THE SUSTAINABILITY CURRICULUM

The Challenge for Higher Education

Edited By **John Blewitt** and **Cedric Cullingford**

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Karen Warren is professor of philosophy at Macalester College. She has edited or co-edited five anthologies, authored *Ecofeminist Philosophy: A Western Perspective on What It Is and Why It Matters* (Rowman and Littlefield, 2000) and completed a groundbreaking anthology entitled *Gendering Western Philosophy* (Prentice Hall, forthcoming). To learn more about Karen Warren's professional background, interests and accomplishments, please visit her website at www.macalester.edu/~warren.

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List of Acronyms and Abbreviations

ARB	Architects Registration Board
ACIS	Associate of the Chartered Institute of Secretaries
AFANet	Thematic Network for Agriculture, Forestry, Aquaculture and the environment
ALERT	Adult Learner's Environmental Training and Resource Project
AUDE	Association of University Directors of Estates
BAT	British American Tobacco
BIE	Business in the Environment
BRE	Building Research Establishment
BSE	bovine spongiform encephalopathy
BT	British Telecom
CfIT	Commission for Integrated Transport
CO_2	carbon dioxide
COPERNICUS	Cooperation Programme in Europe for Research on Nature and Industry through Coordinated University Studies
CPD	continuous professional development
CTC	city technology college
CVCP	Committee of Vice-Chancellors and Principals
DE	development education
DEA	Development Education Association
DfEE	Department for Education and Employment
DfES	Department for Education and Skills
DETR	UK Department of the Environment, Transport and the Regions
DTI	Department of Trade and Industry
EAUC	Environmental Association of Universities and Colleges
EAZ	educational action zone
EBEN	European Business Ethics Network
EC	European Commisson
EE	environmental education
EEE	Electrical and Electronics Equipment Directive
EFS	education for sustainability
ESF	education for a sustainable future

ELV	End of Life of Vehicle Directive
EMS	Estate Management Statistics
EPA	Environmental Protection Agency (US)
EPSRC	Engineering and Physical Sciences Research Council
EPZ	export-processing zone
ESD	education for sustainable development
EU	European Union
EWS	English, Welsh and Scottish Railway
FAO	Food and Agricultural Organization (United Nations)
FE	further education
FE_2HE	Further Education to Higher Education
FRSA	Fellow of the Royal Society of Arts
GATS	General Agreement on Trade in Services
GC	global citizenship
GDP	gross domestic product
GIS	geographic information systems
GMO	genetically modified organism
GNP	gross national product
GreenCom	Environmental Education Communication Project of the US Agency for International Development (Academy for Educational Development)
HDI	Human Development Index
HE	higher education
HEEPI	Higher Education Environmental Performance Improvement Initiative
HEFCE	Higher Education Funding Council for England
HEI	higher education institution
ICT	information and computer technology
ILO	International Labour Organization
IPP	integrated product policy
ISEE	International Society for Environmental Ethics
ITK	indigenous technical knowledge
IUCN	International Union for the Conservation of Nature and Natural Resources
JPPSG	Joint Procurement Policy and Strategy Group
LAN	local area network
LCA	life-cycle analysis
LJMU	Liverpool John Moores University
MELA	Mothers of East Los Angeles
MET	material cycle, energy use and toxic emissions
NFER	National Foundation for Education Research
NGO	non-governmental organization
OECD	Organisation for Economic Co-operation and Development

