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Today becomes tomorrow
Re-thinking business practice, education and learning in the context of sustainability

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Abstract

Purpose – The present preoccupations of businesses and business educators include the increasing global debt, rising unemployment and expanding carbon footprints, and the societal and governmental pressures to minimise the impact of these challenges. Meanwhile, the urge towards technical fixes and problem solving is shaping the way that business is done today and constraining business practices for tomorrow. The repercussions for business education are serious and systemic, as these responses neglect the need to critically question, innovate and rethink business futures, through our educational processes. The purpose of this paper is to provide context and orientation to this special issue collection which showcases current thinking and practice in higher education aimed at addressing this predicament and finding new responses.

Design/methodology/approach – This paper offers a critical review of developments geared towards more sustainable and responsible forms of business education and practice. It takes an inclusive view of "sustainability" that embraces issues such as poverty and inequality, environmental degradation, human rights and access to resources. The concept reaches beyond the practice of "corporate social responsibility" to take into account the complex challenge of reorienting business practice to improve development processes and life chances worldwide, in the context of the inevitable limits to planetary resources.

Findings – The paper considers the influences of international movements in ushering in a vision of learning for sustainability in business education. It discusses challenges that have come to light through recent initiatives and in literature on curriculum innovation in this area. The paper calls for a re-envisioning of business practice, education and learning which goes beyond remedies for current symptoms of unsustainable development and unmasks the need to reconnect business with people and planet.

Originality/value – This paper foregrounds lessons learned from several areas of thought and practice that have bearing on the communities of practice for business education. It frames and situates the contributions presented in this collection, exploring upcoming agendas in this critically important field.

Keywords Sustainability, Business education, Business schools, Unsustainable development, Education for sustainability, Leadership for sustainability, Responsible management education, World economy

Paper type General review

1.   Introduction

Scanning through the headlines of the *Financial Times*, *The Economist* and *The Wall Street Journal* suggests that our chances of surviving and thriving as a global community are dependent upon the growth of gross domestic product (GDP), improved business efficiencies and investment in new technologies. Coverage of systemic issues relating to the impact of business on people and planet is scarce; when they do feature, these issues are represented through abstract statistical information and perceived primarily as issues of risk or non-compliance. This distance between activity and impact on a human scale permeates the business discourses and is regularly propagated through the media. Emerging markets such as China, Brazil and India do feature in these business communication channels but are often viewed as threats, rather than as pieces in the global economic puzzle which might contribute to an alternative picture of economic progress and sustainable development. These newspapers and journals are reinforcing the dominant assumptions and priorities in business, whilst articles which question these models or feature non-technical forms of innovation are noticeably absent from the discussion.

The parallels between business journalism and business education are strong when it comes to engaging with issues of sustainability. The focus in the majority of business and management education is on reproducing and improving current practice, rather than questioning it, seeking alternatives or transforming business activity so that it takes a more responsible approach that aligns with sustainability. Yet, alternative business models do exist

(Schmidheiny, 1992; Holiday *et al.*, 2002; Williard, 2002, 2005; Mesure, 2009; Doppelt, 2009, 2010; IIED, 2011) and are a powerful source of inspiration for young entrepreneurs and the business leaders of tomorrow. Examples of good practice are not just confined to small businesses relying on micro-credits or community-oriented development[1]. As the World Business Council on Sustainable Development (WBCSD) has showcased[2], large corporates have also acknowledged the importance of re-thinking their business strategies in the context of various future scenarios involving changing consumer demand; reshuffles in the patterns of economic powers and relationships; challenges in meeting energy needs; the impact of climate change; food security issues; and the accompanying threats of civil unrest, terrorism and war on business. Responses to these scenarios range from carbon-pricing initiatives to understand the true cost of externalities, through to higher level considerations such as the need to value ecosystem services, support more equitable power relationships between established and emerging economies, introduce social innovation through the supply chain, engage stakeholders in business management practices and rethink business strategy and leadership.

