Postgraduate research students: You are the future of the Academy[1]

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This paper explores the changing role of the university developed and changed over time, and how this is likely to change further in the next 25 years. By drawing on scenarios for the future of the HE sector in the UK in 2035, the article argues that postgraduate research students will be the key factor that sustains the future of the Academy as universities focus more and more attention on the teaching of ever increasing numbers of undergraduate students. The paper highlights the danger of a divide occurring between the idea of the university and the notion of the Academy in the future, and the essential role that research students will play in ensuring this divide remains bridged. The article argues that it is imperative for universities to expand their postgraduate research degree provision if the Academy is to continue in the future as the foundation to knowledge creation.

The 'idea' of the university is steeped in history. In the United Kingdom, the first universities appeared at the turn of the thirteenth century when two were established in England and three in Scotland. This situation remained for several hundred years until the 'ancient' universities were established in the nineteenth century. Extensions of these universities gradually spread to offer education on a part-time restricted basis, mainly to women teachers. It also led, however, to the foundation of Ruskin College in Oxford – a college of Higher Education for working men.

In the latter part of the nineteenth century, the 'Redbrick' or older civic universities were founded, usually in industrial cities (e.g. Leeds, Nottingham, Manchester). These were followed by the newer civic universities after the second world war when some institutions offering courses validated by other universities gained independent status (e.g. Newcastle and Leicester). At this time a range of new university institutions also emerged, such as Stirling, and Kent. The former Colleges of Advanced Technology (CATs) gained university status around 1964 and hence, university institutions such as Aston, and Strathclyde were formed [1].

In 1963, the Robbins Report led to the mass expansion of the sector and in 1965 the polytechnic sector was established and grew five fold until 1991. This binary system of education endured until 1992. In 1992 the 'New' universities were established by the polytechnics changing their names and status.

In 1997 the higher education sector was once again the subject of a Government Inquiry, this time in the form of the Dearing Report [2]. This highlighted the debate between vocational and academic education and the purpose of higher education in contributing to the well-being of the nation state. The Labour Government came to power in 1997 on the slogan 'Education, Education, Education' and stated an ambitious target of 50% of the school-leaver population attending university.

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The target was set as quantity, and the policy on quality followed

The current coalition government elected in May 2011 is taking a slightly different tack. In his first keynote address, David Willetts – Minister of State for University and Science – spoke about rigour and excellence, and research and its role in society: It is important that university research has a positive ‘‘impact’’ on our economy and our society. Impact, after all, is often what motivates academics, whether they’re researching medicine to improve patient care or conducting research in the archives that can transform understanding of our country’s history (Speech to Department of Business and Skills, 20 May 2010) [3].

Willetts defines impact not solely in economic terms, but also in knowledge terms. He circumvents the debate over whether the idea of the university is to focus on the development of the ‘educated man’ [4] and provide education for the sake of education in the liberal tradition, or the development of education that has some practical use, application or vocation by including both. Jaspers [5] felt that the two were not mutually exclusive as the development of a professional cannot be isolated from the development of the individual as a person, and many academic courses do now meet the requirements of professional bodies.

The production of knowledge was one of the key foundations of the ancient universities which is still prevalent in the ‘old’ university sector and is an area growing in excellence for many ‘new’ universities. The essence of academic freedom is founded on the will of the academic to carry out research of their choice. The idea of universities being places of research is a residual of universities’ origins. It may also become increasingly important as universities need to identify their distinctiveness from other HE providers in the future.

Vince Cable – Secretary of State for Business, Innovation and Skills – stated in his first keynote speech delivered at the Cass Business School, London, on 3rd June 2010 that his priorities are: ‘an increased emphasis on lifelong learning, stripping out some of the bureaucracy around FE and making sure that the outdated value distinction between blue collar apprenticeships, and further education on one hand and university on the other is disposed of for good.’ [6]

Research remains a distinguishing factor that differentiates universities from other providers of higher education, be they further education colleges or private corporate providers. While the bureaucracy that Cable refers to may well require stripping out, debate around the value distinction issue is less clear cut. The value of an education wherever it is provided is arguably equivalent – that is the purpose of the external examiner review process, the quality assurance agency qualifications framework, and the common notification and classifications of degrees. Indeed, if such equivalence did not occur, then the delivery of UK degrees through international franchises would be tantamount to fraud. What does differ, however, is the ‘value’ attached to the individuals delivering education, and whether they are leading edge researchers within the field or not.