OU	Open University
PAR	participatory action research
PBL	problem-based learning
PFI	private finance initiative
PP4SD	Professional Practice for Sustainable Development Initiative
PPP	public–private partnership
PSHE	personal, social and health education
QCA	Qualification and Curriculum Authority
RAE	research assessment exercise
RIBA	Royal Institute of British Architects
ROHS	Restriction of Certain Substances Directive
SAGES	School of Anthropology, Geography and Environmental Science (University of Melbourne)
SD	sustainable development
SDE	sustainable development education
SEAAR	social and ethical accounting, auditing and reporting
SMT	Senior Management Team
SWOT	Strengths Weaknesses Opportunities Threats
TCPA	Town and Country Planning Association
TNC	transnational corporation
UCL	University College London
UIA	Union of International Architects
UK	United Kingdom
UMIST	University of Manchester Institute of Science and Technology
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations International Children's Emergency Fund
US	United States
USDA	United States Department of Agriculture
UUK	Universities UK
VSO	Voluntary Service Overseas
WBL	work-based learning
WCED	World Commission on Environment and Development
WESDE	women–environment–sustainable development–education interconnections
WEEE	Waste Electrical and Electronic Equipment Directive

WHO	World Health Organization
WISE	Women into Science and Engineering (University of Bradford)
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization
WWF	World Wide Fund for Nature

Chapter 1

Introduction

John Blewitt

At the Earth Summit in Rio in 1992, education was identified as one of the key forces central to the processes of sustainable development during the 21st century. Some years later, the goal of sustainability and the need for education in all of its forms in order to seriously engage with this imperative remain as significant as ever – possibly more so, as many of us are directly experiencing the risks, uncertainties and pressures of working and living within a globalized, weightless knowledge economy. As wealth increases for some, global poverty, insecurity and inequality are an obdurate reminder that economic development is far from even and far from fair. Higher education (HE) is implicated in all of this, for it is no longer in the privileged position of simply observing, criticizing and evaluating what goes on beyond the seminar room or campus. It, too, is a global player imbricated in both the production of knowledge and wealth and the maintenance of poverty and insecurity through its growing role as servant to the global economy. Higher education therefore helps to shape the material reality we all experience and the ways in which we attempt to understand, reflect on and, perhaps, even change it.

Sustainable development and the goal of sustainability are slowly permeating the values, policies and practices of government, business and education. For many people this permeation seems to be occurring in geological rather than human time. This book explores just one aspect of HE's engagement with the sustainability agenda, focusing largely on where the sector is currently positioned and how it might, and arguably should, evolve in the future. For good or ill, universities are notoriously conservative creatures despite their apparent liking for internal restructuring. The dominance of disciplinarity remains important in the intellectual organization of teaching, learning (the cultural reproduction of knowledge) and, perhaps, also research funding. As new areas of learning and research emerge, as universities become increasingly 'relevant', disciplinarity remains the locus of attention and the intellectual axis for comprehending contemporary developments. New 'disciplines' such as media studies, informatics or environmental science are emerging as the global tendency (or 'real world' demand) is increasingly towards transdisciplinarity and the social distribution of knowledge and knowledge production. Significant higher learning, including research, now takes place in private and government think tanks, corporate research laboratories and even in the public

media. Knowledge, as opposed to mere information, is becoming increasingly rooted in specific contexts of application that go beyond the rules and perspectives of single subject disciplines. Indeed, universities are increasingly urged by governments to become more effectively involved in knowledge and technology transfer. Gibbons et al (1994) identify four features of this 'Mode 2' transdisciplinary knowledge, which is additionally characterized by its heterogeneity, social accountability and reflexivity. It is not hierarchical or fixed but subject to change and alteration:

1 It develops a distinct but evolving framework to guide problem-solving efforts.
2 Solutions involve movements in many directions, and theoretical and empirical work.
3 The diffusion and dissemination of new knowledge to participants takes place through, rather than after, the process.
4 It is dynamic and constantly evolving.

The skills and experiences that people bring to this enterprise are heterogeneous, and despite all the critical semantic arguments about the conceptual fluidity or vagueness of sustainability and sustainable development, their practical realization will be an aspect of this Mode 2 transdiciplinarity. Sustainability is complex and complicated, with no single discipline definitively addressing either the problems or the solutions: it incorporates technological, philosophical, economic, social, ecological, political and scientific dimensions. This may be illustrated through an examination of real-world issues or projects that are motivated by concerns over sustainability – for example, in Green architecture, eco-design, gender and development; integrated and sustainable transport; global citizenship; and lifelong learning.