Equally, international economic organisations are recognising the need to mainstream business alternatives and rethink what constitutes economic prosperity and achievement nationally. For example, in May 2011, the Organisation for Economic Co-operation and Development (OECD) released its *Better Life Index* (OECD, 2011)[3] and announced that it is time to move beyond the GDP as a means of measuring the success of societies. It has adopted this new perspective as a change mission for the organisation and a new metric to measure quality of life alongside GDP in developed economies. The metrics involve an amalgam of 11 indicators, including income and jobs as well as life satisfaction, housing, community, education, governance, health, work-life balance and safety, aiming to capture the diversity of lifestyles and civic priorities. In a separate statement, OECD has warned against income inequalities within and across countries, as unsustainable development greatly increases global instability and security.

These fundamental questions rarely make headlines in the mainstream business media and have yet to inform the development and provision of business education on any significant scale, for reasons discussed below. This review considers recent developments geared towards the creation of more responsible forms of business education and practice to tackle the many powerful questions that are being asked globally about sustainability. It takes an inclusive view of "sustainability" that embraces issues such as poverty and inequality, environmental degradation, human rights and access to resources. The concept reaches beyond the practice of "corporate social responsibility" to take into account the complex challenge of reorienting business practice to improve development processes and life chances worldwide, in the context of the inevitable limits to planetary resources. The review explores some of the intriguing issues that this raises for the business education community, looking at international prompts, the responses of business schools and emerging platforms for innovation, as well as previewing some of the themes and issues presented by the contributors to this edition.

2.   Re-thinking business practice and education: international influences

Perhaps, the most significant influence on business practice and on business educators with regard to sustainability has stemmed from the work of international NGOs such as WWF and IUCN, who have endeavoured to raise awareness of these interconnected problems and their implications. These organisations have provided clear evidence of the problems through the *Red List*[4] and other efforts to interpret and disseminate the findings of scientific studies, offering compelling arguments for the need to redefine business education and practice (WWF International, 2011b; IUCN, 2011). Taking these two important international examples foregrounds the different kinds of approaches and initiatives that have begun to influence business and business education to find alternative approaches for the future.

IUCN was an early starter, actively engaging since 2003 with corporates that have significant impact on natural resources and livelihoods, through mining, oil and gas, biodiversity-dependent industries including fishing, agriculture and forestry and financial services, and more recently extending to "green" enterprises, such as organic farming, renewable energy and nature-based tourism. Their goal is to educate business practitioners towards understanding that there is more to sustainability than accepting the natural limits of business, using a focus on promoting the monetary value of nature – in particular the goods and services it provides us such as water, food, energy and clean air. Their research has put the value of ecosystem services at many times the total of the world's GDP[5] and informed their focus on educating about market distortions and need to value natural services in economic and tax policy, financial systems and markets. As well as working to educate business leaders and practitioners, IUCN and its Commission on Education and Communication supports educators confronting tensions in the business curriculum, for example through projects which assist business educators to question practices and develop new pedagogies for sustainability (Tilbury *et al.*, 2004).

In 2010, WWF International went a step further and developed its own MBA, in partnership with the University of Exeter, UK. The "One Planet MBA" is a unique programme which brings together business and sustainability expertise from all over the world, seeking to build an ongoing network and educational platform to address the failings of current MBA programmes. Launched in 2010, the programme was founded by WWF in

collaboration with the University of Exeter in an effort to "transform the way we teach business and inspire a new generation of leaders" (WWF International, 2011a). It uses case studies and leadership experiences to provide an MBA experience that supports responsible business leadership, an approach echoed in its global *One Planet Leaders* offering with the International Institute for Management Development in Switzerland, which supports business leaders to "embed sustainability into the core of your business; develop your ability to drive change; leverage sustainability as a driver of innovation and growth"[6]. These programmes build upon a decade of prior WWF initiatives which sought to change business practice through the development of business alliances and business training frameworks[7].