That is not to say that everyone delivering higher education should be researching; this is clearly not the case. Many international institutions deliver undergraduate degree courses to students with staff qualified to Masters degree level. In the UK, there are institutions that are only able to award taught degrees rather than research degrees, such as Ashridge, as they do not have the research base on which to support research qualifications although they are one of the best in the country – in Ashridge’s case, at delivering management qualifications and offering teaching by experienced practitioners (see, for example, any of the MBA rankings). We also have further education colleges delivering higher education in the UK.

Indeed, the delivery of higher education through further education has been commonplace for over 20 years and is not, therefore, a new idea or practice. The clear differentiating factor between universities, and their staff who are deemed to be members of the Academy, and other providers of HE and their staff who are not deemed to part of the Academy is the contribution to knowledge production – namely research. This distinction remains a hotly debated issue as within the UK university sector itself there are institutions recognised as being more and less 'research-intensive'. Half of UK HEIs receive fewer than 2% of quality research funding [7] and between 2003 and 2007, research funding increased by a greater proportion than teaching funding in the sector. Does this mean that half of the universities currently classified as UK HEIs are not actually universities? This point will be returned to in the scenario analysis presented later.

The word 'Academy' in the UK, 'Academe' in France, and also 'Academia' are generally used as common terms to describe the community of students and scholars engaged in higher education and research. The term originates from the akademeia, just outside Athens, where Plato made famous the gymnasium as a centre of learning. In the 17th century, British and French religious scholars popularised the term to describe certain types of institution of higher learning. Barnett [8] reflects on the common culture within the academic community, and sees a unity of purpose across the academic community reflected in the term 'university', that is its suggestion of a single universe of knowledge. Delanty [9] charts the rise of the Academy within the university back to the mid-seventeenth century when the university shifted its allegiance from the church to the state. He distinguishes between knowledge, culture, and power within universities, with the independence of knowledge from political and clerical authority underpinning the Academy. Readings [10] distinguishes the Academy from the university: 'The high school practices teaching without research; the academy practices research without teaching. The university is the centre of the educational system, because it is where teaching and research are combined. . .' [11]. As such, the notion of the Academy as a knowledge creating entity that may or may not be subsumed within the university system and structure is central to the argument in this paper.

Research in itself is not an uncontested term as there are purists who argue for research only for the pursuit of knowledge and others who argue for research for an applied purpose. Gibbons et al. [12] differentiated between Mode 1 and Mode 2 production of knowledge. Mode 1 was the traditional disciplinary research which was set in a cognitive context. Essentially it was research for the sake of research and the pursuit of knowledge. Mode 2 production of knowledge, however, is transdisciplinary and is oriented to contextualised results. It is research for a purpose and is controlled by success, efficiency and usefulness. Essentially, Mode 1 was pure research while Mode 2 is applied. The two need not, of course, be mutually exclusive, and the impact agenda[2]1 is, to a degree amongst other matters, trying to encourage the finding of a Mode 2 value from Mode 1 research.

Research has never been solely the domain of the university. Much research also takes place in industry, particularly in areas such as pharmaceuticals, energy production and the food manufacturing industry. Again, this is not mutually exclusive.
Industry also invests heavily in research within universities and private funding of university research is emerging as a necessity for the continuation of large scale research projects within the sector. So while universities may not be the sole producers of research in society, they are the sole institutions that combine the pursuit of research in combination with the delivery of higher education qualifications. In time, this absolute distinguishing factor between universities and other institutions may be reduced to the delivery of research degrees, as corporate universities within multinationals start to deliver taught programmes themselves [13].

[2] The impact agenda in the UK represents the argument that researchers need to demonstrate the impact of their research beyond publication and dissemination, such as economic impact, social impact or adoption by industry.

So what is it then about research that is critical to ensuring the future of the university within the Academy? Research is about knowledge creation, and the independent production of knowledge is at the core of the Academy. As political and economic pressures exert influence on universities, the time available for university academics to undertake research of their own may become marginalised. If academics have the amount of time they have available for research reduced, and funding sources of research are reduced, the supervision and outcomes of research students will be fundamental to ensuring that research continues within the future university, although the nature and scale of the research would change. Doctoral students, for example, pursue research to meet the criteria of their qualification. Post-doctoral researchers work outside these parameters. Attracting individuals to pursue research careers will therefore be 'mission critical' for universities in the future, if not already.

