

2018-08-06

Governance implications of the UN higher education sustainability initiative

Moon, CJ

<http://hdl.handle.net/10026.1/12270>

10.1108/CG-01-2018-0020

Corporate Governance: The International Journal of Business in Society

Emerald

All content in PEARL is protected by copyright law. Author manuscripts are made available in accordance with publisher policies. Please cite only the published version using the details provided on the item record or document. In the absence of an open licence (e.g. Creative Commons), permissions for further reuse of content should be sought from the publisher or author.

Governance implications of the UN higher education sustainability initiative

AQ:au Christopher J. Moon, Andreas Walmsley and Nikolaos Apostolopoulos

Abstract

Purpose – This paper aims to review the progress of a sample of (n = 307) signatories in the higher education sustainability initiative which commits higher education institutions (HEIs) to make smart commitments to achieve one or more of the UN sustainable development goals (SDGs).

Design/methodology/approach – A preliminary survey of n = 307 HEIs via online questionnaire and database search was conducted.

Findings – Findings reveal a difference between HEI governance, that is “instrumental”, and governance, that is “holistic”, in relation to sustainability.

Research limitations/implications – Implications identified for achieving SDGs in general and for academic–business partnerships, in particular.

Practical implications – Practical implications for enterprise (developing a tool to measure sustainability mindset) and for enterprise education (sharing of best practices from other HEIs).

Social implications – Improved understanding of the sustainability mindset will inform decisions about approaches to governing and operationalising sustainability in organisations.

Originality/value – The survey is not original but the emphasis on sustainability mindset (compassion, empathy and connectedness to SDGs) is.

Keywords SDGs, HEIs, HEIs and governance, Sustainability mindset, UN HESI

Paper type Research paper

Christopher J. Moon is Senior Lecturer at the Middlesex University, London, UK.

Andreas Walmsley is Associate Professor at the Plymouth University, Plymouth, UK.

Nikolaos Apostolopoulos is based at the Plymouth University, Plymouth, UK.

[...] the need of new ways of teaching and learning as well as a strong cooperation between higher education and business to enhance sustainable socio-economic development in general and new forms of sustainable driven enterprises in particular aims at changing the EU landscape of HEIs towards a stronger accentuation on new inter- and transdisciplinary ways of teaching and learning as well as sustainable entrepreneurial education, increasing university–business cooperation, new university spin-offs or related start-ups in the area of a “green economy” and a subsequent change in the curricula of European HEIs (CASE, 2017).

Introduction

The higher education sustainability initiative (HESI) was established in 2012 by a group of UN partners including the executive coordinator of Rio+20, UN DESA, UNEP, UNESCO, UN Global Compact, UN GC PRME and UNU. Initially, 272 higher education institutions (HEIs) from 47 countries made voluntary commitments to drive the sustainability agenda. Progress was evaluated in 2014 (HESI, 2014), finding that 73 per cent of 272 commitments made by HEIs indicated partial progress, either directly or indirectly; 18 per cent had not demonstrated any progress; and 9 per cent could not be determined. The methodology for the evaluation was based on the identification of keywords from HEI websites. Thus, if the HEI published at least one achievement on-line they were rated as “Y”, i.e. making progress. If online information was not available, then each HEI was rated as “N”, i.e. no progress or “U” for unclear.