In recent years, the growth of education for sustainable development has provided additional impetus for re-thinking business education to reflect more responsible patterns of leadership that aim to tackle the challenges of sustainability. This ambitious educational agenda found a prominent vehicle through the UN *Decade of Education for Sustainable Development (DESD)* from 2005 to 2014, which aims to shift educational practices and promote pedagogical change to support sustainable development. The DESD spans all subject areas and all levels of formal and informal learning, seeking more than an increased coverage of sustainability issues in the curriculum (UNESCO, 2005). The vision of change underpinning the DESD has provided an important prompt for revisiting those assumptions and practices of business that exploit people and their environments, by changing the ways that these issues are reflected and reproduced in our educational systems. Its global monitoring and evaluation process[8] is also making inquiries with key business education stakeholders as to whether changes are occurring that will more adequately address the needs of learners in this area. In a recent report commissioned by UNESCO to review progress during the DESD (Tilbury, 2011), business education features prominently, as do the pedagogical principles which need to be embedded in business school learning experiences.

These pedagogical principles at the heart of the international DESD are geared to the use of learning-based change approaches that can transcend the tokenistic coverage of sustainability issues in the curriculum[9]. The DESD is focused upon strategic change across education systems and through the reorientation and repurposing of existing curricula. Its focus is towards raising awareness about the need to shift pedagogical approaches and educational strategies as the most critical factors for achieving educational change and building the capabilities of learners to drive social change, recognising that this shift must take place in the context of existing education systems and processes. The implications of this agenda are apparent at multiple levels when exploring the frontiers of more responsible forms of future business education that could be devised in full awareness of the challenges of sustainability. To cross this frontier will require more widespread engagement and innovation not just through flagship projects and initiatives, but in the overall self-understanding and strategic foundations of business schools worldwide.

3. The response from business schools: disconnect and debate

The international influences described above have woven additional threads into the mainstream discourses of business education, but have had only limited impact on educational practice across the large majority of business schools. Urgent questions remain to be addressed in relation to the general priorities and practices of those academic institutions that provide the qualifications and learning experiences of our future managers, leaders and entrepreneurs. Whilst there are examples of innovative practice, including some fairly high-profile offerings, more thoroughgoing reorientation of the business curriculum in higher education is still the unexplored frontier. Work undertaken by the Australian Research Institute in Education for Sustainability has suggested that only a handful of business schools have recognised the true nature of this challenge (Tilbury *et al.*, 2004). More recently, the European Academy for Business in Society reported that although 76 percent of senior executives see the imperative for leaders in dealing with the challenges of sustainability, less than 8 percent think that business schools are providing the right kinds of skills development in this area. The deeper and more systemic responses that aim to reprioritise and refocus the efforts of the entire community of business educators, business leaders and business schools have yet to be devised.

As the literature clearly points out, one of the most immediately visible trends is that those programmes that have been adjusted to tackle issues global responsibility and sustainability have mainly been at postgraduate level. The most common response has been to include new modules within existing MBA programmes at suitable points in the periodic curriculum redesign cycle, to provide attention to ethics and sustainability[10]. However, these offerings are often elective specialist subjects or optional units, which attract those already engaged with the ideas or committed to sustainability in business. This means that other components of programmes, which constitute the majority of the business education, continue to reproduce models of unsustainable thinking and practice. Surveys among students and alumni have been highly critical of these shortcomings and the lack of integration on offer (Aspen Institute, 2009; Christensen *et al.*, 2007; Stoddard, 2009; Tilbury *et al.*, 2005).

A related issue is that the level of sophistication in dealing with sustainability issues varies widely across the sub-disciplines within business curricula, without parity of attention or efforts to unify student understanding across the programme of study. As noted earlier, perspectives around sustainability are often confined to issues of

risk and compliance, corporate reporting and/or the kinds of technological fixes that most concern the business community (Tilbury *et al.*, 2004, 2005). This is not to say that sustainability education is limited to specialist modules or to technicist approaches. Indeed, numerous journal articles reveal the growing presence of sustainability themes in economics and accounting, business management and strategy, business ethics, corporate reporting and organisational change[11]. However, this coverage tends to be uneven and has not often been accompanied by overarching conceptual frameworks or pedagogical approaches that enable students to make sense of the "cross-business" nature of the questions around global sustainability

