Integrating health and sustainability: the higher education sector as a timely catalyst

J. Orme1* and M. Dooris2

1Institute for Sustainability, Health and Environment, Faculty of Health and Life Sciences, University of the West of England, Glenside Campus, Bristol BS16 1DD, UK and 2Healthy Settings Development Unit, School of Public Health and Clinical Sciences, Faculty of Health and Social Care, Harrington Building, University of Central Lancashire, Preston PR1 2HE, UK

*Correspondence to: J. Orme. E-mail: judy.orme@uwe.ac.uk

Received on November 9, 2009; accepted on January 28, 2010

Abstract

Higher education is an influential sector with enormous potential to impact positively on health and sustainability. The purpose of this paper was to explore its emergent role as a key setting for promoting health and sustainability and for addressing their challenges in an integrated and coherent way. Acknowledging both the relative narrowness of the environmental focus that has to date characterized and driven universities’ work in relation to sustainability and the demonstrable value of adopting a whole-system approach, this paper will explore the concept of ‘Healthy Universities’ as a means of furthering debate and facilitating synergy between public health, sustainable development and climate change.

Introduction

Sustainable development and health are among the most critical issues facing global society and look set to increase in importance for this and future generations. Furthermore, they are closely interlinked in a number of ways:

(i) Firstly, the concept of sustainable development embraces environmental, social and economic dimensions and aspires to health-enhancing communities, societies and environments.

(ii) Secondly, it is widely recognized that health is determined by a range of environmental, social and economic influences and that the health of people, places and the planet are interdependent.

(iii) Thirdly, the causes and manifestations of unsustainable development and poor health are interrelated and frequently pose further interconnected challenges.

The purpose of this paper was to explore the emergent role of higher education as a key setting for promoting health and sustainability and for addressing their challenges in an integrated and coherent way.
Sustainable development and health: overview

At the global level, the 1992 Rio Earth Summit was one of the most significant catalysts to establishing an international policy framework for sustainable development. Significant outputs included the following: the Rio Declaration [1], which, as its first principle, affirmed that ‘human beings are at the centre of concerns for sustainable development, they are entitled to a healthy and productive life in harmony with nature’; Agenda 21 [2], which stated that ‘health and development are intimately interconnected’ and the United Nations Framework Convention on Climate Change, which has been pivotal in the development of a growing consensus that climate change is happening, that it is largely the result of human activity and that it poses an enormous threat to the environment and human health [3–5].

Nationally, the UK Sustainable Development Strategy [6] endorses the widely used definition of sustainable development as ‘development which meets the needs of the present without compromising the ability of future generations to meet their own needs’ [7]. It has five guiding principles as illustrated in Fig. 1. This model suggests that by building a sustainable economy, using science responsibly and establishing dynamic participative governance systems, it will be possible to ensure a strong healthy and just society that lives within and respects environmental limits (Fig. 1), thereby ensuring that resources needed for life are available now and for future generations. Ensuring a strong healthy and just society requires supporting people’s capacity to meet their fundamental human needs (including subsistence, protection, participation, leisure, creativity, affection, understanding, identity and freedom) and creating vibrant resilient communities.

Addressing health inequalities is central to public health policy. Sustainable development provides a logical starting point and an essential analytical framework for finding ways to reduce health inequalities [8]. Preventative strategies that are consistent with the principles of sustainable development will aim to reduce both illness and environmental damage across social and ethnic groups. There are strong synergies between these policy areas, suggesting it is cost effective as well as sustainable to invest in measures that can achieve positive outcomes on both fronts [9].