Although sustainability and sustainable development certainly require a transdiciplinary or interdisciplinary approach to teaching, learning and research, disciplinarity is still an inviolable fact of university life, particularly in the more research-led traditional institutions in the UK. The disciplines are unlikely to disappear or to lose their significance as ways of comprehending (or not comprehending) the contemporary world. Their apprehension of sustainability issues, processes and imperatives therefore becomes of key significance for many students who study them. The humanities and social sciences enable us to reflect upon our worlds in ways that are not tied to performance criteria, executive summaries, business plans, scientific logic, trade laws or government regulations. The reflective and, indeed, reflexive nature of the disciplines allows the formation of new understandings of self and others and their relationship to the natural world. The recent emergence of eco-criticism within literature studies (Bate, 2000) and counter-intuitive rather than revisionist interpretations of social relationships and new technology in history (Sale, 1996) offer opportunities for all of us to stop to think, see, listen and learn. The collective message from the contributors in this volume is that the co-evolution of the disciplines and sustainability is sometimes

uneven, sometimes profound, but always signalling an, as yet, unrealized potential that may in the future herald a radical transformation of learning, knowledge and understanding. The role of disciplinarity is often unrecognized or even summarily dismissed in conversations about education for sustainability. This is a pity, for all of us still have a lot to learn. Interestingly, even students on new programmes focusing specifically on sustainability, such as the BA/BSc in Sustainable Development at the University of Wales at Bangor, offer multidisciplinary and interdisciplinary learning opportunities as well as practice-based educational experience. Reflexivity remains the key to personal growth and social learning and, as such, is a key element, together with de-traditionalization, of our late modern age:

> *The reflexivity of modern social life consists in the fact that social practices are constantly examined and reformed in the light of incoming information about those very practices, thus constitutively altering their character. . . In all cultures, social practices are routinely altered in the light of ongoing discoveries which feed into them. But only in the era of modernity is the revision of convention radicalized to apply (in principle) to all aspects of human life, including technological intervention in the material world.* (Giddens, 1990, pp38–39)

Lifelong learners in further, higher and adult education should be, and are, increasingly encouraged to be reflexive and reflective if a more just and sustainable world is to be fashioned.

The current issues of disciplinary change, curriculum development, capacity-building and the nurturing of a critical environmental literacy can only be realized in the process of changing our relationship with time, the natural world and the traditions of our own thinking. As Foster (2001, 2002) says, we need to recapture a view of education as being an end in itself since it is through our learning that we collectively and individually recreate ourselves, our understanding of the world and, in the long run, the world itself. Additionally, without the capacity to make ('deep sustainability') judgements for tomorrow, the social intelligence necessary to create a culturally mature and institutionally sophisticated learning society may not develop. This social intelligence requires the flourishing of the humanities, social sciences and 'meta-scientific modes of understanding'. A learning society, Foster (2002, p39) writes, 'lives by the fullest exploration of experience imaginatively alert to all its complexities'. As a corollary, Stables and Scott's (2002) discussion of critical environmental literacy presents the need to move beyond 'humanism and the discourses of modernity' while avoiding the partial and sometimes incompatible nature of other literacies – scientific, technological, economic and so on. As Bowers (2001) has shown, the language and, particularly, the metaphors we use in our sense-making activities can limit (perhaps even to the point of preventing) the proper development of an ecological understanding of the human–nature relationship. Our language is littered with anthropocentric, industrial, mechanistic and computational metaphors, whereas at the root of

a 'deep sustainability' consciousness and conscience, *ecology* should be understood as encompassing the interdependency of social, cultural and biotic activities and relationships. The concepts of restoration, preservation and conservation, Bowers (2001) argues, should be borrowed from the ecological sciences and re-articulated to accommodate social relationships and practices. In this way, the critical environmental literacy that Stables and Scott (1999) advocate could, effectively:

- Restore our amazement at the unknowability and finitude of life, which transcends our own material desires and rationality.
- Provide an understanding of the historically and culturally situated nature of scientific knowledge, technology and creative art.
- Ensure that when we attempt to act sustainably we do so from a belief in its moral value and with a willingness to learn from it.