A review of existing literature in this area shows clearly that the underlying message is about the need for integration, to bring pressing questions about globally responsible business practice and sustainability into clearer dialogue with existing thought about management and leadership. Several commentators have pointed to the distinct and persistent "disconnect" in the ways that sustainability concepts and paradigms are handled within business curricula, in relation to standard economic and management theories (Carrithers and Peterson, 2006; Jabbour, 2010; Stoddard, 2009; Stubbs and Cocklin, 2008). These issues can no longer be treated as "stand-alone" items that can be simply "bolted on" in piecemeal ways, to trumpet the contemporary relevance of curricula. Pedagogic strategies are sorely needed that will bring coherence to the responses of business schools and enable them to move past limiting discussions of tensions and problem solving, into a more thorough questioning of root causes and consideration of alternative business practices and futures, as promoted in the field of education for sustainable development.

The challenge goes to the heart of both educational and research priorities across business and management subject areas, as well as to the intentions and priorities for academic development within business schools and higher education institutions themselves, not to mention their relationships with external businesses and partners. As Valente (2011) reminds us, business schools may tout their attention to CSR and sustainability but can easily fail to expose the current ideology of business, which goes against public and environmental interests. Business schools remain closely connected to market priorities and the concerns of external organisations, resulting in criticism for their seeming lack of independent high-level research and the systematic way that this compromises their ability to launch the kind of inquiry and challenge most associated with higher education. At the same time, despite this critique of the overly practice-driven and business-responsive nature of business schools, many educators urge closer engagement with stakeholders in the business community to inform the development of provision in academic institutions. This tension is inevitable, even fruitful, but is suggestive of the need to reconfigure the dynamic relationships that provide guidance and impetus for learning processes in mainstream undergraduate business education. Both academic faculty and students alike have added their voices to the growing critique of business school provision in its inadequate delivery of more globally responsible business education (Aspen Institute, 2009; Christensen *et al.*, 2007; Stoddard, 2009; Tilbury *et al.*, 2005).

At present, businesses and business educators are preoccupied with increasing global debt, rising unemployment and the carbon footprint of business activities. Some perceive these as priority issues related to sustainability and seek to identify ways of minimising the impact of these challenges. Few go beyond addressing the current symptoms of unsustainable development to unmask the deeper need to reconnect business with the needs of people and planet. Re-thinking business education in the context of sustainable development requires more than just including alternative economic indices, expanding the concerns of current business models or sharing case studies of good practice in sustainable development – although these are important. As Springett (2010) has pointed out, there are fundamental ideological struggles involved in bringing sustainability into the business curriculum. To respond constructively requires theorization using the tools of critical management thinking as well as pedagogical approaches that challenge and question the various forms of "eco-modernism", "greenwash" and "eco-wrap" that pervade current business discourse and practice. The issue of scale is critical; in terms of scaling up the offerings of individual institutions from stand-alone courses to more unified provision, and in bringing this agenda to the forefront of international business education practice, including its elite and most powerful providers.

4.   **Bridges and platforms for mainstreaming sustainability into business curricula**

Mainstreaming "sustainability" within the curriculum is becoming critical, so that it becomes a lens through which management is viewed. Authoritative studies in this area have underlined the point that to address sustainability within business education involves fundamental challenges to existing paradigms and will require innovative pedagogies to deal with complexity and contestation (Hunting and Tilbury, 2006; Jabbour, 2010; Springett, 2005; Stubbs and Cocklin, 2008). Business education needs to encourage processes which question, connect and innovate rather than just aiming to improve current scenarios, helping students to go beyond habitual struggles to negotiate and reconcile tensions between business goals and sustainability imperatives. This will necessarily involve the entire community of practice around business education, so that educators, businesses, professional bodies and governmental agencies are informing the development of more widespread learning processes and professional capabilities for students. It will also require close attention to the ways that students can be assisted to reconcile

their various professional, personal and civic concerns in relation to sustainability. Examining the educational context for this type of reorientation shows that there are several valuable drivers and supportive factors in the present landscape.