Since the publication of ‘Securing the Future’, the UK government has become increasingly clear that

![Fig. 1. UK Sustainable Development Strategy: Five Guiding Principles. This figure is available in black and white in print and in colour at Health Education Research online.](https://academic.oup.com/her/article-abstract/25/3/425/654990)
we face two long-term energy challenges: (i) tackling climate change and (ii) ensuring secure, clean and affordable energy as we become increasingly dependent on imported fuel [10]. Its 2008 National Security Strategy identifies climate change as ‘potentially the greatest challenge to global stability and security’ [11]. This is why the UK government has, in the 2008 Climate Change Act, set legally binding targets to cut carbon emissions (by 34% by 2020 and by at least 80% by 2050) forming part of its push ‘for an ambitious global agreement at United Nations talks in Copenhagen in December 2009’ [12].

The impact of climate change on health is well documented and is already exerting serious adverse effects on the health of communities in both developing and developed countries through both direct and complex indirect mechanisms [13]. These include the impact of extreme weather events resulting in deaths, physical and mental illness and injury and the changing distribution of vector-borne and diarrhoeal and other infectious diseases.

In relation to both sustainability and health, there is a growing appreciation of the economic imperative to address key challenges. For example, it is estimated that obesity could cost the United Kingdom £49.9 billion by 2050 [14] and that climate change will cost the world up to £3.68 trillion unless tackled within a decade [15]. There is also widespread recognition that the scale of the challenges facing us will require joined-up responses within and across sectors. It is clear that successful public health endeavour requires professionals and disciplines to commit to collaborative working to create sustainable change in health and well-being within a joined-up policy environment [16], recognizing and capitalizing on the interactions between settings to maximize impact [17].

For instance, in the United Kingdom alone, there are 169 higher education institutions (HEIs) with almost 2.4 million students and more than 370 000 staff [18, 19]. Universities can demonstrate by example and work in partnership with other settings to achieve change [20, 21]. With regard to climate change, they can also act as a catalyst for wider step changes in societal practice in the areas of both mitigation and adaptation, thereby achieving substantial co-benefits for the health of the population and the planet [22]. As Gill and Stott [23] advocate, a key part of this role is to increase public understanding of the inextricable links between climate change and global health.

The United Nations Educational, Scientific and Cultural Organization states that the mission of the higher education sector is ‘to promote higher education … as a key factor for cultural, economic and social development … and as a promoter of human rights, sustainable development, democracy, peace and justice’ [24] a perspective that reflects the vision underpinning the United Nation’s Decade of Education for Sustainable Development 2005–14 [25]. Two years before the Rio Earth Summit, a group of university leaders agreed the Talloires Declaration [26], comprising a 10-point action plan for incorporating sustainability and environmental literacy in university teaching, research, operations and outreach. The declaration represents an important impetus to progress and has been signed by 375 universities and colleges internationally, including 12 from the United Kingdom. However, its overriding focus on environmental sustainability, which has continued to dominate current thinking in the higher education sector (see, for example work by Creighton [27] and Bartlett and Chase [28] does not reflect the breadth of concept explicit in the UK government’s Sustainable Development Strategy and other recent documents [6, 29] and there has been no such international declaration focused on health.

Within the United Kingdom, the government has prioritized the development of sustainability literacy as a core competence among graduates [6] and the Higher Education Funding Council for England has stated [30]:

**Higher education, health and sustainability**

**The role of the higher education sector**

Higher education represents one large-scale sector with the potential to focus and mobilize its corporate responsibility to achieve significant impacts.
We want to make sustainable development a central part of our strategy for the future development of the higher education (HE) sector. Our vision is that, within the next 10 years, the HE sector in England will be recognised as a major contributor to society’s efforts to achieve sustainability—through the skills and knowledge that its graduates learn and put into practice, its research and exchange of knowledge through business, community and public policy engagement and through its own strategies and operations.

Responding to wider government targets, it is currently consulting on carbon reduction targets for the higher education sector, performance on which will be linked to capital allocations from 2011 [31].

