these trends have been worsened by the common managerial response to recent problems. At the same time, the need for new STEM graduates continues to grow, while there remains a host of low-skilled areas across the UK with little or no access to HE.

I now want to draw attention to another related long-term development, which is the counterpart of the loss of diversity I noted earlier. This might be called the hyperintellectualisation of higher education. Again, I am sketching an argument, without a huge amount of necessary nuance, so I hope you will bear with me.

We can start with three important developments that took place in the third quarter of the 19th century. The first was the Northcote-Trevelyan reforms of the early 1850s, which sought to replace cronyism and patronage in the civil service with entrance by competitive examination and advancement based on evidence and merit. The second was passage of the Universities Tests Act in 1871, which abolished the requirement for religious conformity at Oxford and Cambridge and opened the way for Catholics and non-Christians to become professors and college fellows. And the third was the reforming zeal of Benjamin Jowett at Oxford, first as Master of Balliol College and then as Vice Chancellor of the university.

The combined effect of these changes, as they were more widely taken up, was to create a very well educated British academic and administrative elite, which in turn spread out across British institutions both domestically and overseas. Excellent news in principle, one might think – who could object to the extension of academic meritocracy? – and perhaps all the more welcome given the responsibilities imposed on this country by the process of decolonisation and the need to fight two world wars.

However, this same process has had the effect that today, 70 years after the Korean War, as national service fades into distant memory, as skills and especially practical skills have lost status, there are very few people across politics, the civil service, the public agencies and the great institutions of state who have got there by a route outside the university system – at a time when that system has become progressively more homogeneous, less institutionally diverse and less innovative over time; more focused on reason, one might say, and less on practical experience.

Why might that matter? One worry is this: that, lacking such practical experience, these people might tend to lack practical self-esteem. Their capacity to judge the practical capabilities of others might therefore be weakened. They might tend to choose people like themselves, rather than take what appears to be an unnecessary risk on someone with a different background. They might become preoccupied with academic credentials, more deferential to experts, more vulnerable to groupthink. They might, in short, lose independence of mind and character. Obviously, such patterns of thought become hard to break out of once begun.

One could go further. At a systemic level, the worry is that the effect of a very broad emphasis on this narrow cadre of elite leadership might be to make a whole system of governance – running across government, civil service and public agencies – more unimaginative, less resilient, more competent at following rules but less capable at achieving outcomes – a tendency reinforced by the steady loss of diifferently educated people with different voices and views. In addition, it might lead to technocratic

forms of behaviour: for example, regarding public concerns merely as a series of discrete problems to be solved, leaning hard but unreflectively on credentialed expertise and on formal tools such as cost–benefit analysis, resisting wider debate and challenge, reinforcing hierarchy, fashion, intellectual conformity and centralization.

We would, in effect, have created a superb system for developing cadres with little practical experience and capability and then giving them senior positions in government, the civil service and the public agencies. When people complain today about the inability of those in authority to get anything done, it is common to blame bureaucracy, red tape and the revolving door; but the present analysis suggests that this problem may also have deep roots in our educational system. To paraphrase the late Kenneth Boulding, academic improvement has brought rigor, but in some ways, it may also have brought mortis.

Of course, this is the position for people who are in employment. However, in such a scenario, there might well also be a large number of people with a highly intellectualized education of this kind and no jobs. This has been described as the phenomenon of elite overproduction: The idea that universities are producing more highly educated people than can be absorbed by business or public life and that this creates a source, a highly articulate source, of resentment and anger.

Fascinatingly, this possibility was recognised in the early 17th century by no less a figure than the philosopher-polymath Francis Bacon, who in his essay "Of Sedition and Troubles" (1625) mentions the discord that arises when "more are bred scholars than preferment can take off". As I show in my recent book on Francis Bacon and Edward Coke, *The Winding Stair* (2023), Bacon knew this from personal experience, since this was his own condition for a large part of his earlier life.

4. The US experience

Now UK Higher Education did not have to be like this. The same pattern was not followed elsewhere, and other countries seem to have struck a different and perhaps superior balance.