Received 11 January 2018
Accepted 22 March 2018

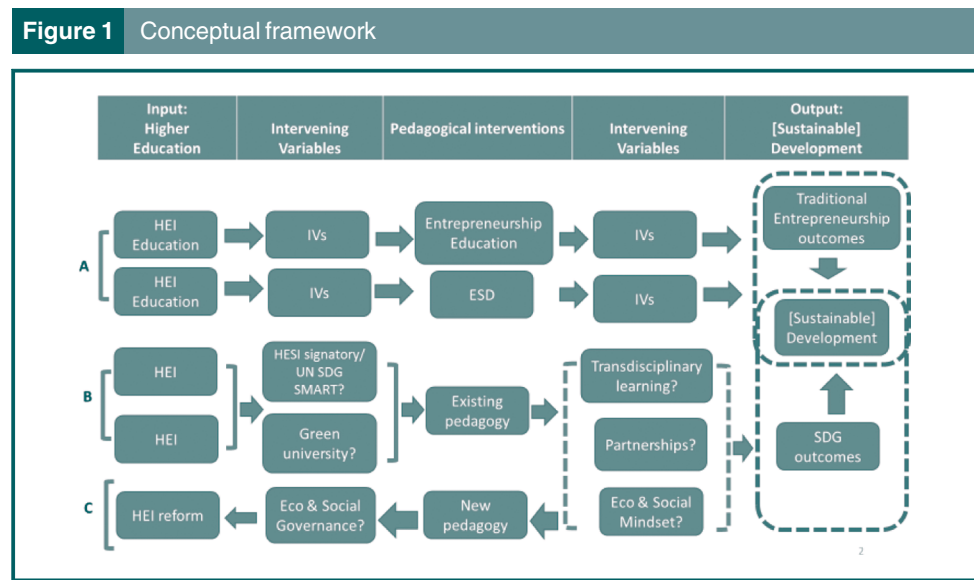
Research for this paper provides a more in-depth review of progress and discusses implications for governance of HEIs. The focus is on HEIs as they are considered to be a key catalyst for a sustainable society (IARU, 2016); and HEIs serve as institutional moral reinforcers (Hanson et al., 2017). Although some HEIs have charitable status many do not and are commercial enterprises with turnovers to match those of listed companies, and some VCs (CEO equivalent) earning in excess of £300,000 per year. Thus, HEIs are significant stakeholders towards achieving the SDGs but are also case studies for understanding how other organisations can face the formidable challenges with integrating sustainability into their governance and operations (Ferrer-Balas et al., 2008). And as Mindt and Rieckmann (2017) contend, the transformation of current economic systems towards sustainable development requires innovative sustainability-driven enterprises with competent managers and staff. This includes HEIs.

Conceptual framework

The conceptual framework in Figure 1. is based on academic literature relating higher education to sustainability outcomes (Wals, 2013, review for UNESCO of the Decade of Education for Sustainable Development). The literature on the “need” for both entrepreneurship education (ED) and education for sustainable development (ESD) are both strong. The impact of pedagogical interventions on both EE and ESD outcomes is less clear (Conditions A and B in Figure 1) due to numerous intervening variables (Wals, 2013). In fact, there are tensions between the goals of traditional entrepreneurship and sustainable development i.e. economic growth and the exploitation of resources (self-interest) vs limiting growth and conserving resources (sustainability). As James and Schmitz (2011) acknowledge, business schools sometimes fail to engage the exploration of sustainability holistically because of the lure to view sustainability as a tool for profitability instead of responsibility.

F1

Aragon-Correa et al. (2017) also draw attention to these tensions. These tensions partly explain the lack of eco and social entrepreneurship courses in HEIs (Moon, 2017); and also creates a potential problem for policymakers in regard to higher education. For example, Snelson-Powell et al. (2016) suggest that: rather than institute actual change and include sustainability in organizational activities, business schools may “merely” indicate that such change is taking place. This paper, therefore, investigates key factors of the above



literature, e.g. transdisciplinary learning, partnerships and eco & social mindsets (Condition C in [Figure 1](#)), to see if there are significant pedagogical and governance implications necessary for HEI reform, in order that HEIs can transform from mere catalysts of sustainable development to fully committed enablers. The impact of the research could represent a paradigm shift from conditions A&B to condition C.

Prior research

[Dawe et al. \(2015\)](#), in a report for the Higher Education Academy (HEA), investigated sustainability “literacy” of students in different academic disciplines over a six-month period. The authors found an overall patchy picture of sustainable development being marginal or non-existent in some influential disciplines but an increasingly higher profile in others; major gaps in curricula; and four major barriers to implementing ESD:

1. overcrowded curriculum;
2. perceived irrelevance by academic staff;
3. limited staff awareness and expertise; and
4. limited institutional drive and commitment.

The problem over major gaps in curricula and the four barriers cited all have governance implications.

The [Mader and Rammel \(2015\)](#) study for UNESCO Chair in Higher Education for Sustainable Development, International Association of Universities, Institute for the Advanced Studies of Sustainability (United Nations University), concluded that: to achieve related goals of drafted UN SDGs, HEIs, and higher education policy needs to take action to change not only single curricula, research programs or waste systems within institutions but enable a whole of institution and system-wide transformation in collaboration with practice. This highlights the importance of taking a more holistic approach to governance; and the significance of academic-business partnerships.