A whole-system approach

It is increasingly being argued that public health, sustainability and climate change agendas are so inextricably linked that they need to be considered as one broad overarching system that can catalyse action and policy change [32–34]. The links between healthy communities and sustainable development are numerous and encompass the social and economic determinants of health, quality of life and an ecological model of health where health is a resource for life [16]. To demonstrate this synergy and linkage, Barton and Grant [35] have produced a comprehensive map of the global determinants of health, which is particularly useful when considering a more whole-system approach to health and the environment (Fig. 2).

A whole-system perspective underpins the concept of a settings approach to health promotion and public health [36, 37], which adopts an ecological model of health and is based on the premise that ‘health is created and lived by people within the settings of their everyday life; where they learn, work, play and love’ [38]. This more holistic approach—which embraces a shift away from a mechanistic and reductionist focus on single health problems, risk factors and linear causality, towards one concerned to develop supportive contexts within the places that people live their lives—is central to a recent World Health Organization (WHO) review of the spatial determinants of health in urban settings [39]. Furthermore, it has been strongly argued that to remain coherent and relevant to current and future contexts, the healthy settings approach must identify and forge connections between public health and sustainable development [40, 41] and develop synergy between different types of setting [42, 43]. Adshead [44] introduces the idea of adopting a syndemic orientation:

Whilst in England the health impacts of climate change are only just beginning to manifest, a syndemic approach which looks for common solutions to difficult social policy problems offers enormous potential to make a real difference. To take the example of obesity, encouraging people to walk rather than use their cars will not only benefit the health of the public but also has enormous potential to contribute towards our collective action on climate change by reducing carbon emissions.

Similarly, the final project report produced for the Government’s Foresight Project on Obesity argued that ‘the complexity and interrelationships of the obesity system … make a compelling case for the futility of isolated initiatives’ and concluded that there is considerable scope to align policies to tackle climate change and sustainability with policies for public health. The application of a whole-system perspective identifies the emergence of complex problems, actively explores the connections between them and works to secure synergistic solutions that cannot be achieved in isolation. It is therefore evident that the effectiveness of a whole-system approach to health and sustainability will be determined not only by the involvement and participation of individuals within and across the setting but also by the quality of relationships between different organizations, networks and individuals.

Healthy Universities

As outlined above, higher education represents an important sector that has enormous potential to
impact positively for health and sustainability. Acknowledging the relative narrowness of the environmental focus that has to date characterized and driven universities’ work in relation to sustainability and the value of adopting a whole-system approach, it is useful to explore the concept of ‘Healthy Universities’ as a means of furthering debate and facilitating synergy between public health, sustainable development and climate change.

Drawing on evidence from other healthy settings initiatives, such as Healthy Schools and the recently established National Further Education Programme, it is increasingly acknowledged that effective programmes are likely to be complex, multifactorial and involve activity in more than one domain [45]. Historically, universities have served as settings for the targeting of health promotion campaigns and the delivery of specific projects on a wide range of health-related topics, resulting in guidance documents on themes, such as drugs, alcohol and mental health [46–49]. However, such developments have tended to focus on single topics rather than a holistic and strategic ‘whole-university’ approach. Interest in applying the settings approach to higher education emerged during the 1990s and received international legitimacy in 1998 when the WHO published a book Health Promoting Universities:
Concept, Experience and Framework for Action which built on the experiences of HEIs [50]. This identified a number of key roles of universities and explored how these might be developed through adopting a settings approach:

(i) a centre of learning and development, with roles in education, research and knowledge exchange,

(ii) a focus for creativity and innovation, developing knowledge and understanding within and across disciplines and applying them to the benefit of society,

(iii) a setting within which students develop independence and life skills and undergo an important life transition, often living away from home for the first time and exploring and experimenting without parental influence,

(iv) a context within which an increasingly diverse student population clarifies values, grows intellectually and develops capabilities that can enhance current and future citizenship within families, communities, workplaces and society as a whole,

(v) a resource for and influential partner within local, regional, national and global communities and

(vi) a workplace and business, concerned with image, performance and productivity within a competitive marketplace.