Sometimes it seems that reason and rationality, whether in scientific guise or not, is the primary enemy of sustainable development. But it should be recalled that just as many people wish to renew humanity's spiritual, affective and intuitive capabilities. Reason remains a key element in the generation of any critical literacy, knowledge, understanding or practice. Universities are places that, hopefully, still offer cultural and intellectual space where critical reason may develop, be discussed and questioned. Reason is possibly a prerequisite for a form of learning that will enable us to better look after ourselves and our environment. As Field (2000, p154) concludes in his analysis of lifelong learning:

> *An ever more greedy capitalism needs rational, humanistic and knowledgeable critics as a prerequisite for human survival. Is the learning society amenable to change?*

In some ways HE has been prescient in outlining an agenda for sustainable learning and institutional change. In 1990, under the auspices of President Jean Meyer of Tufts University, 22 presidents, rectors and vice chancellors from universities across the world issued a ten-point action plan to engage HE in the quest for a sustainable future. The first three action points of the Talloires Declaration read:

1 *Increase awareness of environmentally sustainable development*: use every opportunity to raise public, government, industry, foundation and university awareness by openly addressing the urgent need to move towards an environmentally sustainable future.
2 *Create an institutional culture of sustainability*: encourage all universities to engage in education, research, policy formation and information exchange on population, environment and development to move towards global sustainability.
3 *Educate for environmentally responsible citizenship*: establish programmes to produce expertise in environmental management, sustainable economic

development, population and related fields to ensure that all university graduates are environmentally literate and have the awareness and understanding to be ecologically responsible citizens.

Three years later the group of European universities that had formed COPERNICUS (Cooperation Programme in Europe for Research on Nature and Industry through Coordinated University Studies) launched its University Charter for Sustainable Development. The central concerns of COPERNICUS include interdisciplinarity, lifelong learning, sustainable production and consumption, partnerships and networking, teacher education and the creation of virtual learning environments.

At the turn of the millennium, in 2000, following some years of discussion and financial support from the Dutch government, 'the unfinished business of Rio' was finally completed with the publication of the Earth Charter (2000). This charter sets out 16 principles and an ethical framework that falls into four major areas:

1 respect and care for the community of life;
2 ecological integrity;
3 social and economic justice and democracy;
4 non-violence and peace.

The charter aims to foster a more sustainable way of life by persuading educational institutions and learners to transcend our human-centred approach to knowledge, understanding and action. Some progress is already being made in some universities (Clugston, Calder and Corcoran, 2002; Calder and Clugston, 2002); but not all observers are confident that HE is capable of more than piecemeal change. Bosselmann (2001) argues that administrative structures are alien to staff and students alike and are only responsive to instrumental demands to use resources more efficiently. Faculties and disciplines are incapable of interdisciplinary cooperation, while the university, as a whole, 'has no ethos or collective conscience for sustainability'. Progress in the UK during the decade following the *Toyne Report* (Toyne, 1993) adds substance to this pessimistic assessment, as do some contributors to this volume.

Although declarations of principle are important signposts, the everyday reality of educational administration, management, funding, career development, teaching and learning in its various forms offer more than a 'challenge' to champions of education for sustainability (EFS) within the university sector. These champions – leaders at all levels – need to seek methods by which others may adapt themselves, endorse and then promote the required shifts in teaching, learning, curriculum, research, institutional management, policy and practice that will build a more sustainable world. Adaptive leadership – mobilizing people to address new problems through new learning – is, as Heifitz (1994) shows, the most appropriate strategy for effecting major and lasting, if not paradigmatic, change. Although this book does not specifically address issues of educational leadership for sustainability, what is implicit in

the Earth Charter (2000), the Talloires Declaration and similar initiatives is the recognition that sustainability is not something that can be imposed from above or secured exclusively by action below – it needs both. The processes of sustainable development require leadership, participation and commitment in all areas of the academy. If one of the principal purposes of universities remains the generation of new knowledge or the re-articulation of existing knowledge, then work within and between the disciplines is of primary significance for all our futures. Universities are no longer the ivory towers of popular imagination; but neither are they (yet) exemplars of good sustainable practice or, as Sterling (2001) has it, 'sustainability education'.