In total, 425 higher education stakeholders from 101 countries responded and reported about their achievements and challenges. The study, carried out in collaboration with the International Association of Universities and financed by the Austrian Federal Ministry of Science Research and Economy, was presented in September 2014 at the International Conference on Higher Education for Sustainable Development in Nagoya, Japan. Globally, 45 per cent of respondents say that they are inspired by policies to integrate sustainability into their institution.

The authors concluded that this transformation would be enhanced by the following actions:

- establishing transdisciplinary settings for research and education;
- aiming at capacity building and training to enable individual and collective leadership for sustainability in higher education;
- initiating the assessment of global, regional and local challenges so to link global challenges to regional context;
- establishing sustainability as a baseline for higher education policies at national, regional and global levels;
- applying a whole institution approach that reflects people's needs and competencies;
- inspiring transformations at the interface of education, research, policy and practice; and
- supporting a stronger focus on transformative education and new ways of teaching and learning.

Thus, it appears that HEIs might be willing to embrace the sustainability agenda in general but might lack the capacity to support the UN SDGs in their governance strategy and operations. In fact, [Wyness et al. \(2015\)](#) in a survey of $n = 54$ entrepreneur educators from Australia, New Zealand, UK and the USA found embedded sustainability practice was typically limited to “add-on” courses to traditional entrepreneurial teaching. Yet, [Snelson-Powell et al. \(2016\)](#) conclude that failure to implement sustainability could subject [HEIs] to legitimacy risks if the lack of operational engagement is later exposed. Thus, the [Mader and Rammel \(2015\)](#) recommendations provide an agenda for change.

Governance implications

[HESI \(2017b\)](#) have noted that institutional structures and hierarchies within universities often impede interdisciplinary and trans-disciplinary research and studies. A focus on governance could, therefore, have a considerable impact on spurring sustainable innovation and applied research. The emphasis could, therefore, shift from “teaching” students to supporting students, “enabling” them to learn applied skills of relevance to business and society in general. And if students were more involved in formal or informal institutional governance then perhaps there could be a renewed interest in the SDGs and in developing new and innovative solutions from the perspective of youth or the next generation.

Unfortunately, the European Commission-funded project “University Educators for Sustainable Development” (UE4SD) revealed that among 33 European countries there is a big lack of professional training programs in education for sustainable development. An investigation among 33 countries showed that even though 16 countries report about national strategies or action plans on sustainable development or ESD, only nine strategies call for professional development and only seven countries report about national or regional initiatives for professional ESD training ([UE4SD, 2014](#)).

Consequently, there is a sizeable gap between what is explained in national or regional strategies and what is done to empower people to act accordingly. Significant to CPD (continuous professional development) is ensuring that teaching-learning approaches are updated, and this can be achieved via good academic-business partnerships.

Academic–business partnerships

The most recent review of progress with the HESI was in July 2017 ([HESI, 2017b](#)) in New York, on the occasion of the 2017 session of the High-Level Political Forum on Sustainable Development – United Nations’ central platform for follow-up and review of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs) – and in conjunction with the 2017 Global Forum for Responsible Management Education.

Over 500 participants from governments, the United Nations (UN) system, academia and other relevant stakeholders including business attended the 2-h event, which presented concrete case studies from a wide range of HEIs and initiatives on how they are contributing to the implementation of the SDGs. Examples of best practices collaboration between academia and business include:

- ESPAE-ESPOL – five companies presented their experiences and progress in aligning their strategies with the SDGs through use of the SDG Compass.
- ChallengeLab.org of the Chalmers University of Technology provides a broad platform for students to engage and take on the planet’s biggest challenges in collaboration with industry, governments and academia.
- Stanford University Sustainable Urban Systems (SUS) initiative – an initiative which applies multiple engineering knowledge fields in an integrated approach to shape the

future of cities to test SDG localization strategies, collecting relevant actionable data at the city level to achieve the SDGs.

Whilst it is too early to evaluate the impact of these partnerships, it is clear that the overall trend is for companies to work with HEIs to better inform their strategies in support of the SDGs.