While the book was significant in endorsing and putting Healthy Universities ‘on the map’ and for urging greater integration between healthy and sustainable higher education [51], its potential influence was lessened by the lack of any formal follow-up and the failure of WHO to establish the proposed European Network. However, during recent years, there has been a burgeoning of interest with several international conferences and developments in a number of countries (e.g. Germany, Spain and Hong Kong).

Nationally, the UK government responded to a groundswell of interest and activity relating to both Healthy Colleges and Healthy Universities by including reference to further education and higher education sectors in its 2004 White Paper Choosing Health [52] and making a commitment to ‘support the initiatives being taken locally by some colleges and universities to develop a strategy for health that integrates health into the organization’s structure’ (p. 72). In 2006, UCLan responded to increasing demand for information and advice by establishing the English National Healthy Universities Network, as a means of facilitating the sharing of experience and practice and providing peer support [53]. More recently, funding has been secured from the Higher Education Funding Council for England to strengthen and expand the network which currently has a membership of more than 60 including 45 universities and 15 primary care trusts and other partner agencies.

Following healthy settings thinking, the Healthy University (While a range of different terminologies such as ‘healthy settings’, ‘health promoting settings’, ‘settings for health’ are in widespread use, the term ‘Healthy University’ is here used to refer to whole-system initiatives such as Healthy and Healthy Promoting Universities.) approach adopts an ecological model of health, understanding it to be determined through a complex interplay of environmental, behavioural and organizational factors. This breadth of focus leads naturally to a synergistic understanding of health and sustainability and, as illustrated in Fig. 3, the English Network has agreed that the Healthy University approach is underpinned by core values and entails a commitment to:

(i) creating healthy and sustainable working, learning and living environments for students, staff and visitors,

(ii) increasing the profile of health and sustainable development in teaching, research and knowledge exchange,

(iii) contributing to the health, well-being and sustainability of the wider community and

(iv) evaluating their work, building evidence of effectiveness and sharing learning.

In a recent research study exploring the potential for a national programme on Healthy Universities,
this potential synergy was further highlighted, with participants from both universities and national stakeholder bodies emphasizing the importance of forging connections between health and sustainability agendas [54].

It is this growing commitment to embedding health and well-being within the mainstream business of higher education coupled with the expectation that higher education will act sustainably in all that it does [31] that provides the perfect springboard to influence a process of co-ordinated action to address climate change.

**Integration and synergy**

It is important for the higher education sector to be clear about how it can take steps to integrate its commitment to improving health and sustainability. The following brief examples of good practice from two UK universities illustrate the potential of the overall sector to contribute to improving health and well-being in synergy with carbon reduction.

**Transport**

Sustainable transport policies are increasingly being developed and championed across the higher education sector. These contribute to action on climate change by reducing carbon emissions and help tackle obesity and other chronic diseases by promoting physical activity. As Adshead [44] notes, this type of syndemic thinking informs much national policy, but arguably does not yet translate effectively into widespread commonplace action on the ground. Leading by example, both the University of the West of England (UWE), Bristol, and the UCLan have championed this agenda. UWE has an award-winning Travel Plan which aims to develop approaches to travel that impact positively on the student experience, contribute to a Healthy University and are environmentally and financially sustainable. The objectives of reducing car use, increasing active travel (i.e. cycling and walking) and increasing both sustainable and inclusive forms of transport are central to all this innovative and
sector-leading work. One successful initiative is the establishment of the Ulink low emission public bus network, available to the general public at a discounted rate. Passenger numbers have doubled over the last year, contributing to carbon reduction across the city and neighbouring communities. Similarly, UCLan has agreed a 5-year travel plan that aims to reduce solo car usage and encourage more sustainable travel choices, thereby making the University and Preston a more accessible, healthier place to work, study in and visit.

