

Sustainability and Undergraduate Management Curricula: Changes Over a 5-Year Period

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Abstract

Global initiatives and a rapidly expanding academic literature identify the responsibility that universities have to incorporate sustainability education into their curricula. This study had two aims: first, to investigate the extent to which Australian undergraduate management curricula explicitly identified a focus on sustainability and, second, to examine the changes that had occurred between 2009 and 2014. A web-based content analysis was undertaken to gain a snapshot view of the emphasis placed on sustainability in all 40 Australian universities' business/management courses. Our findings showed that in 2014, three-quarters of the courses identified failed to include even one subject that all students must study that mentioned sustainability. This finding was only marginally different from the 2009 findings, suggesting that there is a long way to go before sustainability education in Australian universities' undergraduate management curricula could be claimed to be fulfilling the needs of students, businesses, and the broader society.

Sustainability has been identified as an emerging megatrend marking a societal and economic shift that will require fundamental changes in the way companies operate (Lubin & Esty, 2010). It is a global, decentralised movement without a single leader or political organisation (Hawken, 2007) that is based on an increasing customer demand for sustainable products and services, governmental concerns about climate change, industrial pollution, food safety and natural resource depletion, as well as the inclusion of externalities such as carbon dioxide emission and water use in strategic decision making (Lubin & Esty, 2010).

A global survey of senior executives indicated that 62% of companies had a strategy for corporate sustainability (KPMG, 2012) and 93% of the world's largest companies produce sustainability reports (Global Reporting Initiative Focal Point Australia, 2014). Sustainability in a business context aims to 'create long-term value for stakeholders by embracing opportunities and managing risks associated with economic, environmental and social developments' (Galbreath, 2009, p. 306). Hörisch, Freeman, and Schaltegger (2014) argued that sustainability may not only create financial rewards for companies and stakeholders, but also improve the quality of life for these stakeholders. Creating

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sustainability-based value for stakeholders requires recognising and balancing a multitude of interdependent objectives and demands (Hahn, Preuss, Pinkse, & Figge, 2014), thus creating a decision-making context in which the interconnectedness of economic prosperity, environmental integrity, and social equity are considered simultaneously (Gao & Bansal, 2013).

Hörisch et al. (2014) claimed that education in sustainability is a key contributor to more sustainable business practices because it can strengthen stakeholders' sustainability mindsets and empower them to implement sustainable practices in their organisations. Universities play a central role in preparing future leaders and managers to respond to the challenges of sustainability, and many higher education institutions have begun to incorporate and address sustainability (Ramos, Caeiro, van Hoof, & Lozano, 2015; Stephens & Graham, 2010). Increasingly, employers are seeking graduates who can meet their requirements with respect to sustainability (Thomas & Day, 2014). One response has been the Organizations and the Natural Environment Division of the Academy of Management (2016), which was created to promote research, teaching, and service focusing on the relationship between the natural environment and organisations.

In order to meet the challenges of sustainability management, students will need to develop an understanding of the long-term consequences and implications of business decisions, be knowledgeable about sustainability issues, and have the skills to develop, evaluate, and implement sustainability initiatives (Forum for the Future, 2004; Stubbs, 2011; Waddock, 2007). Students with these attributes will have enhanced graduate employment opportunities (Persons, 2011), and they will have the potential to profoundly affect the long-term sustainability of businesses (Setó-Pamies & Papaioikonomou, 2015; von der Heidt & Lamberton, 2011).

The importance of sustainability education for future leaders and managers has been reflected in a number of projects and initiatives at the global level, the most wide-ranging one being the Decade of Education for Sustainable Development, declared by the United Nations Assembly for the period between 2005 and 2014. A key objective during this decade was to develop the values, skills, and knowledge that promote sustainability across society (UNESCO, 2005). Educational institutions were encouraged to include key sustainable development issues in teaching and learning. According to Haig (2005, pp. 31–32), this initiative 'offers academe's best chance to date for making the deep and radical changes that will be necessary if the world's higher education institutions are to enact their responsibilities for creating a better and self-sustainable world'. An earlier project developed by the Association of University Leaders for a Sustainable Future (1990) outlined the major role universities have in achieving the outcomes identified in the Talloires Declaration. Signatories to this declaration undertake to 'create programs to develop the capability of university faculty to teach environmental literacy to all undergraduate, graduate, and professional students' (p. 1).