Thrift [14] claims that the current system of developing researchers in the UK appears to be working reasonably well and hence does not appear to need a complete overhaul. His report demonstrates that research careers are not always attractive to the best graduates. The points of potential talent loss are many and go beyond funding, salaries, and contracting conditions, to often intangible issues that could stem back to limitations regarding resources, status, etc. There is no clear mechanism for establishing supply or demand of researchers over the longer-term in the UK. The numbers opting for research careers in the UK is comparatively low compared to USA, Australia, and other countries [14], so the idea of a research career needs to be introduced at school as well as at university. Growth of PhDs amongst UK residents is less than for other EU and non-EU residents within the UK and the Russell Group have a different researcher profile to the post-1992 universities. The doctorate is no longer viewed as a route only to a traditional research career but as a more widely relevant qualification to gain employability and skills. There is a need for stitching together initiatives to develop clear career paths for researchers in the future in order for them to remain in the UK [14].

The major global educational discourses are about the knowledge economy and technology, lifelong learning, global migration, or brain circulation and neoliberalism. The major institutions contributing to global educational discourses and actions are the World Bank, the Organisation for Economic Cooperation and Development, the World Trade Organisation, the United Nations, and UNESCO. International testing, in particular the Trends in Mathematics and Science Study (TIMSS), and Programme for International Student Assessment (PISA), and instruction in English as the language of commerce are contributing to global uniformity of national curricula [15]. Mauritius, for example, has already adopted UK Cambridge syllabus as its national school examination system and is producing A level students that far exceed those leaving the state school system in the UK in terms of average grades. As a developing country, Mauritius is aiming to be the knowledge hub in Africa, and hence, its investment in research degrees is expanding.

Knowledge economy policies are currently very powerful drivers of change in contemporary university approaches to research. They typically orientate universities to a national innovation system which both positions knowledge as the key factor of economic growth and sees the main purpose of knowledge as contributing to such growth [16]. Kenway argues that this is a narrow, reductionist logic to knowledge economy policies and that the university should have a wider public contract than generating knowledge for those who can pay for it, making a wider contribution to a broad, rich knowledge base which is attentive to social and cultural knowledge as well as traditions. Hence, while the knowledge economy agenda is important to support and underpin research, it should not be its core driver.

This new knowledge driven world appears to be global and multidisciplinary, and is facilitated by technology. Digital search engines can select appropriate documents faster than any human could read through and synthesise them and having mastered computation outcomes the communication of these outcomes is being refined [17]. This shifts our skills base to one of needing to be able to critically review and evaluate data rather than becoming reciprocals of knowledge. It will be the

value we give to knowledge that we review that will be important rather than the knowledge set itself, and how this contributes to the generation of new knowledge.
In terms of disseminating research and knowledge, electronic publishing will increase in status and academic authors will be less reliant on mainstream publishers [18]. This could lead to a switch to non-exclusive copyright licensing for research articles to enable the emergence of a competitive market [19]. Disruptive forces stemming from technology are emerging with regard to knowledge production which are challenging the university as an institution that provides access to knowledge including unbundling, the taking and merging of different sources of knowledge to create new knowledge [20].

In 2005, the EU identified an innovation gap stemming from a bottleneck to universities contributing fully to the Lisbon strategy due to the uniformity of programmes offered and conformity to a standard model, insularity from industry with limited knowledge sharing and mobility, over-regulation and under-funding. Four major categories of university were identified as: comprehensive (some of which are research-intensive); regional; specialist (some of which are research-intensive) and private. In research-intensive universities, research is driven by organisational culture and internal competition facilitated by external reputation. At non-research intensive universities it is more difficult for individual academics to get research off the ground and to sustain it. Although universities may claim to make research a priority in their mission statements, the actual drive comes from the individual. It is these individuals that in essence make universities unique: their drive to create new knowledge and research. Without these research students, universities will cease to exist; they will become providers of higher education much like private providers and further education colleges. This is not to denigrate these provisions; but to highlight their difference – they do not support research activity and are not staffed by active researchers.

The interaction between universities and the private sector, which has increased contract research and the expectation of immediately applicable research results, has given rise to various new types of units in universities [21]. Entrepreneurialism in the UK means for the most part, income generation and the main reasons for change have been market competition and responses to external pressures. The entrepreneurial university can be seen to be more responsive to social and economic demands than the traditional university. However, entrepreneurialism in the area of research is dependent on a secure funding base and the creation of supportive infrastructure – the cornerstones underpinning a research-intensive university; a reliance on market forces alone does not generate a research culture [22].