A change in pedagogical practices towards business education for sustainable development is an important vehicle to achieve these types of transformative learning experiences (Bubna-Litic and Benn, 2003; Springett and Kearins, 2004; Springett, 2005, 2010; Stubbs and Cocklin, 2008; Tilbury *et al.*, 2004, 2005; Tilbury, 2011). As indicated above, this would provide the decisive move away from business education about sustainable development, with its presentation of definitions, tensions and specific items of sustainability content, to an approach which builds capacity for change and not just to respond to present unsustainable scenarios (Doppelt, 2009; Williard, 2005; Gentile, 2009). The new approaches that are needed will promote a more synergistic view of business futures, assisting inter-disciplinary learning and the development of systemic thinking skills, bringing together economic, social and environmental dimensions of business decision making, and bringing attention to the need for responsible professional practice. Education for sustainable development provides these tools, enabling learners to question exploitative practices and consider more sustainable futures, developing the capabilities needed for transforming business practice.

As the sands shift globally in terms of demand for higher education and public investment in its provision, students are arguably becoming better informed and more focused in their awareness of the need to tackle sustainability issues across varied organisational contexts and business sectors. Evidence from recent surveys points to growing student interest in the place of ethical issues within business curricula, with 77 percent of UG students and 78 percent of MBA students seeking stronger emphasis on sustainability and corporate responsibility (Christensen *et al.*, 2007; Net Impact, 2009, 2010). This level of student concern and expectation provides an important lever and context for the move towards globally responsible business education. Most importantly, the broad cultural diversity of the international student profile means that educational offerings need to be relevant and applicable to the widest possible variety of global scenarios. When educating in the context of rapid globalisation of trade and shifting patterns of economic interest worldwide, business education needs to also keep its sights on the contested issues around cultural diversity, plural values and human impacts that accompany such socio-economic changes – and will directly affect the lives of many students.

Several recent international initiatives have generated valuable tools which can be used to initiate and guide change in business education in line with sustainable development considerations. Frameworks such as the UN Global Compact (UNGC)[12] and the Globally Responsible Leadership Initiative (GRLI)[13] offer a starting point to explore the dynamics and possibilities for more globally responsible and sustainable business practices. Questioning the limitations and assumptions of these platforms, as well as exploring the new doorways which are opened by these ambitious frameworks, can help to energise the kinds of new approaches to business education envisaged in this collection. For students, these frameworks offer a clear opportunity for the development of skills, attributes and competencies that are directly linked to "real-world" efforts to improve social responsibility within organisations and to rethink business models in the light of new global challenges. Maintaining the flow of expertise into business education from the widest possible range of industries and companies is therefore critically important in supporting student learning and developing suitable and innovative curriculum provision in this area[14]. To support this type of innovation, business educators are in need of exemplars and materials to provide the essential stimulus they need to apply and localise these new pedagogical approaches. Practical tools in the form of case studies, assessment activities and other learning interventions are increasingly available in different aspects of the business curriculum.

There is also the need for more strategic guidance about the strategic approaches that are needed to tackle curriculum change and academic development within business schools. This need is recognised for example in a recent project funded by the UK Higher Education Funding Council for England, titled "Integrating Sustainability in Business Schools", which aims to provide case studies of aspirational business schools who have taken forward the sustainability agenda in terms of their educational and research activities as well as operational processes and practices[15]. Exploration of the organisational context for curriculum change linked to sustainability is at the growing edges of current thinking and practice, but examples are beginning to emerge which can shed light on some of the challenges of both organisational and academic leadership in this area, as well as the responses of institutions that are working to progress these matters[16].

5. Between and beyond boundaries: exploring the frontiers of business education

This special issue explores the challenges and imperatives discussed above through the sharing of expertise and insights from a range of curriculum change and pedagogic research initiatives in a variety of international higher education settings. The global dimensions of this collection are of particular importance in providing perspective on the scale of the issues at stake and the need for unified thinking about ways forward and about the possible sources for innovation worldwide. Setting the scene in terms of the urgent need to nurture the "worldly leadership" mindset in business students, Turnbull provides important insights on leadership from the perspective of Asian and African

leaders and student executives. Taking up the question of the need to shift practice right across the academic mission of the business school, Singh *et al.* explore thinking and practice among a sample of Indian business school leaders. Examining cases from institutions worldwide, Alcaraz *et al.* survey the trends in evidence across the first submission of PRME reports from business schools regarding their priorities for change in line with responsible management education goals.