Another high profile initiative, the Principles for Responsible Management Education (PRME), was developed in 2007 by an international task force of leading academic institutions under the coordination of the UN Global Compact. These principles identify a global engagement platform for higher education providers to develop the 'capabilities of students to be future generators of sustainable value for business and society at large and to work for an inclusive and sustainable global economy' (PRME, 2014). The Higher Education Sustainability Initiative, founded in 2012 by a group of UN partners, also identified the key role that higher education institutions have in building more sustainable societies through research and teaching. This initiative identifies the responsibility of higher education institutions to

disseminate new knowledge and insight to students and build their capabilities (United Nations, 2014).

In addition to these projects and initiatives, the worldwide accreditation bodies — the Association to Advance Collegiate Schools of Business (AACSB) and the European Quality Improvement System (EQUIS) — have included sustainability in their assessment criteria. The AACSB eligibility procedures and accreditation standards require business schools to demonstrate a commitment to incorporate social responsibility issues, including sustainable development and environmental sustainability, through policies, procedures, curricula, research, and/or outreach activities (AACSB, 2016). To achieve EQUIS accreditation, a business school is required to provide evidence that it has ‘a clear understanding of its role as a “globally responsible citizen”’ (EQUIS, 2016, p. 64), and business schools need to demonstrate a commitment to ethics, responsibility and sustainability across all of their activities, including education, research interactions with business and community, as well as their own operations.

These global projects, initiatives and accreditation standards outline broad principles and frameworks that management educators could use to tailor their sustainability efforts, based on their institutional mission and capabilities. However, the broadness of the principles and frameworks creates a challenge for implementation because they rely on each higher education institution’s interpretation, as well as the commitment and support of individual faculty members (Maloni, Smith, & Napshin, 2012).

In this study we investigated whether Australian universities deliver on the expectation that sustainability is being incorporated in their undergraduate management curricula. We used a narrow definition of the term ‘curriculum’, focusing on published information related to a specific field of study, as opposed to a broader view that includes all experiences offered by business schools (Caza & Brower, 2015). This approach is similar to that adopted by Huang and Wang (2013) and Wu et al. (2010).

We first carried out an audit of the extent to which undergraduate business and management courses (referred to as degrees or programs by some institutions) offered by all 40 Australian universities explicitly stated that sustainability was addressed in their undergraduate curricula in 2014. We then reviewed the changes that have occurred over the 5-year period between our 2009 study (Fisher & Bonn, 2011) and 2014.

We focused on undergraduate management education because most of these students will enter the workforce and become future leaders and managers whose knowledge, skills, and values will have a significant influence on the sustainability of businesses. Graduate Careers Australia (2014) reported that 90% of graduates from business and management courses were employed four months after their graduation in 2013, and 81% of graduates who were employed full time identified a direct link between their field of study (i.e., business and management) and their occupations. Thus, any shortcomings in their education could have widespread implications not only for Australian businesses, but given graduates’ mobility, internationally as well. In addition, in 2014, there were almost 60,000 onshore international students studying in the field of management in Australian universities (Australian Trade and Investment Commission, 2014). Many of these students will return to their home countries and/or seek employment in multinational companies, so the way sustainability is addressed in their undergraduate education could have significant impacts at the international level.

Sustainability in Management Education

Researchers have identified a growing debate concerning the role of management education for sustainable development (Adomßent et al., 2014; Kelley & Nahser, 2014; Khurana, 2010; Pfeffer & Fong, 2002; Starkey & Tempest, 2008). Although there is

currently no strong theoretical underpinning of sustainability in higher education research (Figueiró & Raufflet, 2015; Stephens & Graham, 2010), there is a large number of empirical and descriptive studies that investigate the conceptualisation of sustainability in higher education, including academics' understanding of sustainability, the integration of sustainability into the curricula, as well as studies that investigate the impact of sustainability initiatives (for a review, see von der Heide & Lamberton, 2014). Reid and Petocz (2006), for example, identified three approaches to teaching sustainability, namely (1) the disparate approach in which teaching and sustainability are regarded as two separate entities, (2) the overlapping approach where specific ideas such as environmental or cultural sustainability are incorporated in a subject, and (3) the integrated approach in which sustainability is an essential component of teaching.