The Trends in Scholarly Information Behaviour tracks trends back to 1995, when the internet started, to present day [23].They report a shift from Mode 1 to Mode 2 knowledge production being reported in the literature and more articles being cited within other articles (i.e. we are reading more) and more articles are being collaboratively written. They question whether availability of articles is driven by costs, efficiency, over-production and expansion of sources, or by public good, arguing that open access publishing would lose the academic prestige associated with restricted access. Electronic publication is replacing print because of its increased functionality in terms of searching, remote, and multiple access and so forth. Within 2 years, usage of electronic journals outweighed print journals by a factor of 8 and the print journal is in severe decline, and yet electronic books are largely being underutilised by the academic community at the present time. The introduction of electronic databases has led to a shift from browsing to searching and researchers appear to read more primary source materials than previously from a wide range of sources. End-user search tools and changing work practices are the main drivers.

Manicas [24] identifies Higher Education as being at the ‘brink’, being subjected to ‘forces from the past’ and ‘forces from the future’. From the past he identifies the symbiosis of science, industry and the state; industrialisation and urbanisation; democratisation; and the accelerating demands for

specialised knowledge. From the future he foresees globalisation; higher education no longer being affordable; and computer-mediated technologies. Manicas's view is far from normative, painting a bleak picture of higher education being on the brink of major changes moving it away from its historical development. In essence, he is mapping the emergent model rather than futures model. Rooney and Hearn [25] believe that the element of higher education that is responsible for the development of the mind is what will maintain its uniqueness. They make three assumptions about the mind: there is substantial variation in the processes by which minds do their work; a mind's productive capability is highly dependent on the nature of the reinforcement it receives from its environment; and minds do not exist in isolation from other minds. As such, 'the exchange of knowledge creates new knowledge, and hence, there is a mismatch between the economies of industry and the economics of knowledge production' [26].

As knowledge is replaced at an ever increasing pace, Barnett [27] identifies the challenge in supercomplexity as one of being rather than knowing. Crossman [28] operationalised this as moving from being skilled in the '3Rs' to developing ability in the '4Cs', these being critical thinking, creative thinking, comspeak (the oral replacement for written language), and calculators. In some ways this returns the idea of the university to its liberal roots, that of education for the sake of education rather than a directly attributable contribution to the economy.

Blass [29] outlined 4 models of the university: the dominant model that represented the majority of institutions at the time; the residual model that was hanging on to the historical roots and 'idea of the university'; the emergent model that mapped where some of the more innovative universities were heading; and the future model which was a model proposed for at least a decade ahead.

The residual model of the university is that of the liberal education institution where students and dons discuss philosophy and education of the 'whole man' occurs with no specific purpose or intention. The development of thought processes was the key element and reasoning.

The dominant model emerged with the massification of higher education and the institutions' responses in terms of modularising undergraduate education, and distancing of the student–academic relationship. The shift of emphasis changed to differentiating between types of knowledge, especially in terms of assessment processes and examinations. Ideas such as 'key skills' have emerged, vocationalisation of education, and linkage of undergraduate studies with professional qualifications. The focus is very much on the knowledge base, and proving that students know, understand and are able to do. and the value of modular based assessments. Somewhere, the holistic overview of the students development has been lost and the development of the individual in the liberal sense has been missed as commodification and modularisation have become widespread. The focus on learning outcomes needs to be balanced by some idea of development outcomes to ensure that the means by which the learning occurs remains developmental rather than simply rote learning. The idea behind development outcomes is that the liberal essence of education returns and universities will need to take a holistic view of academic programmes and progress rather than fragmented modular design. It will also start to address their issues of shifting from 'knowing, to being'.

A futures model will approach the issue from a different perspective. Futures methodology can be criticised for taking the moral high ground and producing normative models [30], and while we try hard not to lay value judgements upon future models of the university, the best that we can offer is a critical evaluative approach, stemming from someone who is a product of the system that is being reviewed. By this we mean that we endeavour to look critically at the system, evaluating its impact while appreciating that we are both within and products of the system which we are evaluating, and hence, a truly critical stance is not possible.