Teaching and learning approaches

Mindt and Rieckmann (2017) conclude that “To date, there is no comprehensive literature review dealing with teaching-learning approaches and methods of higher education for sustainability-driven entrepreneurship”. These authors distinguish sustainability-driven entrepreneurs as having:

- systems thinking competence;
- normative competence (values thinking);
- action competence;
- interpersonal competence;
- strategic management competence (this builds on the work of Wiek *et al.* who more recently identified a meta competence); and
- integrated problem-solving (Wiek *et al.*, 2016, p. 243).

Active, collaborative, problem-based, experiential and interdisciplinary approaches can all benefit from academic–business partnerships. Mindt and Rieckmann (2017) cite various authors that testify to such benefits (Barth *et al.*, 2014; Lehmann *et al.*, 2008; Thomas, 2009). One example is the European project CASE – Competencies for A Sustainable Socio-Economic Development – which is a joint European Master’s Programme on Sustainability-Driven Entrepreneurship involving ten universities and business partners from five European countries (CASE, 2017).

AQ: 1

Evaluations of nine pilot courses are currently underway. Examples of innovative pedagogical practices involving external partnerships (from a total of 19 partnerships) include:

- Austria’s “Sustainability Challenge” – intra- and transdisciplinary course in cooperation between four HEIs – encourages students to develop their own business solution together with business partners. TryOut – six-week internships in start-ups.
- Germany’s “Outside the University Box” provides city challenges for students with three external partners: the city administration, a local food entrepreneur (start-up company) and a municipal institution for elderly people and intense nursing. Working with a company partner on corporate sustainability communications. Internship in an institution with disabled persons.

According to CASE (2017), The CASE Knowledge Alliance jointly accepts the need of new ways of teaching and learning and a strong cooperation between higher education and business to enhance a sustainable socio-economic development in general and new forms of sustainable driven enterprises in particular.

Measurement of sustainability in HE

Governance

Cortese (2003) highlighted the critical role of higher education in creating a sustainable future. In fact, he acknowledged that it is the people coming out of the world’s best colleges and universities that are leading us down the current unhealthy, inequitable, and

unsustainable path. Thus, a transformation of higher education is called for. More recently, [IARU \(2016\)](#) has produced a report on “greening” the university. Whilst the report is written by the International Association of Research Universities, the findings are aimed at all HEIs. Thus, IARU recognises that all aspects of HEI life need to be geared towards achieving sustainability including sustainable campus organisation, campus-wide operations, buildings, laboratories, green purchasing, transport, communication, employee and student engagement. There are clear implications here for the governance of HEIs. Indeed, without the top-level support and more holistic approaches, there is little to suggest that HEIs can overcome the “cynical” or “instrumental” attitudes towards the environment that many students can have ([Moon, 2015](#)). Therefore, steps that HEIs take towards “greening” the university (as identified by IARU) will be used as a default measure of governance for the purposes of this research.

Sustainability literacy

Another measure of HEI commitment to sustainability is “sustainability literacy”. In fact, there is one test named [SULITEST \(2017\)](#) that has been taken by over 61,000 students from over 600 HEIs in 57 countries. Results show that those students are on an average more aware of specific SDGs than of the 2030 Sustainable Agenda and related UN processes. However, this test reveals a general awareness of sustainable development knowledge rather than impacts of HEIs tackling SDGs in particular. And [Dawe et al. \(2015\)](#) in their report for the Higher Education Academy (HEA) concluded from “sustainability literacy” there was an overall patchy picture with sustainable development being marginal or non-existent in some influential disciplines and a higher profile in others; major gaps in curricula; and major barriers to implementing ESD. Nevertheless, various statements are included in the accompanying survey for this paper to check for the strength and depth of HEI commitment. Thus, statements pertaining to pedagogical approaches, transdisciplinary projects, partnerships, give a more thorough indication of the level of commitment provided towards the HESI and concomitant SDGs.

Behavioural change

Clearly, the best measure of the effectiveness of ESD is actual behavioural change. This can be evidenced by identifying sustainable development projects initiated as a result of ESD programmes in HEIs. However, the actual impact of educational programmes might not be evident for years after students graduate, if at all. Thus, apart from impact case studies written of projects undertaken by participating students, most educators are again left to try and measure the effectiveness of ESD programmes through various default measures, e.g. attitude change, propensity to engage in sustainable development initiatives, etc. One approach to eliciting such propensity is through identifying sustainability mindset, or more specifically eco and social mindset in the case of eco and social entrepreneurs. [Moon \(2013\)](#) used personal construct theory and rep grid technique to show that the mindset of eco and social entrepreneurs does differ from more traditional entrepreneurs. The stage is now set to more precisely measure what this mindset involves; and several scales are explored in this study relating to compassion, empathy and connectedness in relation to the SDGs. The findings will form the basis of a tool that can be used by organisations, educators and students for reflection, appraisal and development purposes.