There are several journals devoted to environmental education, including *Australian Journal of Environmental Education*, *Environment and Education Research*, *Journal of Sustainability Education*, and *International Journal of Sustainability in Higher Education*. Special issues of journals have also been devoted to management education, social responsibility and sustainability; see, for example, *Journal of Management Education* (2003, vol. 27, no. 2), *Business Strategy and the Environment* (2005, vol. 14, no. 3), *Academy of Management Learning and Education* (2010, vol. 9, no. 3), and *Journal of Cleaner Production* (2014, no. 62). It has been argued that the goal of higher education for sustainable development is to facilitate reflection on individuals' responsibility for the complex effects of their decision making and behaviour from a variety of perspectives (Adomßent et al., 2014). However, despite the international agenda and the attention being paid to management education and sustainability, Adomßent et al. (2014, p. 3) claimed that '[h]igher education institutions have long lagged behind other private and public organisations in accountability for their social impacts'. Empirical research commissioned by UNESCO to review the UN's Decade of Education for Sustainable Development found that '[d]espite the early signs of a transition in some parts of the academic community, sustainability is still by and large external to the student, academic faculty member and administrator within higher education' (Wals, 2014, p. 10).

Doh and Tashman (2014) identified the following main challenges business school academics face in integrating sustainability into curricula: pedagogical, the mindset of students, knowledge-based (including lack of theory and terminology confusion), and administrative and socioeconomic constraints. Research by Figueiró and Raufflet (2015) identified similar challenges to the inclusion of sustainability into higher education management curricula: organisational, capability, terminological, and pedagogical. It has also been claimed that business schools have fallen behind other disciplines in introducing sustainability into their curricula (von der Heide & Lamberton, 2014), and other researchers have identified the need for more research into the extent to which there is consistent integration of sustainability into management curricula (Godemann, Haertle, Herzig, & Moon, 2014).

Although the academic literature on management education and sustainability has been expanding rapidly, Figueiró and Raufflet (2015, p. 10) concluded that 'sustainability in management education remains fragmented in terms of the diversity of issues, methodologies, theoretical frameworks or approaches, research issues promoted, and the sheer diversity of the implications proposed'. Most of the published empirical studies focused on single institutions' initiatives and case studies related to single courses or subjects (the components that form a course). See, for example, Benn & Dunphy (2009); Bridges and Wilhelm (2008); Persons (2012); Stubbs (2011); von der Heide and Lamberton (2011). Only

a limited number of empirical studies have investigated the degree to which sustainability had been integrated into the overall business or management curricula. Christensen, Pierce, Hartman, Hoffman, and Carrier (2007), for example, analysed the top 50 global MBA programs (as rated in the *Financial Times* in 2006) and found that there is a trend towards the inclusion of sustainability-related subjects in MBA curricula. A later study by Wu, Huang, Kuo, and Wu (2010), who conducted a web-based content analysis of sustainability-related curricula of 642 business schools worldwide, found that only 36 accredited schools (6%) offered specific subjects or subject components dedicated to sustainability-related issues, and only 57% of the 36 schools had made such subjects compulsory. The majority of sustainability-related subjects (55.4%) were offered at the graduate level, and 44.6% were offered to undergraduate students. Interestingly, their research also demonstrated that business schools from Oceania and Europe offered more sustainability-related subjects than American business schools. A comparison of business school curriculum designs from the top 100 business schools in China and the top 99 business schools in the United States showed a similar result, namely that sustainability-related subjects were more likely to be offered at the graduate level and were more likely to be electives rather than compulsory in both China and the United States (Huang & Wang, 2013).

The empirical research described in this article makes a contribution to the current debate by updating and extending previous research. We investigated the extent to which sustainability was identified as being included in the undergraduate business/management curricula of all Australian universities in 2014, and we examined the changes that have occurred between our 2009 study (Fisher & Bonn, 2011) and 2014. The snapshot provided by this study contributes to the current understanding of the extent of integration of sustainability education in one context — undergraduate management curricula in Australia.