Food

Food is another issue that clearly highlights the interconnectedness of health and sustainable development agendas. On the one hand, it is evident that the personal and economic costs of food-related ill-health are huge, a particular concern being the year-on-year rise in obesity, which in turn is linked to increases in diabetes and heart disease. At the same time, there is growing understanding of the environmental and social impacts of food through how it is grown, processed, transported and disposed of and issues such as Fair Trade, food miles and local sourcing are now firmly on the public and political agendas.

Recognizing the important place that they occupy within the food system, both UCLan and UWE have developed a whole-system approach through their procurement, catering, retail, education and research roles. UCLan and its Students’ Union agreed to work together to develop a strategic and integrated response within the context of the University’s Medium Term Strategy, which includes within its core values ‘a commitment to health, well-being, sustainability and sustainable development’. Appreciating that food is essentially a cross-cutting issue, it was decided not only to formulate a stand-alone strategy but also to develop a framework that would inform and be delivered through other overarching strategies. It also reflects a commitment to contributing to the delivery of regional and national policies, most immediately the North West Food and Health Action Plan [55], which encourages all organizations to establish Whole Day, Whole Organization Food Policies.

A multidisciplinary working group was established comprising representatives from the two organizations together with the North West Regional Food and Health Lead, with the purpose of scoping and agreeing a whole-university approach (see Fig. 4). The main output of this group is a Joint Food Framework intended to enhance the positive impacts and reduce the negative impacts of the University and Students’ Union on health and sustainability. The framework is structured around six aims:

(i) to move towards a healthier and more sustainable food supply chain,
(ii) to increase the provision of affordable healthier food for the diverse university community,
(iii) to improve consumer information through provision of clear and consistent food labelling,
(iv) to raise awareness of and promote the benefits of eating healthier and sustainable food,
(v) to improve students’ skills relevant to healthier eating, and
(vi) to increase understanding and knowledge about food, health and sustainability through research and teaching.

The complexities of the food agenda are extensive, with the social context of behaviour needing to be fully understood and acknowledged. However, it is important to recognize the potential that higher education has to involve and support its massive student population in more local sustainable food economies. To this end, UWE through its Healthy University Strategy Group engages students through cookery demonstrations and support given by university chefs, the provision of locally sourced, seasonal and organic menus, a monthly farmers’ market, a traffic light system on university produced food, education at point of sale with regard to food procurement and healthier eating. There are already sufficient examples of activity being undertaken within higher education institutions to profoundly influence our national carbon footprint. These examples, however, are frequently
neither evaluated nor shared across the sector and hence do not form a visible part of the mechanism to achieving a secure future via a sustainable economy, good governance and the sound use of science.

Studies in the South West Region of England have demonstrated the range of important health and well-being-related initiatives being undertaken within the higher education sector in the region [56, 57], the impact of which remain within those individual institutions. This is now not acceptable and a co-ordinated action does need to ensure that action in one part of a setting is shared across the setting itself but also that action in one setting leads to action in another setting.

**Curriculum development**

Universities can also embed health and sustainable development into their core business through means of curriculum development linked to research and knowledge exchange. The growing literature on education for sustainable development acknowledges that sustainability is about systemic change within higher education that allows for transformative learning to take place. This means that these issues can be viewed from a range of disciplinary angles together with cultural perspectives, different time perspectives and a range of spatial perspectives [58].

For example, UCLan’s Medium Term Strategy includes a commitment to ‘educate students for global citizenship by integrating sustainable development, health and well-being into curricula across the University’. The extensive resource base at UWE underpinning its sustainability education comprises over 130 sustainability relevant modules and 19 research centres which contribute to its Institute for Sustainability, Health and Environment. This illustrates the powerful offer in terms of education, research and knowledge exchange that is on offer for all students, staff and wider communities in one institution. By building increased understanding of the connections between health, sustainability and climate change within and across disciplines, universities have the potential to guide inter-agency working (e.g. between primary care trusts and local authority planning departments).