While many authors may raise concerns or issues for the future university, there is no single definitive model to date. A number of different future models are presented here. Duderstadt [31], for example, offers a range of possible futures including the world university (global); the diverse university (addresses access and levels of education); the creative university (the need for innovation and creativity in society); the cyberspace university (virtual); and so forth. Wildman [32] prefers simply to raise seven issues for the future university, each of which is addressed within the future university model:

1. The emergent knowledge economy – the need for insight, hindsight, foresight, and wisdom (which in itself justifies the need for futures studies such as this one).
2. Globalisation – the model of the global university.
3. Community capability – the need for the global university to be locally contextualised.
4. Pedagogy of alternatives – the need for differing modes of delivery and education.
5. The Post-Market economy – an emerging North/South or Rich/Poor divide which may be addressed through the spread of digitalisation.
6. Fragment futures – the broken vase picture; how can the pieces be reassembled to work in a different manner.
7. New Renaissance – need to undo the narrowing of rational inquiry; the move from knowing, to being.

Skolnik [33] analyses the concept of the virtual university and the effect it will have on the Professoriate. He has three virtual 'visions' which are the move from campus-centric education to consumer-centric (a shift in stakeholder power towards the student); from local protection to global competitiveness (a further shift in power away from the local market to the global arena); and from marketing to mergers (the idea that universities will merge in order to tackle the other two visions as they will be unable to market themselves credibly within this field). With regard to the future of the academic, Skolnik paints a bleak future: 'The competitive pressure, insecurity and instability that will likely threaten many colleges and universities in the world of the virtual university may lead them to adopt one or more of the following 3 strategies in dealing with faculty; economising, controlling and restructuring [34]. Inayatullah [35] agrees with this forecast, but questions whether such 'mergers' could actually lead to academic bliss. He sees the drivers for the future as being virtualisation, globalisation, multiculturalism and politicisation. Blass [27] offers a future university model that is corporate, virtual, and global.

Vincent-Lancrin [36] offers six scenarios for universities in the OECD area stemming from the driving forces of demographic and participation trends; governance and funding; the knowledge economy; and new actors in HE. His six scenarios are:

1. Traditional university for young, high calibre, career success with lifelong learning, and e-learning remaining outside the sector.
2. Entrepreneurial university which responds to a range of funding sources and has a market-oriented approach without the loss of basic academic values.
3. Market forces university in which a private tertiary sector is regulated and corporations grand degrees for corporate training and research moves to public research centres.
4. Lifelong learning and open education which sees universal access for all ages and much less research, being a source of continuous professional development for the knowledge economy.
5. Global network of institutions where learners select modules from anywhere to put together a course, and institutions work in partnerships with e-learning being a strong mode of delivery and academic status being reduced.
6. Diversity of recognised learning which sees the disappearance of universities as practical, hands-on learning of skills and knowledge through technology become the norm. Knowledge is pervasive and hence, not paid for through tuition fees and research takes place in publically funded centres of corporate R&D [36].

A Universities UK commissioned study of the future shape of the HE sector outlined three scenarios for the future [37]: The slow adaptation to change scenario sees the sector remaining pretty much the same but shrinking due to the inability of some institutions to secure long term financial stability; the market-driven competitive scenario which sees a wider variety of institutions than now, of smaller scale, operating in niche markets with widespread use of ICT for delivery of provision; the employer-driven flexible learning scenario which sees the sector more stratified as institutions pursue the most financially sustainable strategy with much undergraduate provision being provided by FE.

Boxal and Lambert [38] identify 5 archetypes of strategic positions that HEIs may gravitate towards in the next 10 years. Each has a differing funding base and interrelationship of research and teaching as follows:
1. Primary research institutions with a world class reputation for primary research based around leading edge research teams that recruit the most academically able students and colleagues.
2. Research led teaching with an international reputation for research-informed education which is highly respected by the public and achieves excellent student experience allowing them to select highly able students only.
3. Professional formation based around national and sector based development of research-informed practice in a vibrant community of academics and practitioners, the choice for current and aspiring professionals.
4. Research-based solutions for national and international clients maintaining a flow of project based income from blue chip companies for whom they are the partner of choice.
5. Specialist/niche development of research-informed practice focused on specific niche sectors with the agility and foresight to predict changes within the niche sector.

Considering all the models above and a thorough review of literature across a range of disciplines, Blass et al. [39] proposed 5 scenarios for the future of HE in the UK which at first sight could be equally applicable in the US and Australia. The five scenarios are summarised below with the implications for research students drawn out.

