

The role of sustainability and innovation in constructing accounting education and future accountants

Nurul Nazlia Jamil

*Faculty of Economics and Muamalat, University Science Islam Malaysia (USIM)
71800, Bandar Baru Nilai, Negeri Sembilan
nurulnazlia@usim.edu.my*

Abstract

This study aims to examine to what extent and how effective the role of sustainability and innovation has been in constructing the accounting education and future accountants at the tertiary level. This study looks at the important issues of sustainability and innovation in the context of Malaysia and new understanding in business role and function of society where accounting education represents the precondition in meeting the challenges successfully. A mixed method approach was used for this investigation combining quantitative and qualitative research methods to provide more depth to the analyses. Both interviews and online surveys were conducted to determine the perceptions held by both academics and graduates, of the extent and the role of sustainability and innovation with Malaysia university degrees. There were mixed views on the current role of sustainability and innovation in accounting education within the Malaysia universities. Although there was a general consensus with both groups of participants that a start has been made, the integration of sustainability and innovation in accounting education is not in sufficient depth. There were also mixed findings on the role of accountants should play in the sustainability and innovation in accounting, however there was a general consensus around the fact that the role of accountants are important. Both group of participants indicated that it is important for sustainability and innovation in accounting education to be included into the courses at Malaysia universities. Based on the research findings, it appears that universities have to maintain or include sustainability and innovation into the syllabus to better develop student's knowledge as one pushing factor for them to take a look at 'big issues' like how accounting can either support or hinder sustainability and innovation directions for business and society.

Keywords: *Sustainability, Innovations, Accounting, Educations.*

Introduction

In the last 20 years world environmental and social disasters such as Chernobyl and Fukushima, have seen a renewed focus on the notion of sustainability, a concept first defined by the Brundtland Commission as development 'that meets the needs of the present without compromising the ability of future generations to meet their own needs', (WECD, 1987). Presently, Malaysia like the

majority of countries in the world, has no legislative requirements on how companies should report on sustainability. Sustainability reporting can be seen as the process of communicating an organisation's sustainability performance to its stakeholders.

There is a growing need within society and business for accountants to possess knowledge and skills relating to sustainability and its reporting. Malaysia is no different but presents particular challenges. The last ten years have also seen significant support for and discussion by the accounting profession of the concept of sustainability reporting (Bellringer et al., 2011; Gray and Collison, 2001). Over the past 40 years research studies undertaken by researchers such as Gary (2006,2010), Mathews (1997), Bebbington (2001), Deegan (2002) and Lamberton (2005) and others have debated the appropriateness of the current framework for sustainability reporting and the extent to which accountants should be involved in sustainability reporting. Given accountants' role in traditional financial reporting, these research studies found that accountants appear to be well positioned to participate in sustainability reporting. The research literature also indicates the growing momentum for the inclusion of sustainability accounting (both social and environmental) education within university accounting courses (Hopwood, 1990; Thomas, 2004; Segovia and Galang, 2002). As education is considered by many practitioners as central to achieving sustainable development, it is imperative that accounting education incorporates sustainability issues (Hazelton and Haigh, 2010).

The role of sustainability education in accounting courses at universities has been a contentious issue with seemingly large gap between what research has defined as best practice and what is currently being taught around the world (Gray and Collison, 2001). The important challenge for sustainability education is in the context of the emerging field of ecological economics and its new understanding of the business role and function of society. Accounting education represents the main pre condition in meeting these challenges successfully. Therefore, an objective of the paper which is to investigate the situation in relation to sustainability dimensions in accounting education, could be considered as relevant input to comprehensive understanding of the education issue.

The paper is structured as follows. Looking through the lenses of stakeholder theory, the paper commences with a brief discussion of the concept of sustainability, the development of sustainability reporting and the role of accountants therein. An extensive overview sustainability education within the global and Malaysia university context is provided next. Following this, the research method and approach taken in this paper are described before the findings presented. A discussion and implications of the findings follow before the paper is concluded.

Stakeholder Theory, Sustainability and Reporting

Smith and Sharicz (2011) defined a sustainable organisation as one that demonstrates the ability to maintain its business operations and finances viably, whilst not impacting negatively on any social or environmental systems. Sustainability was once viewed as a fringe area of business, driven at a cost, it is now more readily adopted and some businesses have been embedded sustainable business practises at the core of their operations as they believe that it makes them more successful (Engardio,2007).Despite the widely divergent views on what sustainability means

and how it can be advanced (Dryzek, 2005; Robinson, 2004; Scot et al., 2012) it is garnering more media, public and government attention, thereby putting firms under more pressure to account for their involvement in this area (Berkovics, 2010). This demand for accountability from society aligns with stakeholder theory which argues that organisations exist to serve all stakeholders, rather than only the shareholders who finance them (Stubbs and Cocklin, 2008). Stakeholder theory has therefore been used in the study of corporate social responsibility disclosure by many empirical researchers (Clarkson, 1995; Gallo and Christensen, 2011) who justify sustainability reporting on the basis that an organisation needs to communicate its corporate social responsibility performance to all parties who have a legitimate stake in the organisation. Such being the case, the role of accountants who are already actively engaged in financial reporting becomes more prominent as there have been increasing calls for accountants to take a more leading role in sustainable reporting also. The issue leads to the role that accounting educators can take initially equipping and influencing their accounting students regarding sustainable development practices and reporting, these students then become accounting graduates and subsequently, qualified accountants. The role that accountants can play in facilitating the communicative process in sustainable developments of an organisation will be discussed in the next section.