From the above literature, the following research questions were formed.

Research questions

Our survey instrument, educator interviews and student feedback mechanisms were designed to get answers to the above challenges:

- RQ1. What are the benefits and best practices in adopting the UN SDGs?
- RQ2. What are the benefits and best practices of the UN HESI as a tool for adopting the UN SDGs?
- RQ3. What are the challenges and obstacles faced by HEIs in adopting the above, e.g. governance issues, silo issues, mindset issues, etc.?
- RQ4. What are the implications for enterprise and entrepreneurship education, e.g. mindset of educators, CPD of educators, tools for educators, etc.?
- RQ5. What added value does enterprise and entrepreneurship education bring to HEI implementation of the SDGs?
- RQ6. To what extent is the “competence” model the primary theoretical underpinning to pedagogical development in this area i.e. sustainable entrepreneurship.
- RQ7. How can we effectively measure changes in student attitudes and behaviours as a result of ESD interventions?

Methodology

Sample

The target sample was the 307 HEI signatories to the UN HESI. Follow-up interviews were also conducted with 80 students of enterprise education and 8 entrepreneur academics. The initial survey instrument included questions on which SDGs each HESI had signed up to, progress with their implementation, challenges faced and how obstacles were overcome. Further, a series of statements from the literature were designed to test the validity of the literature on ESD pedagogy, governance, and partnerships, etc. As this paper focuses on governance and academic–business partnerships, only related responses from the initial survey are reported below.

Findings

F2 **Figure 2** shows that 276 of 307 HEIs committed to SDG#4 Education i.e. 89 per cent; 30 HEIs committed to SDG#13 Climate Action, i.e. 9.7 per cent. Only 24 HEIs committing to >1 SDG, i.e. 7.8 per cent. Of particular concern is that five SDGs are not being committed to by any of the HESI signatories. And SDG#17 Partnerships for the Goals is only committed to by $n = 5$ HEIs.

Figure 2 Frequency of SDG SMART commitments by HESI signatory

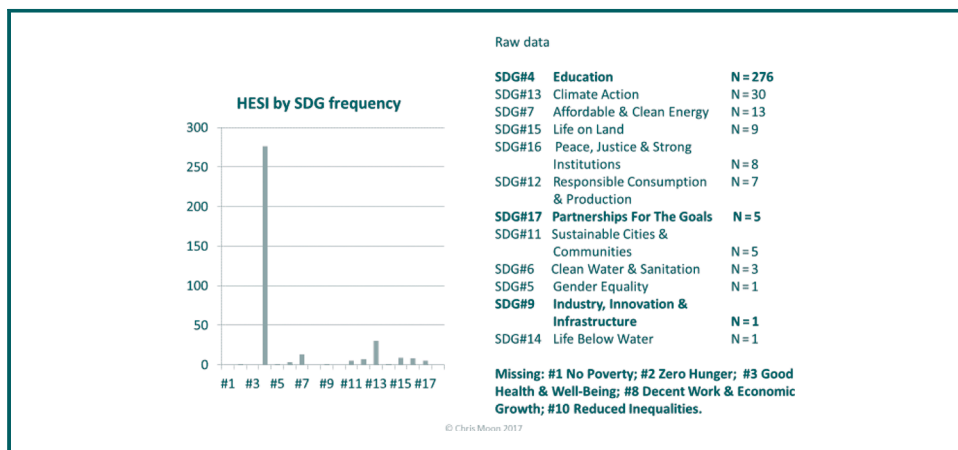


Table I indicates that although over 300 HEIs signed the UN HESI, only a small proportion are taking a holistic approach across the HEI to implementing the SDGs. Our measure based on IARU (2016) provides an indication of the extent to which whole institution approaches are being implemented i.e. board level support with sustainability integrated into operations. For each HEI that means ESD curriculum, transdisciplinary and extra-curricular activities including academic-business partnerships. For the majority of HEIs, these are still absent.