The papers in this collection are quite clear about the ideological, conceptual and political tensions at stake when seeking to provide more substantive engagement with sustainability in the business curriculum. As Turnbull points out, the legitimacy of business schools is in question unless we can forge new pathways to provide an educational challenge to economic imperialism and the cult of individualism at the heart of our present paradigm. However, as she points out, we must be careful not to constrain students into thinking that the ideological tensions they encounter will require them to "choose sides"; and as Redding and Cato remind us, educators are also subject to these subtle tensions and need to be transparent about exposing their bias in the learning process. Parkes and Blewitt make a further important point; that the self-interest that drives economic theory usually manifests in fragmentation of personal and professional values, so there is a real need for forms of education that politicise people within their professional work contexts. Helping learners to retrieve and protect a sense of internal unity in the face of these pressures is critical, and as Robinson points out, this means embracing the fact that people have multiple identities and need to be encouraged to reflect on the tensions in their various responsibilities, values, ambitions and virtues.

This issue brings together several research efforts that seek to inform curriculum development through insights into specific pedagogic dimensions of student learning. Mather *et al.* report on the *Business Graduate Skills Project* in Australia which focused on generating understanding, learning activities and assessment standards for the skills and attributes required when bringing sustainability into the curriculum alongside other pedagogic priorities. Parkes and Blewitt open up discussion around the trans-disciplinary nature of sustainability education and the realities of critically reflective learning in this area, which exposes students to their weaknesses but can also result in forms of transformative change that can influence their careers and also leave a legacy in their organisations. Finally, an interesting issue raised by Redding and Cato, as well as Mather *et al.*, concerns the possibilities and parameters of implicit engagement with sustainability in the curriculum, the use of explicit "banners" such as education for sustainable development and the overlapping relationships with other pedagogic concerns. These papers are absolutely explicit on one point: that the need for pedagogic innovation is critical in order to provide globally responsible business education – and this necessarily involves a constructivist view of learning that will challenge notions of objectivity and expose ideologies and bias at several levels.

Strategic considerations also feature across the collection, honouring the importance of viewing curriculum change in the context of organisational and professional leadership in the academy. As Alcaraz *et al.* have shown in their analysis of the engagement of business schools with the PRME initiative, there are exciting developments in many institutions, but it is essential that more effort is directed towards embedding these principles in the organisational routines and missions of business schools, not to mention their broader university settings. Only when sustainability forms part of organisational as well as faculty and departmental strategies will these concerns begin to fully infuse academic and curriculum development priorities, rather than remaining at the fringes in the form of lone modules and enthusiastic champions. As Singh *et al.* show very clearly, there are several important considerations when surveying current practice in just one society and trying to envisage the depth of response that will be needed, not to mention the very different cultural, economic and development contexts in which these responses need to be generated and localized.

6.   Conclusion: business education for today and tomorrow

Business schools inform the practice of business as well as the thinking of leaders and managers in those public bodies who in turn influence the regulation and propagation of business. Higher education can potentially have a significant transformative influence on our ability to create alternative and more sustainable business futures – but in its current form, business education is failing to ask deeper questions and is at best simply assisting with improvements to current practice. We also need to bear in mind that certain challenges are continually unfolding in relation to our communities of business practice and education and the ways that they deal with sustainability. The learning responses that we generate must be framed and localized in relation to an extremely broad range of global contexts and with due respect for the intersections and complexities of development in the twenty-first century. Our student cohorts continue to diversify, which means that the potential impact of our educational efforts may have far more immediacy and range than might have been anticipated in previous eras. Earlier models of higher education were commonly grounded in thinking about the long-term transfer track, from the education of young graduates, through to them achieving positions of influence and contributing to significant change in society, but the patterns and shifts in student identities and responsibilities are now far more complex.