Methodology

Three streams of research have been identified in studies focusing on the inclusion of sustainability into management education: descriptive, prescriptive, and analytical (McDonald, 2004; Setó-Pamies & Papaoikonomou, 2015). This research fits within the first stream and presents primary research using web-based content analysis to investigate the published information related to all 40 Australian universities' undergraduate business/management courses to gain a snapshot view of the emphasis that universities placed on sustainability in their curricula. Content analysis has been described as a systematic, objective, and quantitative research method (Neuendorf, 2002) that mitigates the weakness of questionnaire research and the resource constraints of interviews (Wu et al., 2010). It is not reliant on perceptions or respondents' bias and provides information on what universities are actually doing rather than what individual program directors or educators perceive (Rundle-Thiele & Wymer, 2010).

The information on websites is publicly available and regularly updated, and websites are regarded as an important form of communication between universities and their stakeholders. One advantage of using this approach was that the same search and evaluation criteria could be used for all samples during the data collection process. Another advantage was that we accessed the same web-based information as students making decisions about their future studies.

In the management education literature, 'sustainability' has been conceptualised in various ways. We have adopted a narrow interpretation focusing on the single term *sustainability* (or sustainable), while other researchers have adopted a broader

interpretation, including corporate social responsibility and/or ethics (see, e.g., Moon & Orlitzky, 2011; Persons, 2012). An even more comprehensive list of sustainability-related terms including, for example, ecosystems, human rights, natural resources, and stakeholder management have been adopted by other researchers (e.g., Matten & Moon, 2004; Wu et al., 2010). In this study a narrow approach was adopted because we were interested in the extent to which sustainability was explicitly identified as being covered in undergraduate management curricula in the publically available information relating to courses and subjects. Including other terms such as corporate social responsibility and ethics, for example, would have diluted this research aim. This approach is in line with Christensen et al. (2007, p. 361), who argued that although there is some overlap between corporate social responsibility, ethics and sustainability, the three topics are ‘sufficiently different to merit study in their own right’. In addition, we wanted to be able to replicate and extend the 2009 methodology adopted in our earlier study to allow comparisons to be made across a 5-year period.

We searched the websites of all 40 Australian universities to identify undergraduate business and management courses (degrees, programs). We located the description of each course and used a coding system in which each author assigned a number according to whether the term ‘sustainability’ (or ‘sustainable’) was mentioned and, if so, whether the term was used in a sense that indicated a consideration of the environmental and/or social dimension of sustainability. Next, we identified the core (i.e., mandatory) subjects for each course and, where applicable, their management major (a sequence of subjects that forms part of a course), to locate subjects that had sustainability in their titles or descriptions (if the term ‘sustainability’ was in both the title and the description, we counted it as being in the title). This approach was adopted because we wanted to include only those subjects that all students were required to complete. To ensure reliability, each author rated the courses, core subjects and majors independently. The ratings of the two authors were then compared to determine the interrater reliability coefficient. The initial interrater reliability of the coding was 97%. After the independent rating, the authors discussed the courses, subjects or majors that they had rated differently. This discussion resulted in a consensus for all ratings.

In 2014, we also investigated whether universities offered sustainability majors within their business/management courses and identified the prescribed (compulsory) subjects in these majors. We then undertook a content analysis of the information provided about these subjects to identify how many of them contained the term ‘sustainability’ in their titles or descriptions. We also searched for stand-alone sustainability courses with business majors to identify how many of the prescribed subjects in these majors included the term ‘sustainability’ in their titles or descriptions.

In addition to the web-based content analysis described above, we investigated which universities had made public commitments to sustainability education. We identified the universities that were institutional signatories to the Talloires Declaration and those that had joined the United Nations Principles for Responsible Management Education initiative in 2009 and 2014.

Findings

The research findings are presented in four sections. The first section provides the university level information for 2009 and 2014. In the second section we focus on the business/management course level data for both years, and the third section presents the 2009 and 2014 core subject data related to these courses. In the fourth section we provide information related to sustainability majors within business/management courses in 2014 and stand-alone sustainability courses with a business major.

University Level Findings

In 2009, only 14 of the 40 universities (35%) in our study were institutional signatories to the Talloires Declaration. In 2014, this number had risen to 22 universities (55%) — an increase of 20% over the 5-year period. There was a larger increase in the number of Australian universities that had joined the PRME initiative. In 2009, only three universities (7.5%) were signatories, while in 2014, the number had increased to 17 (42.5%), an increase of 35%. In 2014, 29 different universities (72.5%) were signatories to either one or both initiatives. These findings suggest that since almost three-quarters of Australian universities had made a public commitment to include sustainability education in their business/management curricula, evidence of this commitment should be apparent in the publicly available information they provide for potential students, employers, and other interested stakeholders. The following two sections explore whether this was the case.