The German and Swiss emphasis on vocational skills and apprenticeships is well known. However, the United States of America is perhaps still more interesting for present purposes. In the USA, there is vastly more diversity in kinds of tertiary education than in the UK: I have mentioned liberal arts colleges, but there are also inexpensive community colleges, specialist arts, science and technology institutions, the great Ivy League and state universities and much else. The curriculum is typically much broader, especially in the first two years, before undergraduates come to specialize with their choice of "major". Moreover, American universities have always laid emphasis on the personal qualities and character of their students as well as on their pure academic performance. They positively seek applicants who can show nonacademic personal achievements, whether in sports or technology or the arts, or in philanthropy, volunteering and community service.

Some people find it easy to mock these aspirations. The American emphasis on the diversity of student bodies is often more nominal than real, and it has been subject to intense public scrutiny and legal challenge. However, whatever its other strengths and weaknesses, that diversity appears to have brought benefits in stimulating wider early experience and capability among the students, and this has positive knock-on effects as they start off in life and go on into public and private careers.

And there is one further notable irony here. This is that Benjamin Jowett himself, for all his insistence on academic rigour, also placed great emphasis on the broader aspects of education, and especially on the development of students' personal values and maturity. His first sermon at Balliol College praised the college "first as a place of education, secondly as a place of society and thirdly as a place of religion". To that wider end, he promoted sports and debating clubs, college life as a means to bring people of different backgrounds and religious views together and links to India, so as to bring people from India to Oxford for instruction in agriculture and farming.

In these endeavours, Jowett was to some extent channeling and reinterpreting the spirit of Thomas Arnold of Rugby, a school with which Balliol had close links. In true High Victorian spirit, both men were deeply and sincerely concerned to develop not merely the minds of their students, but their ability to deal

with the world and its challenges. Even when purged of its specifically religious aspect, this view stands in strong contrast to the narrowness and much more intellectual focus of our present system of higher education.

5. Introducing PQ

I hope you find this line of thought persuasive. However, even if not, you may share my view that the UK has a huge need for *doers*: people who can genuinely lead and manage teams, who make things happen. People with what I have learned to call PQ.

What is PQ? Well, IQ tries to measure what you might call intellectual capability or agility. The idea of EQ is an attempt to characterize emotional capability, a capacity to engage with others. PQ seeks to capture practical capability. If we think of intelligence very generally, as the ability to adapt and deal quickly and successfully with challenges thrown up by one's environment, then these three ideas all describe different expressions of human intelligence.

The IQ-EQ-PQ distinction is reminiscent of a set of ancient ideas about wisdom, knowledge and skill. In the *Nichomachean Ethics*, Aristotle makes a distinction between *sophia* or philosophical wisdom, which results in judgements, *phronesis* or practical wisdom, which results in actions, and *techne* or craft, which results in made objects.

Another triad, to be found in the rhetoricians, counterposes *logos* or reason, *pathos* or feeling and *ethos* or character. The first two of these map quite closely on to the dyad of IQ and EQ; if we add *praxis* or practice we come close to PQ; and this in turns suggests an idea of CQ or character-capability, the advantage given by having a mature, well-formed character, which is fairly close to the Greek idea of *ethos*. An Aristotelian would say that the exercise of PQ forms CQ: that it is through repeated effective action, through being tested in different contexts, that human beings acquire the habits of a mature, strong and stable character.

I do not have room here to explore these distinctions, but the lineage of these ideas suggests that we are in fertile territory, and the prestige given in much ancient and medieval thought to *sophia* and *logos* over *phronesis* or *techne* feels like a deep source of the embedded preference for intellectual learning over skills which is still found in modern higher education.

However, PQ is rather different from *phronesis* and *techne* because PQ includes not just capacity but disposition: People with PQ are not simply able to make change but are also actively disposed to do so.

The question now is: Can PQ be taught? In particular, can its combination of capacity and disposition be instilled in students, and if so, how?

6. Introducing NMITE – the New Model Institute for Technology and Engineering

As it happens, we are trying to answer these questions in Herefordshire, through the creation of a brand new greenfield STEM university: NMITE ("en-might") or the New Model Institute for Technology and Engineering.

NMITE reflects a systematic attempt to rethink what a higher education institution should look like, based on the best globally competitive models. In addition, it suggests that the answers to the questions two paragraphs above are, in order: yes, yes, and only through radically new approaches to learning, in a new kind of institution.

