

**EDUCATION FOR SUSTAINABLE DEVELOPMENT, THE UNGC PRME
INITIATIVE, AND THE SUSTAINABILITY LITERACY TEST:
Measuring and Assessing Success**

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Since Brundtland (WCED, 1987), the United Nations has been at the forefront in promoting initiatives that maintain attention on the underlying issues relating to sustainable development. All the evidence since 1987 suggests that humanity is degrading the biosphere in a manner that is almost certain to have major impacts in all countries in the world within a generation. Our over-exploitation of natural resources, and the pollution and emissions that result, are creating destabilising changes to climate, which are likely to see extreme weather events becoming increasingly prevalent. The conversion of natural capital into financial capital also creates a growing inequality gap between rich and poor, not only between the developed and the developing world, but also within all countries in both designations. We are already seeing a public reaction to this phenomenon in the West with the “OCCUPY” protests in the US and UK, while in continental Europe there have been manifestations of unrest in a similar vein.

It seems ironic that, as Brundtland was calling on the people of the world to consider carefully the nature of “consumption”, a political shift was taking place that would herald the longest period of unbroken economic growth with low inflation that the world had experienced since World War II. The embrace of liberal economic policies, which has spread to most countries in the world, brings with it elements of financial deregulation, allowing flows of funds to move effortlessly around global financial markets. This change, coupled

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with rapid advances in technology generally, and IT in particular, has meant that consumption has increased markedly in the last 25 years, bringing with it many benefits, especially for the better off, but also creating the problems noted above.

The evidence is compelling – from whatever source it is examined. Much has been gathered by UN agencies, but there is equal evidence from studies carried out by academics and by NGOs. The inference is that for many who are wedded to compound economic growth forever, the mantra of the neo-liberals, little can be done to change either their beliefs or behavior. It therefore lies with upcoming generations, educated to understand the risks that unfettered growth produces, to alter the way politics is ordered, and perhaps develop a new approach to capitalism. This shift would take into account the other “capitals” that those politicians, who make humanity their care, are entrusted with, and which are equally as important as financial capital. Human, social, and natural capital are of equal importance and form the basis of “triple bottom line” thinking – one response to bringing about a more sustainable capitalist model.

This article is concerned with how we educate the next generations to a level that they do understand the grave issues that will confront them as they cross in to the second half of the 21st century. If they are to alter the way that economic growth is assessed, then new measures of performance need to envisioned and implemented; capital markets need to incentivise “good” behavior”; and politicians need to be prepared to make difficult decisions, which may not always be popular with the public at large. If the current generation of students are to play these roles, it would be useful to have insight into their level of understanding of the issues. As we shall explore below, a huge effort has been made to prioritize education for sustainable development, but we know little of the effectiveness of this activity. This article addresses an initiative that specifically tests this progress.

The article is structured as follows. Evidence relating to environmental degradation, resources overuse and climate destabilisation is examined to provide a context for the importance of the study. A review of the UN Decade of Education for Sustainable Development is then undertaken to plot the nature and reach of the initiative and to examine how partner UN agencies and conferences like the Rio+20, the UN Global Compact, and its sister organisation the Principles of Responsible Management Education (PRME) have acted to promote the initiative. The development and deployment of a “Sustainability Literacy Test” is then examined. In this section, we explore how the idea was conceived and consider the steps taken to structure a series of advisory panels to assist in gaining legitimacy for the initiative and to offer support in persuading higher education institutions (HEIs) to adopt the test.

DO WE HAVE A PROBLEM?

Our awareness of the fragility of the biosphere and concern over the limited nature of the resources available to us can be traced back many decades. Indeed the history of climate science and observations on what we now call greenhouse gases go back to the work of John Tyndall in the 1850’s. However, it was not until the 1960s, with the publication of *Silent Spring* (Carson, 1962) and the foundation of Greenpeace and Friends of the Earth at the end of the decade that the an environmental “movement” could be identified that sought to raise public awareness on the issues.

In 1972 The Club of Rome, which had been founded as an independent policy think-tank in 1968, published its report *Limits to Growth* (D. H. Meadows, Meadows, Randers, & Behrens, 1972). The authors used computer modelling to predict the impact of population, industrialisation, pollution, food production, and resource depletion on predicted growth patterns, basically concluding that by the mid-21st century the planet would be unable to This is an accepted manuscript of an article published by Society for Advancement of Management in SAM Advanced Management Journal, available online at <http://samnational.org/publications-2/sam-advanced-management-journal-contents/>. It is not the copy of record. Copyright © 2014, Society for Advancement of Management.

support the demands of the population. Although hotly debated at the time, and with much of the argument centring on the modelling aspects of the study, it was followed up by two other studies, the most recent being the “30 year update” (Meadows, Randers, & Meadows, 2004). This most recent study provides, in the view of the authors, further evidence of our overuse of resources and the ultimate inability to maintain growth at the rate preferred by government and business.