Course Level Findings

In 2009, all 40 Australian universities offered at least one business/management course, and in total, 48 courses were identified. Likewise in 2014, all universities offered at least one business/management course, with a total of 52 courses. [Table 1](#) categorises these courses by title.

TABLE 1: Undergraduate Business/Management Courses By Title

Name of course	Number in 2009	Number in 2014
Bachelor of Business	23	22
Bachelor of Commerce	13	21
Bachelor of Business Administration	5	3
Bachelor of Management	3	3
Bachelor of Business Management	2	1
Bachelor of Business and Commerce	1	1
Bachelor of Business Studies	1	1
Total	48	52

In 2009, only three of the 48 courses included the term ‘sustainability’ in their descriptions, and in 2014, four of the 52 courses did so. These results indicate that in 2009, 93.75% of all business/management courses offered by Australian universities made no reference to sustainability at the course level, while in 2014, 92.31% did not mention sustainability. Based on these figures, there appears to have been little change in the prominence given to sustainability at the course level in the publicly available information on university websites.

Further analysis of the 2014 data, however, indicated that there had been a significant change in the way a number of universities made sustainability education available to students in their courses — through sustainability majors. These majors are discussed below in Major Level Findings.

Core Subject Level Findings

Our 2009 analysis of the information describing the core (i.e., mandatory) subjects that all enrolled students must complete included in the 48 business/management courses and, where applicable their management majors, identified four core subjects that

TABLE 2: Use of the Term ‘Sustainability’ in Business/Management Core Subjects

Core subjects	2009		2014	
Sustainability in title	4	8.3%	8	15.4%
Sustainability in description	3	6.3%	5	9.6%
Sustainability not mentioned	41	85.4%	39	75.0%
Total number of courses	48		52	

included the term ‘sustainability’ in their titles (offered by four different universities): Ethics and Sustainability, Sustainable Enterprise, Sustainability in a Changing Environment, and Sustainability in Global Business. A further three core subjects contained sustainability in their descriptions (but not in their titles), offered by three different universities.

In 2014, the number of core subjects in the 52 business/management courses and, where applicable, their management majors, with the term ‘sustainability’ in their title had doubled to eight: Applied Ethics and Sustainability; Sustainable Business Management; Management and Sustainability; Ethics, Sustainability and Culture; Business Ethics and Sustainability; Sustainability in Global Business; Sustainability in a Changing Environment; and Environment, Technology and Sustainability. These subjects were offered by six different universities. In addition, there were five core subjects offered by five different universities with sustainability in their descriptions (though not in their titles). [Table 2](#) summarises these findings.

Major Level Findings

As mentioned above, there appeared to have been a change in the way that some universities included sustainability into their curricula. Ten of the 52 business/management courses (offered by 10 different universities) included a major in sustainability in 2014 and, additionally, two universities offered a Bachelor of Sustainability with a business focus: one included a major in Business, the other a major in Sustainable Business Management. The introduction of these majors and courses represented an important change over the past 5 years and suggested a greater emphasis on sustainability education. We now consider whether our findings confirm a greater emphasis on sustainability education through these majors.

Our analysis identified a broad range of structures for these 10 sustainability majors, with the number of prescribed (compulsory) subjects ranging between two and eight. There was also substantial variation in the number of subjects that contained sustainability in either their titles or descriptions. For example, the major Sustainability — Society consisted of eight prescribed subjects with six of them containing the term ‘sustainability’ (five in the title and one in the description), while the major Sustainable Business Management included six prescribed units with only two of them using the term ‘sustainability’ in their descriptions. [Table 3](#) provides the results for all 10 majors. In summary, the term ‘sustainability’ was not mentioned in either the title or description in 43% of the prescribed subjects included in these majors, while 35% of them contained the term in the title and a further 22% contained ‘sustainability’ in the description of the subject.