This special edition has identified some of the urgent questions relating to the practice of academic institutions that provide the qualifications and learning opportunities for our future managers, leaders and entrepreneurs

worldwide. It is hoped that the research findings and critical reflections contained here will contribute to debate, help to fuel curriculum innovation, and offer some inspiration for the future travels of our business educators and students. We urgently need to move forwards in strengthening connectivity at the educational interface between economic priorities and improved global responsibility. We will need to use craft and insight in harnessing the opportunities and strategic drivers that will engage our business schools, their host academic institutions and their partners in the business world in this journey. Today is the day – and tomorrow depends upon it.

Notes

1. Micro-credit schemes to support small scale and small footprint enterprises originated in developing countries, such as Bangladesh, where Nobel Peace Prize winner Muhammad Yunus founded the Grameen Bank, acknowledged as a seminal model for the microfinance approach. The Western economies have adapted the concept and developed schemes to support young businesses struggling to get loans. For more details, see: www.icaew.com/en/ library/subject-gateways/business-management/business-finance-and-grants/small-business-update/microcredits-and-crowdfunding-realistic-funding-options

2. These practices have been publicised through various WBCSD activities, for example, see the case studies available online at: www.wbcsd.org/templates/TemplateWBCSD5/layout.asp?type ¼ p&MenuId ¼ ODY

3. See: www.oecd/org/home/0,2987,en_2649_201185-1_1_1_1_1,00.html. This work is informed by earlier work commissioned by OECD (Boarini *et al.*, 2006).

4. The IUCN *Red List of Threatened Species* provides information regarding the risk of global extinction for plants and animals, to promote the conservation of biodiversity. See: www. iucnredlist.org/

5. www.iucn.org/about/work/programmes/environmental_law/elp_work/elp_work_issues/ elp_work_ecosystem/iucn.org

6. See programme outline as publicised at: www.oneplanetleader.org/

7. For example, this included the Singapore-based Business Alliance for Sustainability initiative across various industries (http://singapore.panda.org/for_businesses/alliance_for_sustainability/) and the NetPositive training programme and framework (www.terrafiniti. com/docs/NetPositiveTraining.pdf).

8. For further information on the monitoring and evaluation processes informing the DESD initiative, see: www.unesco.org /new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/monitoring-evaluation-process/

9. This approach contrasts education for sustainable development with approaches that are geared to education about sustainable development. The distinction between these two approaches was first articulated in the early 1990s and was informed by the work of John Huckle as well as that of John Fien. The terms are now commonly used by those engaged in sustainability education, to distinguish between efforts, which seek only to inform and efforts to transform thinking and practice for sustainability. The latter has received growing support by the international community as celebrated through the UN DESD (2005-2014).

10. http://en.wikipedia.org/wiki/Sustainable_MBA lists 20 MBAs which fall into this category (accessed 29 May 2011).

11. The *Journal of Global Responsibility*, the *International Journal of Sustainability in Higher Education* and the *International Journal of Sustainable Society*, all feature regularly articles documenting this.

12. The UNGC sets out ten principles for the alignment of business operations and strategy around labour, human rights, anti-corruption and environment issues. See: www. unglobalcompact.org

13. Formed by the European Foundation for Management Development and supported by the UNGC, the GRLI develops principles of globally responsible leadership to inform companies worldwide. For more details, see: www.unprme.org /participants/coconvening-organisations- steering-committee/grli.php

14. Research is emerging to support the growth among external organisations for graduates capable of meeting their needs in responding to sustainability agendas. One recent UK-based study of over 700 organisations across industry sectors reported that 93 percent are accelerating their strategic efforts on sustainability in the next five years but many feel that their need for applied skills in this area is not being met (BITC, 2010).

15. The project is hosted by the University of Nottingham in partnership with the University of Bath and is due to conclude in September 2011. See: www.nottingham.ac.uk/iccsr/isibs/ abouttheproject.aspx

16. A pioneering example of this kind of approach can be found in the work of Universiti Sains Malaysia, where the business school has begun to engage in curriculum change in the context of a nationally supported initiative using a "whole institution" approach to sustainability involving both corporate and academic strategy.

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