The first scenario, ‘leading knowledge creation’ sees the global credit crunch resulting in a societal paradigm shift to debt aversion in future generations. The full-time undergraduate market diminishes in favour of part-time offerings in Further Education, and Higher Education focuses on post-graduate offerings only. The sector shrinks back to ‘Ancients’ and ‘Red-Bricks’ or those more commonly recognised as ‘research-intensive’. A new ‘professional’ academic role develops alongside ‘traditional’ academic role to manage knowledge transfer interface and secure funding. The sector is concerned with leading innovation and contribution to policy, offering high level, conceptual development in an increasingly specialised manner. The role of the research degree student is of prime importance as this is seen as the means of developing the future talent pipeline within the sector.

The second scenario, ‘responsive knowledge creation’ sees a divide in disciplines as corporate sector development leads to a funding stream for professional activity and the sector divides. ‘Pure’ providers are funded by research councils, Mode 1, ‘just in case’ knowledge production amounts to 20% of sector workforce and 10% of students; and ‘Applied’ providers have strong links with industry and engage in practice based research and qualifications, Mode 2, ‘just in time’ knowledge production. Differential contracts and terms between pure and applied providers develop and there is some movement of staff within the sector from pure to applied but not the other way round. Research studentships are highly prized but poorly paid in the ‘pure’ sector, and highly valued and highly paid in the applied sector as they are again seen as the means of developing the future talent pipeline in the sector.

The third scenario, ‘regional conglomerates’ sees funding cuts necessitate savings in core services as 55% of the current workforce in the HE sector are not academics. Regional universities exist, dispersed across a range of campuses, providing education at all levels to anyone who is beyond school age. Institutions are mutually dependent, and movement is between teams and institutions within the region. The role of the academic is lower status and less specialist than is currently the case. Harmonisation of terms and conditions exist across the sector. Competition in the labour market only occurs interregionally, not intra-regionally. Research studentships diminish but self-funded research students are welcomed in greater numbers as an income generation stream.

Scenario four is the position of ‘No government funding’ in which we see the economy continuing in recession to the point that government funding of students in HE sector is withdrawn and students are expected to fund themselves. A small, privatised sector remains solvent in a highly competitive market place. Academics are expected to generate enough income to sustain their position in order to remain in employment and a ‘celebrity’ culture develops. The student body and workforce are both largely part-time and institutions are internally competitive. Networking is key. Personalised contracts based on minimum pay required to secure services/employment. Research studentships disappear altogether and future academics pay increased fees in order to obtain a PhD with a celebrity academic as their supervisor.

In scenario five we shift to a position of ‘Full government funding’ as societal unrest arises in response to the decline of the education system, and this results in a 2% National Education Tax (as an alternative to a VAT rise) which gives everyone an entitlement to free undergraduate education. The sector expands, is largely modularised, and is the envy of other nations. The concepts of quality and student satisfaction converge. National bargaining equalises employment around the country. Competition ceases and collaborative working dominates, but the sector is not homogenous. Long term career structures develop with a multitude of opportunities in lifelong learning and wider curriculum activities. Research studentships increase as a means of sustaining the sector in the longer term.

In all but one of the scenarios, the role of research students is of key importance to the sustainability of the sector, and in the bleakest scenario there is arguably no real sustainable future for the sector. The differences between the scenarios are the sources of funding, whether the students are self-funded or on studentships, but the future of research students within the Academy is vital if the Academy is to survive. Attracting the right talent to fill these positions is vital, and this may require universities and governments to take a long hard look at the career structures, HRM systems and reward packages offered within the sector. As the demands for contribution to the knowledge economy increase, so too must the incentives to be a part of it. The job of the academic rewards our natural curiosity and our love for learning, but this is not enough to sustain the personal sacrifice expected.

Von Oech claims ‘every child is an artist. The problem is how to remain an artist after growing up.’ [40]. What is it that happens to us as we get older that makes us less open? Egan [41] argues that schools inhibit divergent responses by punishing questioning by pupils as impertinence. This is then reinforced as children become more socially aware, by representations in media of large-scale social dissent and other forms of divergent thinking being ignored or punished by society. Maybe this is where the artists go. We stop questioning and looking for new possibilities and settle to an accepted way of knowing. Universities can offer us the opportunity to rediscover our art through the possibility of discovery through research. The desire to rediscover this is what makes researchers research, and it is what will ensure the future of the Academy.