As stated above, two universities offered courses in sustainability with business majors: Bachelor of Sustainability (Business) and Bachelor of Sustainability

TABLE 3: Use of the Term ‘Sustainability’ in Majors by University in 2014*

Major name	Sustainability in title	Sustainability in description	Sustainability not mentioned	Number of Prescribed subjects
Sustainability — Society	5	1	2	8
Sustainability Sustainable Business	3	0	3	6
Sustainability Sustainable Enterprise	2	2	1	5
Sustainability Sustainable Enterprise	2	0	3	5
Sustainability Sustainable Enterprise	1	2	2	5
Sustainability Sustainable Enterprise	1	1	2	4
Sustainability Sustainable Enterprise	1	1	1	3
Sustainability Sustainable Enterprise	1	1	0	2
Sustainability Sustainable Business Management	0	2	4	6
Sustainability Sustainable Business Management	0	0	2	2
Total	16	10	20	46

*Each row represents one university’s major.

(Sustainable Business Management). These business majors included a total of nine prescribed subjects. Only one of these nine subjects (11%) used the term ‘sustainability’ in the title and a further two subjects (22%) used it in their descriptions. The other six subjects (67%) did not use the term ‘sustainability’ in either their titles or descriptions.

Discussion

In this article, we report on the use of the term ‘sustainability’ in the descriptions of undergraduate management curricula on university websites in 2014 and review the changes that have occurred over a 5-year period. Our research findings demonstrated that a significant number of Australian universities have publically stated a commitment to sustainability education. In 2014, 55% of all Australian universities were institutional signatories to the Talloires Declaration, an increase from 35% in 2009. In becoming signatories, these universities have agreed to ‘[e]stablish programs to produce expertise in environmental management, sustainable economic development, population, and related fields to ensure that all university graduates are environmentally literate and have the awareness and understanding to be ecologically responsible citizens’ (Association of University Leaders for a Sustainable Future, 1990). There was an even greater increase in the number of universities that had signed up to PRME. In 2014, 42.5% of universities had joined this initiative, compared to 7.5% in 2009. Signatories commit to ‘facilitate and support dialog and debate among educators, students, business, government, consumers, media, civil society organisations and other interested groups and stakeholders on critical issues related to global social responsibility and sustainability’ (PRME, 2014). The majority of universities (72.5%) were signatories to one or both initiatives in 2014.

These data indicate there has been a significant increase in universities' public commitment to sustainability in higher education; however, this commitment has not been translated into undergraduate management curricula. This finding is consistent with an analysis of one Australian university's engagement with sustainability that led the researchers to question whether non-binding declarations and agreements can play a practical role in advancing 'the sustainability agenda' (Bekessy, Samson, & Clarkson, 2007, p. 314) and with Tilbury's (2011) claim that these commitments are insufficient to have an impact on practice at the institutional or disciplinary levels in higher education. Another international study that evaluated the contribution of PRME in higher education concluded that support for this initiative was primarily aimed at gaining recognition for current activities rather than an indication of a commitment to deeper engagement with sustainability (Perry & Win, 2013).

Our research also identified 10 business/management courses with majors in sustainability and two universities that offered Bachelor of Sustainability courses with business majors. However, these sustainability majors and sustainability courses with business majors were offered by only 12 of the 40 Australian universities, suggesting the translation of the commitment to sustainability education into curricula is limited. In addition, there is a possible weakness in the sustainability majors identified by von der Heide and Lambertson (2011). These researchers reported that one university offering a sustainability major did not introduce any new subjects specifically for the major; rather, it was developed using existing subjects from various discipline-specific programs. While the benefit of this approach was the minimal resource implications, its disadvantage is a possible lack of coherence across these potentially disjointed subjects (von der Heide & Lambertson, 2011). Further research is required to determine whether this is a common problem across sustainability majors at other universities. In addition to these problems, students can choose whether or not to include a sustainability major as part of their studies. It is important to note that signatories to the Talloires Declaration and PRME commit to ensuring that *all* of their graduates have an understanding of sustainability and are able to generate sustainable value for both business and society. An optional major does not satisfy this requirement.

Our findings at the business/management course level and core (mandatory) subject levels provide a more accurate indication of the extent to which sustainability has been incorporated into the curricula for all management students. Overall, there has been little change at the course level over the past 5 years. More than 90% of all business/management courses made no reference to sustainability in either their titles or descriptions in 2009 and in 2014. At the core subject level, there has been a 10% increase in the use of the term 'sustainability' in the titles and descriptions, albeit from a very low base. However, 75% of core subjects did not include the term 'sustainability' in either their titles or descriptions in 2014, suggesting that the integration of sustainability into courses and core subjects is very limited. These findings are in line with the international research by Wu et al. (2010), as well as Huang and Wang (2013), which showed that only a small number of business schools offered sustainability-related subjects or subject components in their undergraduate curricula. Our findings in the Australian context do not support conclusions reached by Adom̄ent et al. (2014), who found that management education is increasingly addressing the need for students to have an understanding of sustainability perspectives that support socially responsible business.