This view has been bolstered by other studies, most notably by the WWF, an NGO that one might not immediately associate with environmental research, but which, since 2002 has published a biennial *Living Planet Report*, the most recent of which, using different methodologies, reaches similar conclusions to Meadows and associates. UN studies, such as UNEP’s *Millennium Eco-assessment* (UNEP, 2005), and its series of *Global Environmental Outlook Reports* (see, for example, UNEP, 2012) point in a similar direction.

Returning to Tyndall’s focus, it was only in the mid-1980s that the scientific basis for concern was emerging. Indeed, between 1940 and 1970 as the mean worldwide temperature cooled by 0.2°C, interest in the phenomena of greenhouse effects had waned from a passing interest up to 1940. However, following the First World Climate Conference in Geneva in 1979, a predominantly scientific gathering sponsored by the World Meteorological Organization, a call was put out to governments to “foresee and prevent potential man-made changes in climate” (WMO, 1979). The first serious concerns were raised in 1985 when UNEP and WMO jointly organised a scientific conference in Villach, Austria. Here, predictions were made of the possibility of global temperature rises greater than in all history, and, as a consequence, sea level rises of over 1 metre by 2050 (ICSU/UNEP/WMO, 1986). In addition, a year later UNEP published a further report, “Environmental Perspectives to the Year 2000 and Beyond,” which provided a framework to operationalize the findings of the Brundtland Commission, and led the UN General Assembly to convene the Conference on Environment and Development in 1992.

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Environment and Development (UNCED), the “Earth Summit,” held in Rio de Janeiro in June 1992.

Prior to the conference, the UN had begun to frame a document for ratification at Rio. The UN Framework Convention on Climate Change (UNFCCC) was adopted by the UN in 1992, and became open for signature at Rio. By June 1993, it had received 166 signatures. It has since been ratified by 189 states.² However, the scepticism held in some quarters on the science of climate change is clear in the wording of the original document, where a precautionary approach is urged “in the absence of scientific certainty.” A tension was developing within governments between appearing to support calls for a cut in emissions and the political imperative of doing nothing to threaten economic growth within their own economies.

In 1997, the UNFCCC held a summit in Kyoto, Japan to try to convince countries to sign a legally binding protocol to reduce greenhouse emissions. The Kyoto Protocol, as it became known, which came into force in 2005, was to be remembered as much for those who refused to ratify the agreement as for the measures that were proposed. Notably the United States would not sign, for fear of harming its own economic growth prospects, and this stance was also adopted by Australia, Japan, China, South Korea and India.³ This position has become entrenched by these countries with the formation of the Asia-Pacific Partnership on Clean Development and Climate, also known as AP6. This non-treaty pact is designed to allow Foreign, Environment and Energy Ministers from partner countries to collaborate to develop technology designed to reduce emissions. Unlike the Kyoto Protocol, which imposes limits on emissions, this agreement allows the member countries to set their own goals.

While all this political activity was going on, more and more conclusive evidence was emerging about the inevitability and immediacy of the threats from global warming and This is an accepted manuscript of an article published by Society for Advancement of Management in SAM Advanced Management Journal, available online at <http://samnational.org/publications-2/sam-advanced-management-journal-contents/>. It is not the copy of record. Copyright © 2014, Society for Advancement of Management.

climate change. When the 4th Assessment report was published by the Intergovernmental Panel on Climate Change (IPCC, 2007), the word “unequivocal” was used to describe the connection between human (industrial) activity and climate change, quoting a degree of certainty of 90%. In the natural sciences, this leaves little room for debate, but climate sceptics leapt on some of the models and methods used to make the predictions to cast doubt on all the findings. However, by the time the first reports of the 5th Assessment began to appear in 2013 (IPCC, 2013), the level of certainty had increased to 95%, and all but the most confirmed sceptic had grudgingly accepted the connection. However, accepting the connection is one thing – reversing the trend is altogether a more difficult proposition.

EDUCATION FOR SUSTAINABLE DEVELOPMENT

Despite the weight of evidence that the drive for economic growth, i.e., compound growth forever, is incompatible, in its present form, with sustainable development, there are few signs that any real change is taking place in government or in the boardrooms of major corporations. Indeed the structure of western financial capitalist enterprises and the organs that support them are resistant to any move towards adaptation of business models away from the status quo.