---

**Fig. 4.** Healthy and sustainable food: a whole-university approach.
and generate increased capacity and capability for integrated leadership, policy-making and cutting-edge practice.

The catalytic work of higher education in educating and contributing to developing the wider public health workforce is illustrated through a strong portfolio of work being undertaken at UWE. The impact of the urban environment on health is well documented [39] and there is increasing appreciation of the connections between health and the built environment in relation to a range of issues. For example, UK government reports [6, 14] have highlighted how the built environment impacts on obesity by enabling or constraining healthy choices for example, through the ability to use active transport (walking and cycling) in going about daily activities, such as commuting and shopping. The professionals responsible for planning and managing the built environment therefore need to understand these connections and appreciate their ability to influence the health and well-being of the population. One starting point for developing this understanding is through educating and training those involved with spatial planning, transport planning, architecture, urban design and landscape. One important project being led by the WHO Collaborating Centre for Healthy Cities and Urban Policy at UWE is the Education Network for Healthier Settlements, a national network of HEIs concerned to integrate health issues into the teaching and learning of built environment professionals. The project is funded through the Department of Health Workforce Unit and the Cross Government Obesity Unit (M. Grant, personal communication).

Conclusions

Although the focus of this paper is based on UK experiences, the points made and the examples used are argued to be pertinent and relevant to a more international context due to heterogeneity of sustainability challenges as well as the heterogeneity of societal expectations, values and cultures impacting on higher education in different communities and regions round the world [59].

We have argued that public health, sustainability and climate change agendas are so inextricably linked that they need to be considered as one broad overarching system and that higher education is a large distinctive and hugely influential sector that has both the potential and the responsibility to lead for change regionally, nationally and globally, thereby catalysing integrated policy and practice responses. This leadership will involve a number of mechanisms:

(i) Firstly, as credible and trusted evidence-based organizations, universities have the potential to communicate this ‘joined-up’ understanding and advocate for an integrated approach that clearly connects public health and sustainable development. Through a commitment to informing top-level decision making while at the same time prioritizing participation and public engagement, universities can change hearts and minds to make a real and recognizable difference to this and future generations.

(ii) Secondly, as large-scale organizations, universities have considerable leverage and corporate muscle at both institutional and sector levels. They have large estates, occupy pivotal roles in local and regional economies and are major procurers and consumers of resources. Although the concepts of Corporate Social Responsibility and Corporate Citizenship have traditionally been used most widely in relation to private sector corporations, they have increasingly been applied to public sector and other bodies [60]—a prime example being the UK National Health Service [33]. Like the National Health Service, universities have the potential to develop their role as corporate citizens, contributing simultaneously to public health and sustainable development and demonstrating the role of low-carbon living in improving population health, well-being and quality of life clearly.

(iii) Thirdly, it can be argued that higher education should be concerned not only with what happens within the limited timespan that students (and staff) are at a particular university but also with
developing values, knowledge and understanding among students and staff, in ways that will help to shape the views of future citizens, leaders and policy makers. By including such a system-based focus into its curriculum development, research and knowledge exchange, there are significant opportunities to impact on longer term public health and sustainability in families, communities, workplaces and society as a whole.

While we recognize that for some universities, it will be appropriate to integrate health-related work under the umbrella of sustainability; we have also suggested that the whole-system Healthy University approach offers an important and timely mechanism for facilitating synergy between public health, sustainable development and climate change—with its concern to create healthy and sustainable working, learning and living environments for students, staff and visitors; increase the profile of health and sustainable development in teaching, research and knowledge exchange and contribute to the health, well-being and sustainability of the wider community. In order to harness the potential that it offers, it will be necessary to provide clear strategic guidance to the higher education sector, to put in place processes for cascading effective and innovative practice and to secure appropriate leadership and governance to ensure maximum impact.

Conflict of interest statement

None declared.

References