NMITE students work through hands-on learning-by-doing in small teams, in engineering studios like their future work environments. They study 46 weeks a year, on accelerated Bachelors and Masters degree programmes, tackling a constant flow of real-world challenges, set by real companies as clients, in specific short and intense learning modules. The result is that they learn academic content, technical skills and professional practice together from the start. Fascinatingly, tech and engineering firms are rapidly waking up to the potential of this approach. The first module sponsor was a small business; the most recent is BAE Systems.

As regards students, NMITE has been designed to be as inclusive as possible. Potential applicants have to show they can do what is a very demanding degree. However, because the focus is on concentrated learning through practice, NMITE does not impose the usual requirement to have a Maths A-level that deters many people, especially women, from becoming engineers.

Instead, NMITE looks for five qualities in a student: grit, curiosity, passion, creativity and collaboration. It wants students who can deal with adversity, who can learn and think independently, who have deep interests or hobbies, who can work imaginatively through problems and who are team players. It does not matter what school you went to, what your background is, or who your parents are.

Many of these young people come from poorer and more diverse families, and NMITE seeks to give them a world class technical education, without ignoring the "hidden curriculum" of human skills that make such a difference to future success.

This "whole person" approach means learning shaped not just by technology, but by economics, ethics, design, the arts, and business. There is an emphasis on self-reliance, community spirit and volunteering, which reflects the values of Hereford as a working garrison city in a rural setting. In many ways, though the technologies and applications may be cutting-edge, the basic educational philosophy is well-tested, almost old-fashioned.

The emphasis on skills reinforces the knowledge gained; the focus on professional practice with clients creates students who are better able to step into jobs; the practical nature of the work creates young people who are highly motivated, who want to do things and not just stand by.

So: is it working? Bear in mind that NMITE only opened its doors to degree students in September 2021. Even so, the early signs are encouraging. As of 2024 has 120 or so students on roll; one might cheekily note, about the same number as Harvard or Yale in the middle of the 18th century. The UCAS forms of applicants show that they have also been applying to very good, established universities such as Birmingham, Nottingham and Cardiff. Not only that: the Quality Assurance Agency's assessment of NMITE's courses has been extremely positive, and in July 2023, NMITE was given New Degree Awarding Powers by the Office for Students, a vital step to enable further growth. All of these things are positive indications, at a very early stage. NMITE's first Masters students started to graduate in September 2024: so far they have had an almost 100% almost immediate employment rate, they have been recruited by top companies such as Balfour Beatty, Kier Construction, the Atomic Weapons Establishment and OXA, the specialist autonomous vehicle software company; and the average starting salary to date is a highly competitive £34,000 a year.

NMITE now has three goals: to prove the effectiveness of the model, by continuing to place graduates in high quality, high earning jobs; to become a fully-fledged, financially self-sustaining university in 2028-29, with about 450–500 full-time equivalent students on roll; and to replicate the model successfully in other parts of the UK, in collaboration with individual, corporate and local authority partners.

7. The small modular nuclear reactor of UK higher education?

Achieving any of these goals would, I suggest, be a considerable achievement. However, from a UK perspective, the last one is especially important. The barriers to entry into higher education for anyone looking to set up a new university today are extremely high: doing so requires vision, leadership, capital, space, time, staff and student recruitment, validated pedagogy, accreditation, student recruitment, pastoral care and a dozen other things. However, NMITE offers a new operating system, which could massively lower these barriers.

However, think of the many cities or large towns across the UK, some of which I listed above, which have low economic growth and low value-added per capita, and little or no access to higher education. Addressing this gap in attainment successfully would be both equitable and prudent; indeed it would be great for those areas, great for their young people, and a major contribution to raising regional and national productivity.

With an effective corporate, institutional or individual sponsor, some central government investment to get things moving, a contribution of buildings and other space from the local authority, access to debt at the right level and timing, and above all energetic and bipartisan local support, these towns and cities could each take the NMITE model and turn it into something special and individually tailored to their own areas: a small, new, distinctive, open, academically rigorous, skills-based local university of their own, based on local needs not top-down national targets.

This would, in effect, be an academy programme for new UK universities. Used in this way, it could make NMITE the small modular nuclear reactor of higher education and levelling up. Given the known effects which a good university has in anchoring and boosting local economic growth, such a policy should be an urgent priority for the next government, whatever its political colour.

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