Examples abound, but a recent case in the UK illustrates the problem concisely. Drax PLC, a UK FTSE 100 listed company, operates the largest coal-fired power station in the UK, generating 7% of the national electricity output. It is also the UK’s biggest single emitter of CO₂, disclosing in its 2013 accounts that it produced in excess of 20 million tons. It is undergoing a process of converting 3 of its 6 generators to burn biomass in addition to coal, with a projected reduction in CO₂ emissions of 20%. However, in April 2014, when it was announced that the UK government was changing its level of subsidy, and consequently that

profits were likely to be affected, its share price fell immediately by 13%. As a result the company is “considering suing the government.”⁴ We are left to ponder what steps a government can take to compel corporations to act responsibly without first guaranteeing that their profits (and bonuses) will not be affected, additionally offering subsidies for doing something a reasonable person might think they should be compelled to do in any case. Equally, capital markets, instead of rewarding the company for moving to a fuel that is marginally more environmentally friendly, i.e., rewarding “good” company behavior, punish it and, implicitly, offer higher rewards if it reverts to “bad” ways.

Since the future policy makers, business leaders, and market participants are in our universities today it behoves us to equip them with the ability to understand that while we teach discrete subjects like strategy, operations and finance, in real-world application they link to systems that are interconnected – which have implications for the overall sustainability of the planet. Equally, we need to furnish them with the understanding to ascribe moral dimensions to choices that are often understood to be “amoral,” such as capital market activity.

We have, of course, been assisted in this endeavor by a number of UN-related initiatives that have been launched over the last 15 years. Indeed, separate agencies within the UN have adopted their own approaches to suit their own priorities. It would be a lengthy undertaking to detail all such activities, but in the context of the Sustainability Literacy Test, which will be discussed below, it is worth briefly highlighting UNESCO’s Decade of Education for Sustainable Development project and the UNGC’s PRME initiative.⁵

The Decade of Education for Sustainable Development

At the 57th Meeting of the UN General Assembly in 2002, the Decade of Education for Sustainable Development (DESD) was announced. It was to run between 2005 and 2014 and This is an accepted manuscript of an article published by Society for Advancement of Management in SAM Advanced Management Journal, available online at <http://samnational.org/publications-2/sam-advanced-management-journal-contents/>. It is not the copy of record. Copyright © 2014, Society for Advancement of Management.

it was launched at the UN Headquarters with a conference (held in Bonn in 2009) to monitor progress. The rationale was explained as follows (UNESCO, 2007):

The basic vision of the DESD rests on the principle of using education – formal, non-formal and informal – as an effective vector to bring about change in values, attitudes and lifestyles to ensure a sustainable future for sustainability and, consequently, for sustainable development. The DESD strives to achieve these results through the following objectives: facilitate networking, linkages, exchange and interaction among stakeholders in ESD; foster an increased quality of teaching and learning in education for sustainable development; help countries make progress towards and attain the Millennium Development Goals through ESD efforts; and provide countries with new opportunities to incorporate ESD into education reform efforts.

One of the partner organizations that has taken massive strides in this area since 2007 is the UN PRME. A concept paper circulated by Manuel Escudero (2006), who was then Head of the PRME Secretariat, outlined a new vision for schools of business and management to meet the changing demands of the decades to come. The letter outlined the failure of traditional approaches to prepare graduates to respond to demands for a more responsible way of managing companies. In particular he identified business education as the key to creating responsible managers, noting “the academic sector can play a strategic role as change agents, educating the managers of today and tomorrow, incorporating the values of responsible corporate citizenship into their education activities.”

Rio + 20

The 2012 UN Sustainable Development Conference in Rio de Janeiro was a major turning point in the perception of the role of education. Instead of viewing education as a “fundamental human right and essential for the exercise of all other human rights, promoting individual freedom and empowerment,”⁶ during the Rio + 20 Summit the international community finally expressed the major role that higher education can, and should, play in the construction of a sustainable world in the Rio Declaration for Higher Education (Higher Education Sustainable initiative).⁷

----- Insert Figure 1 about Here -----

Figure 1, which was developed by the UNGC Academic Working Group, and presented in the latest UNEP report, the Greening Universities Toolkit,⁸ shows that our responsibility has a wide scope that includes research, pedagogy, the social and environmental management of our campuses, and governance. Yet, despite the acknowledged efforts of individuals, and PRME signatory schools at a more general level, it is rare that establishments systematically integrate all the aspects of sustainable development in their strategies.