Table I Implications of the SDGs for HEI reform and enterprise education

<i>How the SDGs can help HEIs (PRME)</i>	<i>Obstacles for HEIs that can hinder the adoption of SDGs (adapted from Rasche et al., 2017)</i>	<i>How HEIs can overcome the obstacles (adapted from Rasche et al., 2017)</i>	<i>Implications for HEIs (EEUKRP 2017/2018 survey findings)</i>	<i>Implications for entrepreneurship education (EEUKRP survey findings 2017/2018)</i>
Strengthen and enable future business practitioners, thereby adding value to modern business and society	Groups of actors can obstruct the development and implementation of the SDGs	Base on mission and strategic vision of HEI; integrated through all levels of the HEI and through strategic engagement with staff and students	HEIs are catalysts for a sustainable society. Therefore, HEIs need to develop sustainably: including campus organisation; campus-wide operations; buildings; laboratories; green purchasing; transport; communication; employee and student engagement	Entrepreneurship education can benefit from being more competency based, e.g. CASE competences for a sustainable socio-economic development with real-world orientation, university-business cooperation, and sustainability-driven entrepreneurship
Give future business leaders the tools to recognise and maximise sustainable opportunities	Aspirational talk, greenwashing, and "bullshit" can be used to oversell commitment to SDGs	Ensure specific-timebound and measurable, linked to value creation, financial drivers and future investment	HEIs need to set goals based on achieving all 17 SDGs, with measurement and reporting based on all 17 SDGs	All enterprise and entrepreneurship students should be toolled in, e.g. Circular Economy Design techniques and Life Cycle Analysis (LCA) tools
Create a paradigm for teaching, learning and understanding sustainability as core to the business model	Individuals can exploit loopholes in the SDGs	Ensure covers all dimensions of sustainable development and implemented on an interdisciplinary scale	There are 17 SDGS. EEUKRP found that most HEIs have only signed up to one SDG #4 Education. Sustainability needs to be integrated across schools and programmes building on the agenda set by Mader & Rammel	Approaches to solving global risks increasingly need to be based on developing sustainability innovations via transdisciplinary approaches, partnerships and eco & social mindsets. Policymakers for EE should ensure that there is a paradigm shift in this regard
Connect with a network of stakeholders reaching beyond the business sphere, into signatories and supporting organisations	[Isolation; institutionalisation, bureaucracy, etc.]	Ensure covers entire value chain and all HEI stakeholders	Only N = 5 HESI signatories commit to SDG#17 Partnerships for the Goals. HEIs need to more actively consider ecosystems development in this regard, e.g. global identities, and promote academic-business partnerships across disciplines	Learning gain by students needs to be curricula and extra curricula. The Erasmus CASE program provides examples of academic-business partnerships

Discussion

This paper has highlighted some of the benefits of adopting the UN SDGs and a sample of best practices. Benefits include providing a focal point for students to learn about the breadth and depth of sustainability issues and problems within local and global contexts. Best practices are more evident when HEIs have committed to >1 SDG. In fact, this highlights the interdisciplinary nature of problems and potential solutions.

The UN HESI has been shown to be a valuable tool for adopting the UN SDGs in HEIs. The framework provides a reminder that there are 17 SDGs and innovative projects can be based on single or combined goals. By combining goals in different ways, students across disciplines can “disrupt” silo thinking and develop more creative solutions to complex problems.

HEIs are facing numerous challenges and obstacles in implementing the SDGs. Becoming one of the UN HESI signatories does provide an impetus to each HEI tackling the SDGs. However, there can still be important governance issues to face. Thus, HEIs that are adopting a more holistic approach to implementing sustainability have a more effective platform for SDG implementation, overcoming the vagaries of silo thinking. Indicators of this holistic thinking are evident when HEIs adopt more comprehensive measures to become a greener university (IARU measure). The growing emphasis on eco and social entrepreneurship in a small number of HEIs also provides a positive indication that mindsets are changing within HEIs. That is, accepting that traditional entrepreneurship has not always considered eco and social entrepreneurship as qualitatively different mindsets and more supportive of achieving the SDGs in general.