If Universities are to remain the key player within the Academy, it is imperative that they invest in research and the development of future researchers, that is research students. The Bradley Review

(2008: xvi) of Australian Higher Education highlights the importance of the development of research students in order to sustain what it refers to as 'Australia's looming shortage of academics':
'Greater incentives and more support for high performing international students to undertake research degrees in Australia and more places and better support for domestic research degree students will assist us to deal with a looming shortage of academics and researchers. This is necessary to ensure we have enough well-qualified staff to manage the proposed increases in participation and to maintain the stock of researchers in the innovation system.' [41]

During the difficult economic times that lie ahead in the short term future, this investment may become marginalised and threatened. The Academy can survive in the short term on the goodwill of Emeritus Professors and early career academics who need the reviewing experience for their CVs. In the long term, the sustainability of the Academy will be undermined if Universities significantly reduce their research activity. If Universities cease to support research students and the future development of the researching population, the Academy's future is not sustainable.

With regard to the four models outlined earlier [27], the dominant model is under threat. The emergent and residual models may well be the most effective and efficient models at sustaining their existence within the scenarios outlined as universities move towards more extreme positions to differentiate themselves and establish their right to exist outside of a corporately sponsored form of higher education. The future model proposed by Blass in 2003 was one where higher education would be corporate, virtual, and global. While this model may be emerging, the importance of research was somewhat neglected by Blass in 2003. While Blass's model may have offered a future model of the university, it did not address the needs of the wider Academy. For the Academy to survive in the future, research students are fundamental. If they are not to be found within universities themselves, but shift to being located within corporate, virtual, and global institutions of some form, then the future of the Academy itself is under threat. It is the opportunity for the impartiality of the Academy which sustains its value and identity. The loss of this opportunity through some change in governance would jeopardize the notion of academic freedom and undermine the future of the Academy itself. The maintenance of research students, therefore, within a publically funded university sector is fundamental to the future of the Academy.

References

[1] D. Mackinnon, J. Statham, M. Hales, Education in the UK: Facts and Figures, Hodder & Stoughton with the Open University, London, 1995.
[2] NCIHE (National Committee of Inquiry into Higher Education), Higher Education in the Learning Society, HMSO, Norwich, 1997, pp. 7–13.
[3] D. Willets, Keynote Speech, University of Birmingham, 20 May 2010.
http://nds.coi.gov.uk/content/detail.aspx?ReleaseID=413420&NewsAreaID=2&
HUserID=895,776,894,850,776,866,710,705,765,674,677,767,684,762,718,674,708,683,706,718,674
&ClientID=-1 (accessed 21.06.10).
[4] H. Newman, The Idea of a University, Yale University Press, Reprinted in London, 1853.
[5] K. Jaspers, The Idea of the University, Peter Owen, London, 1960.
[6] V. Cable, Keynote Speech: Cass Business School, 3 June 2010.
http://www.bis.gov.uk/news/speeches/cass-business-school (accessed 21.06.10).
[7] UUK, Patterns of higher education institutions in the UK, Eighth Report, Universities UK, London, 2008.
[8] R. Barnett, The Idea of Higher Education, SRHE & Open University Press, Buckingham, 1990.
[9] G. Delanty, Challenging Knowledge: The University in the Knowledge Society, SRHE & Open University Press, Buckingham, 2001.
[10] B. Readings, The University in Ruins, Harvard University Press, Cambridge, MA, 1996.
[11] B. Readings, The University in Ruins, Harvard University Press, Cambridge, MA, 1996, p. 64.