The Challenge

Just as in any other sector of activity, the deployment of sustainable development in our educational system will only happen on a grand scale when HEI performance evaluation systems integrate sustainable development. As long as we do not change the way that we reward or sanction, actions will remain either declarations of intent, or limited to a few militant activists. In the world of business schools, accreditations and rankings are the two

major drivers that shape establishments' strategies. It is worth noting that since the Rio Summit, accrediting bodies, with the EFMD at the top of the list, have started to reconsider their criteria, dedicating an entire accreditation chapter to ethics, responsibility and sustainable practice. Although rankings have existed for the evaluation of sustainable development (e.g., Beyond Grey Pinstripes, Green Matrix), these have only been applicable to institutions that are leaders in this field. During the "Sustainability in University Rankings" Conference, which took place in October 2013 at Ca' Foscari University in Venice, discussions began go further, focusing on how to integrate sustainable development criteria in traditional conventional rankings pertinent to all establishments (e.g., *Business Week*, *Financial Times*).

Professionals in this sector also started to organize themselves to produce something concrete in higher education. One of the first tangible implementation outcomes of Rio+20 was launched during the United Nations Environment Programme (UNEP) Congress in Nairobi (February, 2013). The international performance evaluation platform⁹ now groups the different evaluation tools on the 5 continents with tools such as the Green Plan (France), Life (UK & Australia), and STARS (US). The support of the UNEP, PRME, Global Compact and UNESCO for this platform demonstrates how the different stakeholders have understood the necessity of a true systematic vision in our establishments and the need to evaluate the strategies put in place.

What seems to universally accepted is that, beyond dedicated programs in sustainable development that train experts, we need a viral approach that infuses all education programs. We need to move away from a niche approach and have all actors in the economy engage with the subject, whatever their field of competence. For HEIs this means ensuring that all their students are properly equipped to take into account these elements in their future careers and able to assume the consequences of their choices, in full knowledge of the facts.

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In many of countries, consideration of the competences that are necessary for deploying a sustainable development approach began years ago. In France, for example, the government asked a panel of stakeholders to draw up guidelines of new competences, and make recommendations about the necessary educational approach for sustainable development. This group studies, subject by subject, what is missing today, and is guided by the CGE and CPU, the two main academic associations in France (business and engineer school and public universities), which represent almost 2.4 million students. It also includes representatives from the corporate world, unions, NGOs, ministers, and student associations.

Certain HEIs are working on the creation of tools for evaluating competences, behavior, and even the values of their students, during, or at the end, of their studies. Other initiatives include trying to define what a “responsible” manager, “responsible” engineer, “responsible” buyer, or “responsible” financial manager means in practice. These approaches therefore set out the context of appropriate competences. Each tool measures the particular capacities and competences linked to specific activities and professions. Yet, even if these tools are useful, or even indispensable, they cannot be common to all HEIs. The work done clearly shows that, beyond a few transversal competences, the application of particular competences remains difficult to transfer from one profession to another, one country to another, or one culture to another.

THE SUSTAINABILITY LITERACY TEST

The sustainability literacy test aims to assess the basic understanding of fundaments concepts relating to sustainability and societal responsibility, irrespective of ones' field of study. The general goal is to ensure that future decision-makers are aware of these fundamental principles when they take their decisions. The test comprises a multiple choice questionnaire of 50 online questions evaluating basic knowledge of sustainable development. This is an accepted manuscript of an article published by Society for Advancement of Management in SAM Advanced Management Journal, available online at <http://samnational.org/publications-2/sam-advanced-management-journal-contents/>. It is not the copy of record. Copyright © 2014, Society for Advancement of Management.

issues, and individual and corporate responsibility. It is aimed at all higher education students, whatever their level of studies, from undergraduate to postgraduate study, including the MBA and PhD.

The test covers a wide range of questions designed to assess the knowledge base of participants relating to the main challenges that face society and our biosphere. They include questions on the basic definition of sustainable development, key facts about social, environmental, and economic issues, as well as general knowledge about water and carbon cycles, greenhouse gases, and so forth. Other questions concern the responsibility of organizations in general as addressed by ISO 26,000, and companies in particular, such as the responsibility of the individual as an employee or simply as a citizen.

To allow the results of the test to indicate regional or national trends, two-thirds of the questions are standard across countries around the world, and relate to the issues facing the planet (e.g., global warming). The remaining third of the questions are based on issues specific to the local context (e.g., regulations, laws, culture and practices in a particular country).

Supported by a number of UN institutions, and using a framework based on UN protocols (e.g., High Level Committees, Regional Expert Committees), multi-tier agencies have agreed to validate and promote the test worldwide with the objective is to target 100,000 higher education students in the first year. The test has already undergone pilot study, and it intended that by summer 2014 around twenty different countries will have participated, including the United States, Brazil, India, Egypt and China.