Universities should act as exemplars; but too often progress in this area is dependent upon a relatively few committed and invariably overworked individuals. But then there's nothing wrong with being a pioneer.

Structure of the Book

The purpose of this book is to offer some scrutiny of current HE practice by looking at disciplinary study, some developmental projects, lifelong learning and the nature and purpose of HE itself. Not all of the disciplines can be covered in one volume and the sciences have been consciously omitted. A great deal of criticism has been levelled at many aspects of scientific activity (Ho, 2000), and to examine science, sustainability and HE is something that is best explored in a separate volume.

Part 1 starts with Cullingford's overview of the purpose of the university at a time that is characterized by change and threat. Cullingford argues that sustainability should become the centre of debate that engages all of us in a fundamental rethink about the nature of HE and its wider responsibilities. One danger Cullingford perceives is that 'sustainability' could become a cliché devoid of any significant intellectual purchase if universities fail in their moral duty to penetrate the masks and veils of media spin, political rhetoric and its own instrumental rationality. This instrumentality, understood increasingly as supporting the needs of the global economy and developing 'human capital', constricts the possibilities of learning throughout life. In Chapter 3, I argue that both sustainability and lifelong learning are obviously and necessarily complementary. Only if we are able to renew our understanding of what lifelong learning could and should be, will a more sympathetic and holistic policy and practice emerge. In Chapter 4, the meaning of sustainability in the context of education theory and practice is analysed by Sterling who explores the provenance of the term 'education for sustainability' or EFS and outlines the key theoretical and philosophical principles informing its likely realization in the university sector. One way in which lifelong learning and HE, as a whole, can discover a new sense of purpose sympathetic to the holistic goals of sustainability is to nurture learning opportunities that foster global citizenship. In Chapter 5, Parker, Wade and Atkinson review their own achievements at London's South Bank University, which, although significant, also highlight

the distance still to be travelled if the larger institutional structures, organization and ethos are to be renewed to support processes of sustainable development. This experience is taken up by Hopkinson, James and Van Winsum, in Chapter 6, in their discussion of the Higher Education Environmental Performance Improvement Initiative (HEEPI). This environmental management initiative aims to reduce the considerable environmental impact of those universities involved in the HEEPI partnership. Although there are 'shining' examples of good practice in individual universities, the problem for the future is how this can transform the learning cultures of the institution and the sector as a whole. In Chapter 7, Bradley and Crowther look at how engineering and eco-design at the University of Bradford has transformed curriculum development and approaches to teaching, learning and recruitment. Product design is one of the most significant, if sometimes unrecognized, aspects of our everyday lives and it is this resonance with the practical and the everyday that is informing Bradford's attempt to captivate the interest of young designers in schools and colleges. Part 1 concludes with Karen Warren's exploration of issues relating to gender, development and sustainability and the importance of eco-feminism for sustainable development and sustainable development education. In Chapter 8, Warren argues that an eco-feminist philosophical perspective 'has the potential to achieve widespread, multidimensional, cross-disciplinary and interdisciplinary goals and results in curricular transformation around sustainable development issues'. This is a challenge to all curriculum managers in the modern university and one that has significant epistemological implications.