[12] M. Gibbons, C. Limoges, H. Nowotny, S. Schartzman, P. Scott, M. Trow, The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies, Sage Publications, London, 1994.
[13] E. Blass, The Future University, Lambert Academic Publishing, 2009.
[14] N. Thrift, Research Careers in the UK: A Review, Department for Innovation, Universities and Skills, 2008.
[15] J. Spring, Research on globalization and education, Review of Educational Research 78 (2008) 330–363.
[16] J. Kenway, E. Bullen, S. Robb, The knowledge economy, the techno-preneur and the problematic future of the university, Policy Futures in Education 2 (2004) 330–350.
[17] S.A. Jackson, Ahead of the curve: future shifts in higher education, Educause Review 39 (2004) 10–18.
[18] B. Gunter, Technology Trends. Information Behaviour of the Researcher of the Future, JISC & British Library, London, 2007.
[19] C. Armbuster, Commercialisation, internationalisation and the internet editorial, Policy Futures in Education 6 (2008) 371.
[20] J. Hilton, The future for higher education: sunrise or perfect storm? Educause Review 41 (2006) 58–71.
[21] R. Rinne, J. Koivula, The dilemmas of the changing university, in: M. Shattock (Ed.), Entrepreneurialism in Universities and the Knowledge Economy, SRHE & Open University Press, Maidenhead, 2009.
[22] M. Shattock, Research, technology and knowledge transfer, in: M. Shattock (Ed.), Entrepreneurialism in Universities and the Knowledge Economy, SRHE & Open University Press, Maidenhead, 2009.
[23] I. Rowlands, M. Fieldhouse, Trends in Scholarly Information Behaviour. Information Behaviour of the Researcher of the Future, JISC & British Library, London, 2007.
[24] P. Manicas, Higher education at the brink, in: S. Inayatullah, J. Gidley (Eds.), The University in Transformation: Global Perspectives on the Futures of the University, Bergin and Garvey, Westport, CT, 2000, p. 33 (Chapter 3).
[25] D. Rooney, G. Hearn, Of minds, markets and machines: how universities might transcend the ideology of commodification, in: S. Inayatullah, J. Gidley (Eds.), The University in Transformation: Global Perspectives on the Futures of the University, Bergin and Garvey, Westport, CT, 2000 (Chapter 8).
[26] D. Rooney, G. Hearn, Of minds, markets and machines: how universities might transcend the ideology of commodification, in: S. Inayatullah, J. Gidley (Eds.), The University in Transformation: Global Perspectives on the Futures of the University, Bergin and Garvey, Westport, CT, 2000, p. 92 (Chapter 8).
[27] R. Barnett, Realizing the University in an Age of Supercomplexity, SRHE & Open University Press, Buckingham, 2000.
[28] W. Crossman, Compspeak 2050: how talking computers will recreate an oral culture by mid 21st century, in: H.F. Didsbury, Jr. (Ed.), Frontiers of the 21st Century: Prelude to the New Millennium, World Future Society, MD, USA, 1999, pp. 106–116.
[29] E. Blass, The Future University: towards a normative model from an emerging provision of Higher Education in Britain, Futures Research Quarterly 19 (4) (2003) 63–77.
[30] W. Bell, Foundations of Futures Studies. Vol. 1: History, Purposes and Knowledge, Transaction Publishers, NB, USA, 1997.
[31] J.J. Duderstadt, A University for the 21st Century, University of Michigan Press, USA, 2000.
[32] P. Wildman, At the edge of knowledge: toward polyphonic multiversities, in: S. Inayatullah, J. Gidley (Eds.), The University in Transformation: Global Perspectives on the Futures of the University, Bergin and Garvey, Westport, CT, 2000 (Chapter 9).

[33] M. Skolnik, The virtual university and the professoriate, in: S. Inayatullah, J. Gidley (Eds.), The University in Transformation: Global Perspectives on the Futures of the University, Bergin and Garvey, Westport, CT, 2000 (Chapter 5).
[34] M. Skolnik, The virtual university and the professoriate, in: S. Inayatullah, J. Gidley (Eds.), The University in Transformation: Global Perspectives on the Futures of the University, Bergin and Garvey, Westport, CT, 2000, p. 59 (Chapter 5).
[35] S. Inayatullah, Corporate networks or bliss for all: the politics of the futures of the university, in: S. Inayatullah, J. Gidley (Eds.), The University in Transformation: Global Perspectives on the Futures of the University, Bergin and Garvey, Westport, CT, 2000 (Chapter 19).
[36] S. Vincent-Lancrin, Building future scenarios for universities and higher education: an international approach, Policy Futures in Education 2 (2004) 245–263.
[37] UUK, The Future Size and Shape of the Higher Education Sector in the UK: Threats and Opportunities, Universities UK, London, 2008.
[38] M. Boxal, P. Lambert, Executive Summary of Future HE Workforce, HEFCE, Bristol, 2009.
[39] E. Blass, A. Jasman, S. Shelley, Visioning 2035: scenarios for the future of the UK Higher Education sector, Futures 42 (2010) 445–453.
[40] R. Von Oech, A Whack on the Side of the Head, 2nd ed., Warner Books, 1990,, p. 85.
[41] G. Egan, The Skilled Helper: A Systematic Approach to Effective Helping, 3rd ed., Brookes Cole, Monteray, CA, 1986, cited in Brookfield, S.D. (1987). Developing Critical Thinkers: Challenging adults to explore alternative ways of thinking and acting. Open University Press, Milton Keynes, 1987, pp. 111–112.