Naturally, evaluating a minimum level of knowledge does not guarantee the future behavior of our graduates. However, it is anticipated that by putting a process in place on a global level, a dynamic for the integration of sustainable development in our institutions' strategies can be created. Some pioneer establishments might ask for a minimum score for This is an accepted manuscript of an article published by Society for Advancement of Management in SAM Advanced Management Journal, available online at <http://samnational.org/publications-2/sam-advanced-management-journal-contents/>. It is not the copy of record. Copyright © 2014, Society for Advancement of Management.

graduation; others will use the test as an educational tool to raise awareness for students or to evaluate the impact a program has on students, by having them pass the test at the beginning and at the end of their studies. The tool will be free for universities, and has the potential to be offered to companies and a wide range of institutions. The diffusion of the test could result in a general improvement of knowledge on the fundamentals of sustainable development for every graduate from higher education.

CONCLUSION

Those who have been active in the sector know how effective initiatives to “green” our campuses have been. In the UK, the Environmental Association of Universities and Colleges (EAUC) has been at the forefront of the initiative developing incentives and rankings to encourage estate professionals to become involved, and report their progress. This activity has been so successful that there is a feeling in many institutions that the natural home of sustainability lies with the Estates Department. While not wishing, in this article, to develop arguments around this specific point, there seems little doubt that measurement of HEI outputs in this area (i.e., research and teaching) has not been as effective.

It is inevitable, however, that as each new measure is developed critics will offer warnings of the limitations of such exercises. This test is no different; and while the architects of the test and the oversight committees strive to ensure that the questions have been developed in a way that offers a fair test, comparable across countries and cultures, there will be issues that emerge and that will need to be addressed as the geographical scope widens.

For the first time, however, it will be possible to examine meaningful data relating to student understanding of sustainability issues. Researchers will be able to plot changes in different countries, regions and continents, and theorize more effectively on how the ESD initiative might be advanced. Policymakers will also be able to use the research to guide the This is an accepted manuscript of an article published by Society for Advancement of Management in SAM Advanced Management Journal, available online at <http://samnational.org/publications-2/sam-advanced-management-journal-contents/>. It is not the copy of record. Copyright © 2014, Society for Advancement of Management.

future priorities in education as a new generation of (hopefully) better informed undergraduates progress through our HEI system. Equally, those within HEIs – teachers, curriculum developers and program designers – will have data to work with to help them plan new modules, courses and programs.

The PRME initiative has now over 550 signatories in over 80 countries. It would be difficult to argue that it has not had a positive effect in promoting research and teaching in sustainability subjects. However, without being able to fully understand how effective it has been in informing student perceptions and knowledge of the problems relating to sustainability issues, it depends on the energy and commitment of individuals to maintain the momentum and growth of the programme. Data from this test, whether initially demonstrating high, or low, levels of knowledge will be invaluable in evaluating the success of the initiative. As more data emerges overtime, so levels of knowledge and understanding can be plotted and used to further inform policymaking at all levels.

In closing we encourage you to explore the test, thinking about its potential application in your institution. The Sustainability Literacy Test can be accessed at www.sustainabilitytest.org. The first presentation of data from pilot test programs is planned for the UNESCO Conference in Nagoya (November 2014) when we will gain our first insights into the effectiveness of our educational program in this critical area.

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NOTES

1. See http://wdronline.worldbank.org/worldbank/a/c.html/world_development_report_2010/abstract/WB.978-0-8213-7987-5.abstract and <http://www.stiglitz-sen-fitoussi.fr/en/index.htm>.
2. See <http://unfccc.int/2860.php>.
3. The alignment in policy between the government of a country and the economic desires of its most significant corporations is nothing new, but as the size of some commercial enterprises now dwarf the GDP of many small nations, the issue has attracted widespread popular interest in the last few years (see, for example, Hertz, 2001; Klein, 2000; Monbiot, 2000).
4. See <http://www.theguardian.com/business/marketforceslive/2014/apr/23/drax-drops-terms-change-for-biomass-conversion>.
5. See http://www.unep.org/training/docs/Greening_University_Toolkit.pdf.
6. <http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/right-to-education/>.
7. This initiative, led by UNESCO, the UNEP, Global Compact, PRME and UNU was signed by close to 300 Deans and Chancellors and has become the most important voluntary contribution of all the summits.
8. See www.unep.org/training/docs/Greening_University_Toolkit.pdf.
9. www.sustainabilityperformance.org.

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Figure 1
Responsibilities of Higher Education Institutions