Part 2 focuses on the manner in which certain disciplines have responded to the sustainability agenda and the ways in which they might or could develop further. In Chapter 9, Edwards offers a wide-ranging reading of architecture's professional and academic engagement with sustainability and environmental design. The historical perspective he offers enables us to place current developments within their context. The role of professional associations, research, changes to environmental law and examples of important curricular developments add force to Edwards's hope that sustainable design will one day become a cultural movement uniting 'art, science and nature'. In Chapter 10, Bamford follows on with an examination of current transport policy and planning, indicating the shortcomings of both. Indeed, a serious problem lies in the shortage of suitably qualified transport planners and the need for universities to fulfil their role in addressing this 'skills gap'. The problem, as always, is easier to diagnose than cure. Accountancy is not something that regularly figures prominently in books on education or sustainability. Cowton's upbeat contribution, in Chapter 11, shows that in a post-Enron world the education of future accountants needs to build on the work of those committed individuals who do actually make a difference. If the profession viewed sustainability as important, argues Cowton, 'then it seems highly likely that university curricula would soon fall into line'. Baimbridge's discussion of economics in Chapter 12 shows that growth is the dominant principle in the minds of mainstream economists. This is not to deny the

importance of those who have challenged the dominant paradigm; but it does suggest that the problem for those who wish to 'mainstream sustainability' is the discipline's defining conceptual orthodoxy and its money-orientated quantitative methodology to which most economists subscribe.

Social policy is the subject of Huby's contribution in Chapter 13. After exploring the nature of social policy as an academic subject, she argues that an understanding of the linkages between social and environmental issues is essential in achieving social justice and political democracy. She writes that 'there is a need to ensure that students in higher and further education are aware of the importance of environmental protection for social welfare'.

In Chapter 14, Smith, Donnelly and Parker explore the various connections of sociology to sustainable development, showing that with the discipline's increasing 'dispersal and diffusion' this task is by no means straightforward. The central part of the chapter is devoted to an examination of a number of key textbooks designed to introduce undergraduates to sociology. Their conclusions are not terribly heartening. The problem lies, perhaps, as much with sociologists and our system of education as with sociology itself.

Another central social science discipline is reviewed by Garner, in Chapter 15, who notes that development, environmental politics, environmental public policy and Green political thought are present in many undergraduate and postgraduate politics programmes. Garner's analysis concludes that 'the future of the politics of sustainable development within academia is now assured'.

Of all the disciplines, geography seems to be well known for continually reinventing itself and is ostensibly closer to sustainability issues than many others. In Chapter 16, McManus starts by stating that geography is an 'ideal discipline' for the academic advancement of sustainable development. His conclusion is that this ideal has yet to be realized. Perhaps this is because critics within the discipline perceive much of the literature about sustainable development as lacking in rigour, and geography itself as essentially divided into the physical and human, which does not allow for connective concepts – such as sustainability – to take root easily. Finally, Part 2 ends with a discussion of philosophy, a key discipline within the humanities and the production of knowledge as a whole. In Chapter 17, Palmer offers a view on the contribution of philosophy to the developing understanding of sustainability and the problems faced by philosophers who seek to secure a place for sustainability in the discipline. Unfortunately, academic philosophers seem to be experiencing a double bind – criticized for being too abstract and conceptual by practitioners and policy-makers and for being insufficiently rigorous by their colleagues, who tend work in more technical or traditional areas. Palmer concludes by noting that 'the idea of sustainability is not sacred, good beyond question'; but neither is it something that can simply be ignored or dismissed.

In Chapter 18, Cullingford concludes by offering a powerful critique of current HE practice. Sustainability, he writes, is 'an inescapable dilemma of our time, a matter of study and reflection, and a challenge to action'. The subject of sustainability and of HE is, or rather should be, about 'the

sustainability of the human spirit as well as the environment'. The underlying message of this book is that on both counts our universities could do better.