The implication for enterprise and entrepreneurship education is that CPD of educators is an important prerequisite for developing the next generation of eco and social entrepreneurs. Thus, there needs to be more CPD tools and training to enable staff development in this regard. This is especially true for enterprise and entrepreneurship education which is designed to enable the entrepreneurs of the future. Education to develop the mindset of entrepreneurs has ideally included an awareness of social, economic and environmental factors (QAA, 2012). However, there is increasing recognition that all graduates need to be prepared to make a strong contribution to a sustainable society (TEF, 2017). There is evidence of a changing emphasis on broader competencies. Thus, the development of sustainability competencies is now a feature of a small but growing number of university programmes. However, the efficacy of the competency model in this regard is still relatively untested and should be subject to further research.

Conclusions

This paper has reviewed developments in higher education towards achieving the SDGs. The UN HESI was used as a default measure of HEI commitment as each HEI has to make SMART commitments towards tackling one or more of the SDGs. Of the 307 HEI signatories surveyed 276 (89 per cent) only committed to SDG#4 Education. Whilst HEIs are clearly part of the education industry and education is critical to sustainable development, there is concern that some HEIs have selected SDG#4 out of mere convenience or marketing.

Other HEIs have committed to a broader range of SDGs and this provides the opportunity to identify best practices in relation to more than one SDG. And several HEIs have identified academic-business partnerships as evidence of such best practices. However, these examples are in the minority which raises concerns that the governance of HEIs is not fully committed to achieving the SDGs. Thus, numerous HEIs are still at the stage of simply providing courses in sustainability but not fully integrating them across disciplines and not addressing sustainability practices in a holistic way across HEI operations.

This paper recognises that if HEIs are to fully prepare students to work in the green economy and be the creators and innovators of more sustainable solutions, then HEIs need to transform their governance systems to fully endorse sustainability principles and practices. This includes signing up to the UN HESI but more so for each HEI to make SMART commitments towards achieving all the SDGs. Ashridge in the UK now report against all the SDGs is a leader in this regard globally. Perhaps it is time for other HEIs to transform or reform, in this way, to fully realise the transformative potential of the SDGs cited by [Stevens and Kanie \(2016\)](#).

References

Aragon-Correa, J.A., Marcus, A.A., Rivera, J.E. and Kenworthy, A.L. (2017), "Sustainability management teaching resources and the challenge of balancing planet, people, and profits", *Academy of Management Learning & Education*, Vol. 16 No. 3, pp. 469-483.

CASE (2017), "Competencies for a sustainable socio-economic development", available at: www.case-ka.eu

Cortese, A.D. (2003), "The critical role of higher education in creating a sustainable future", *Planning for Higher Education*, pp. 15-22.

Dawe, G., Jucker, R. and Martin, S. (2015), "Sustainable development in higher education: current practice and future developments", *A report for The Higher Education Academy*, November.

EC (2012), "Effects and impact of entrepreneurship programmes in higher education", available at: http://ec.europa.eu/growth/content/effects-and-impact-entrepreneurship-programmes-higher-education-0_en

Ferrer-Balas, D., Adachi, J., Banas, S., Davidson, C.I., Hoshikoshi, A., Mishra, A., Motodoa, Y., Onga, M. and Ostwald, M. (2008), "An international comparative analysis of sustainability transformation across seven universities", *International Journal of Sustainability in Higher Education*, Vol. 9 No. 3, pp. 295-316.

Hanson, W.R., Moore, J.R., Bachleda, C., Canterbury, C., Franco, C., Marion, A. and Schreiber, C. (2017), "Theory of moral development of business students: case studies in Brazil, North America, and Morocco", *Academy of Management Learning & Education*, Vol. 16 No. 3, pp. 393-414.

HESI (2014), *Rio+20 Higher Education Sustainability Initiative (HESI) Commitments - A Review of Progress*.

HESI (2017b), "Higher education institutions – key drivers of the sustainable development goals", A special event of the 2017 High-level Political Forum on Sustainable Development, UN HQ, New York, NY.

IARU (2016), *Green Guide for Universities*, International Association of Research Universities.

James, C.D. and Schmitz, C.L. (2011), "Transforming sustainability education: ethics, leadership, community engagement, and social entrepreneurship", *International Journal of Business and Social Science*, Vol. 2 No. 5.

Mader, C. and Rammel, C. (2015), "Transforming higher education for sustainable development", Brief for GSDR 2015.

Mindt, L. and Rieckmann, M. (2017), "Developing competencies for sustainability-driven entrepreneurship in higher education: a literature review of teaching and learning methods", *Teoria De La Educacion*, Vol. 29 No. 1, pp. 129-159.