The findings from this study suggest there is an urgent need for additional research into ways to overcome the impediments to incorporating sustainability education, including the development of models and frameworks to assist both university leaders and academic staff to fulfil their responsibilities in this area. Previous research identifies the main barriers to integrating sustainability education into curricula are

largely internal — lack of funding to support curricula redesign, lack of expertise and commitment on the part of teaching staff, resistance to change, and the absence of a coherent approach across institutional activities and disciplines (see, e.g., Evangelinos & Jones, 2009; Nicolaidis, 2006; Ralph & Stubbs, 2014; Ramos et al., 2015; Tilbury, Keogh, Leighton, & Kent, 2005; Wright, 2010). Ceulemans, Molderez, and Van Liedekerke (2015) claim that the higher education sector is lagging behind both for-profit and non-profit sectors in implementing sustainability reporting, which may have an impact on the integration of sustainability education into curricula.

There is a clearly identified need for business schools to critically review and revise their undergraduate management curricula to align student learning outcomes with the Talloires and PRME initiatives to which almost three-quarters of Australian universities have made commitments. Resources need to be allocated and an ‘all of institution’ approach adopted to promote this activity.

Our findings suggest that there is an important role professional associations such as the Australian and New Zealand Academy of Management and the Australian Business Deans Council could play in strengthening sustainability education. Accrediting bodies may also need to be more specific in identifying the criteria that need to be met with respect to sustainability education. Organisations and groups that promote the inclusion of sustainability into curricula could also play an important role; for example, the Association for the Advancement of Sustainability in Higher Education (2016) has a mission to ‘inspire and catalyse higher education to lead the global sustainability transformation’ and Australian Campuses Towards Sustainability (2013) ‘aims to inspire, promote and support change towards best practice sustainability within the operations, curriculum and research of the Australian tertiary education sector’. The Australian Council of Superannuation Investors (2015, p. 10) found that in 2015, 97% of the Australian Stock Exchange top 100 companies and 87% of the top 200 companies annually report on sustainability. Given this focus on sustainability reporting, these large employers could also play a key role in drawing attention to the gap in graduates’ education with respect to sustainability through their stakeholder engagement with business schools.

Our study has a number of limitations. First, the scope of our study was limited to Australia, hence our results may not be representative of universities and business schools in other countries. Second, as the data were drawn from web-based descriptions of course and subject offerings, there may have been additional information provided elsewhere that we did not access. Third, sustainability content could have been included in subjects such as Corporate Social Responsibility or Business Ethics without this being mentioned in their descriptions. Finally, this study did not assess the depth or breadth of the sustainability content in courses and subjects. Future research could take a more comprehensive approach involving a more in-depth investigation of both the stated and enacted curriculum. Such an approach would benefit from a research methodology using case studies and interviews.

Concluding Remarks

Overall, our study suggests that at the end of the Decade of Education for Sustainable Development, Australian universities have struggled to meet their public commitments to sustainability education in undergraduate management curricula. Although 73% of universities were signatories to the Talloires Declaration and/or PRME, this public commitment to sustainability education has not resulted in a significant increase in the prominence given to sustainability in management education at either the course or core subject levels. In 2014, three-quarters of business/management courses failed

to include even one subject that all students must study that mentioned sustainability in either their name or description. Even though there was a slight improvement in the prominence given to sustainability in undergraduate business/management courses between 2009 and 2014, our findings indicate that the majority of students enrolled in these courses graduate without any specific education related to environmental and social sustainability. As a result of this mismatch between the rhetoric related to sustainability education and the reality, the majority of business graduates moving into the workforce both domestically and internationally are neither equipped to enhance the sustainability of their organisations nor to have an impact more broadly on partner organisations, communities and regulators. Our study draws attention to the urgency and scale of the task with respect to incorporating sustainability into undergraduate management curricula.

Keywords: business curriculum and sustainability, education for sustainable development, higher education, management curriculum and sustainability, sustainable development

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