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Part 1

Chapter 2

Sustainability and Higher Education

Cedric Cullingford

It is a symptom of our time that any suggestion that universities are in a state of crisis is dismissed as absurd. Universities proliferate – new ones are founded and student numbers increase. They are major employers and are seen by governments as not only necessary, but crucial in the competition for wealth creation. There are few articles and fewer books that question the role and purpose of the modern university. Suggestions of doubt are not only discussed, but are significantly and tellingly followed by the question of which university the person who challenges the system is from, carrying the assumption that some kind of vindictive recrimination will follow. Universities are both in competition with each other and subject to external control, which has a profound psychological effect.

There was a time when books with titles such as *The Crisis of the Modern University* were almost commonplace. That was a sign of comparative complacency and certainty that people had time to contemplate and weigh up what place universities have in society as a whole in the notion of culture and civilization. If universities thrive, they are doing so in particular ways. They are, with their science parks and industrial links, a central part of the modern economy. Their students are primed for employment, like an investment; their alumni then give the richer universities even more. In such universities with such outputs, there is little doubt and even less questioning. In an age of presentation of the centrality of marketing, universities play their part. There is no place for any hints of disturbance.

The modern university is part of the ethos of the time. Universities from their earliest foundations have always reflected their wider societies and their purpose has evolved as societies have evolved. The dominating motif of Newman's (1873) 'idea of a university', with its moral ideal of the disinterested pursuit of truth that combines human understanding with knowledge, has long since faded away, like the dominance of the classics. While new subjects have evolved over the years, the presiding concern for universities in the early modern age remained that of scholarship and accumulating wisdom for its own sake. The idea of scholarship has been, in turn, gradually overcome by the idea of research – as exemplified by the PhD, which is at once an initiation into an elite, an original contribution to knowledge and a sign of capacity to undergo more research. For many years British universities resisted the

doctorate – a 'continental' invention – on the grounds that it obstructed the core university activities of scholarship and teaching. It is only during the later half of the 20th century that research, particularly in the sciences, has become the defining characteristic of academics.

Research into any subject has all kinds of connotations, especially when it is part of an assessment exercise or dependent on contracts. One reason that the notion was resisted in British universities was that research can either be carried out for its own sake, for furthering the general scholarship and human understanding, or it can be a means to an end, the end being, essentially, financial. There is money in research and this is where the emphasis now lies. Contracts bring income and the research findings can be even more lucrative. Oxford, the home of lost causes, now boasts a significant number of millionaires who have made their money by exploiting their academic research. What is noteworthy about this is the fact that instead of possible criticism, such entrepreneurship is praised. This seems to be what universities are now for. Science parks and industrial links emphasize the commercial base. Those universities that exploit their alumni most lucratively are deemed to be the most successful.

This conception of the modern university – selling products, obsessed with income and responsive to the wishes of government – might be the product of natural development. The question is whether such a style of operation is a result of how universities see themselves or whether it has been foisted onto them. As with other institutions, there is increasing use of external inspection. No longer are universities 'secret gardens'. In matters of accountability and measurable outcomes, they are also put into 'league tables', ranked against each other not only in scholarly esteem but paraded year by year before the general public. Academic superciliousness has always been with us: 'Where did you go to university? Oxford? Ah. . .good and what did you read? Engineering? Oh dear.' Never before, however, has superciliousness become a matter of policy.

The question remains regarding why universities have changed. One argument would be that the expansion of student numbers inevitably changes the ways in which the universities operate. The resource base per capita per student has been deeply eroded. Years ago the vice chancellors of British universities were asked by the government of the time what would happen if there were a 1 per cent cut in their income. All but one replied that it would mean the end of civilization as we know it – days in which the notion of civilization could still be contemplated. The financial cuts since then are well known. Universities continue to operate, albeit differently; but such change to the fame and ethos of universities cannot simply be ascribed to money.

One of the greatest changes to universities is the focus of control. In the Robbins report of 1963, the foundation of the argument rested on the independence of universities from external control, even if they were financed by the state. The report resulted in the University Grants Committee, which was deliberately created in order to isolate universities from political control and interference. The Educational Reform Act of 1988 swept all that away, to be