Moon, C.J. (2013), "Where are all the ecopreneurs? The development of a construct for Eco-entrepreneurship", *ISBE Annual Conference*, available at: www.researchgate.net/profile/Christopher_J_Moon/contributions

Moon, C.J. (2015), "Green universities and eco-friendly learning: from league tables to eco entrepreneurship education", *European Conference on Innovation & Entrepreneurship*, available at: www.researchgate.net/profile/Christopher_J_Moon/contributions

Moon, C.J. (2017), "100 Global innovative sustainability projects: evaluation and implications for entrepreneurship education", *European Conference on Innovation & Entrepreneurship*, available at: www.researchgate.net/profile/Christopher_J_Moon/contributions

PRME (2017), "Principles for responsible management education", available at: www.unprme.org/

QAA (2012), *Enterprise and entrepreneurship education: Guidance for UK higher education providers*. Quality Assurance Agency for Higher Education.

Rasche, A., Morsing, M. and Moon, J. (Eds) (2017), "The changing role of business in global society", *Corporate Social Responsibility: Strategy, Communication, Governance*, Cambridge University Press, Cambridge/New York, pp. 1-28.

Snelson-Powell, A., Grosvold, J. and Millington, A. (2016), "Business school legitimacy and the challenge of sustainability: a fuzzy set analysis of institutional decoupling", *Academy of Management Learning & Education*, Vol. 15 No. 4, pp. 703-723.

Stevens, C. and Kanie, N. (2016), "The transformative potential of the sustainable development goals (SDGs)", *International Environmental Agreements: Politics, Law and Economics*, Vol. 16 No. 3, pp. 393-396.

SULITEST (2017), "Sustainability literacy test (SULITEST) of the higher education sustainability initiative (HESI)", available at: <https://sustainabledevelopment.un.org/partnership/?p=9551>

TEF (2017), "Teaching excellence framework", available at: www.hefce.ac.uk/lt/tef/

UE4SD (2014), "University educators 4 sustainable development", available at: www.ue4sd.eu/

Wals, A.E.J. (2013), "Sustainability in higher education in the context of the UN DESD: a review of learning and institutionalization processes", *Journal of Cleaner Production*, pp. 1-8.

Wiek, A., Bernstein, M.J., Foley, R.W., Cohen, M., Forrest, N., Kuzdas, C., Kay, B. and Withycombe Keeler, L. (2016), Operationalising competencies in higher education for sustainable development, in Barth, M., Michelsen, G., Rieckmann, M. and Thomas, I. (Eds) *Routledge Handbook of Higher Education for Sustainable Development*, Routledge, London, New York, 241-260.

Wyness, L., Jones, P. and Klapper, R. (2015), "Sustainability: what the entrepreneurship educators think", *Education + Training*, Vol. 57 No. 8/9, pp. 834-852.

Further reading

EEUK (2017), "Enterprise educators UK", available at: www.enterprise.ac.uk/

HESI (2017a), "The UN higher education sustainability initiative", available at: www.hesi.org

Moon, C.J. (2014), "Enterprise and entrepreneurship education: implications for innovation in delivery", *European Conference on Innovation & Entrepreneurship*, available at: www.researchgate.net/profile/Christopher_J_Moon/contributions

UN Sustainable Development Goals (2015), available at: <https://sustainabledevelopment.un.org/partnerships>

Velasquez, L., Munguia, N. and Sanchez, M. (2005), "Deterring sustainability in higher education institutions. An appraisal of the factors which influence sustainability in higher education institutions", *International Journal of Sustainability in Higher Education*, Vol. 6 No. 4.

Corresponding author

Christopher J. Moon can be contacted at: c.moon@mdx.ac.uk

For instructions on how to order reprints of this article, please visit our website:

www.emeraldgroupublishing.com/licensing/reprints.htm

Or contact us for further details: permissions@emeraldinsight.com

AUTHOR QUERIES

AUTHOR PLEASE ANSWER ALL QUERIES

AQau— Please confirm the given-names and surnames are identified properly by the colours.

■=Given-Name, ■= Surname

The colours are for proofing purposes only. The colours will not appear online or in print.

AQ1— Please note that the following citations are not listed in the reference list. Please provide full details for these citations: Barth *et al.*, 2014; Lehmann *et al.*, 2008