Sustainability education within university degrees

Calls have been issued for education for sustainability at universities as a way of minimizing disconnect between humans and the natural world (Holdsworth et al., 2007). According to Stewart (2010) agrees and mentions that government, industry and aid organisations look toward higher education institutes to provide sustainable solutions to environmental, societal and economics challenges. As this paper sets out to determine the perceptions held by lecturers and graduates of sustainability education within the Malaysia university context, it would be appropriate to first obtain an understanding of any extant frameworks that can facilitate a better understanding of the role of universities in sustainability development.

Universities began to introduce sustainability into the curriculum in an effort to improve understanding and help address issues of sustainability (Spicer et al., 2011). Tillibury and Cooke (2005) stated that education for sustainability should be understood as a change process rather than a set of outcomes to be achieved and should include critical thinking skills and participative enquiry. Similarly, Rohweder and Virtanen (2009), expanding on the critical factors that they identified, stated that partnerships between university and the community and a holistic approach are important to achieve the success. The literature provides extensive support for the idea that sustainability education at universities must use a multidisciplinary approach (Bosselmann, 2001; Spicer et al., 2011).

Sustainability education within university accounting courses

A number of papers have focused on the deficiencies in accounting education (Albrecht and Sack, 2000; Botes, 2006; Carr et al., 2006). Linked to the argument that there is a growing need for accountants to become key players and stakeholders in sustainable reporting and to possess knowledge and skills relating to sustainability, there has been a growing momentum for the inclusion of sustainability accounting education within university accounting courses (Segovia and

Galang, 2002; Thomas, 2004; Hopwood, 1990). Gray et al. (1994) argued that there is a definite place for social and environmental accounting education within university accounting courses, given the role they have in developing a student's ethics and in educating students in the wider sense, as well as promoting reasoning and critical thinking skills. In spite of these obvious demands and pressure for developing sustainability knowledge in students, research performed by Gray and Collison (2001) found that accounting education and practice in the UK were not responding to the move towards sustainability and that the knowledge of university students relating to sustainability were not being adequately developed. The lack of apparent career relevance seemed to be the dominant reason why undergraduate students did not study sustainability accounting (Gray and Collison, 2001).

In reviewing the content of sustainability education in accounting courses, Gray and Collison (2001) found that it was dominated by first teachings on environmental and then social accountability accounting. While research undertaken by Mathews (2001a, b) was an attempt to outline possible subject matter for a sustainability accounting course, Milne (2001) criticised the attempt for disregarding the importance of the interdisciplinary nature of sustainability accounting education. A key finding from this literature review shows that there is a lack of research on education sustainable related accounting courses.

Research Method

The data for this study was collected using a combination of quantitative and qualitative research methods. A mixed method approach was used to allow a broader range of research questions to be asked through the variety of research techniques used to collect data. Johnson and Onwuegbuzie (2004) wrote that this type of methodological approach will assist in providing stronger evidence for conclusions through the convergences of the findings.

For this study, semi structured interviews and a questionnaire instrument administered online was used in conjunction with an archival research data presented in Malaysia university web sites. An extensive review of literature helped to form the questions asked in the interviews with university lecturers and the questions in the survey instrument that was sent out to graduates. An extensive overview (archival data collection) of the websites of the different universities aided in determining the state of sustainability education in business degrees and accounting papers (courses) at Malaysia universities. This overview helped to provide an understanding of lecturer's viewpoints at their respective universities during the interview sessions held with them. The perceptions of selected lecturers currently employed at the universities were obtained through semi structured interviews, both face to face and/or electronic. The lecturer's selection was based on the research conducted via the university web sites, based on their teaching interests and research, to obtain one representatives lecturer per university. The perusal of the five Malaysia universities' websites and findings that sustainability was a focus at Malaysia universities both under and post graduate levels led to the selection of one university lecturer per university to interview. The next step of the data collections process was to conduct the interviews with lecturers to find out their perceptions on the adequacy of sustainability education within Malaysia university degrees, with a particular focus on the accounting degree programmes. A questionnaire survey instrument was also distributed concurrently to accounting students via electronic means to obtain their viewpoints

on the same research issue. The perceptions of recent accounting graduates were obtained from an online survey distributed to recent accounting graduates at the Big Four accounting firms: Deloitte, PricewaterhouseCoopers (PwC), Ernst and Young (E&Y) and KPMG in Kuala Lumpur and Selangor, Malaysia. Three of the firms emailed the survey to their recent accounting graduates, while one firm put a link to the survey on its internal website. The latter could have influenced the participation rate as fewer graduates in that firm were aware of the survey. A snowballing technique was also used to contact know graduates at the firms directly, to encourage them to complete the survey. Graduates were defined as those people who had studied accounting at Malaysia universities and completed undergraduate studies in the last three years. The survey questionnaire contained eight demographic questions and nine research questions. The latter group was split into four questions using a five-point Likert scale and five which required a selection of pre-determined answers and or open ended questions.

Of the 62 respondents, 35 (56 percent) were female and 27 (44 percent) were male. The respondents represented a spread among the different Malaysia universities. Table 1 provides the demographics of the 62 respondents who completed the questionnaire survey. It is important to point out that although 62 graduates who answered particular questions in the questionnaire instrument varied as they were given the option not to provide an answer or to answer an alternative question. The results and findings of this study follow in the next section.

Results

This section of the paper discusses the findings of the data collected from archival research of universities' websites, semi structured interviews with university lecturers and the questionnaires.

Sustainability integration into business degrees and accounting studies

As universities are seen as a vital part of society they have a role to play in the development of society as a whole by increasing their skills and knowledge base. Given the important function that universities fulfill, it is clear that they should not merely endeavor to equip students with the skills and knowledge to become professional accountants, but also explore the role of accountants in society and relevant developments in accounting thought. The extent to which sustainability has been incorporated into university degrees was explored in this paper through an archival data collection approach. An archival data collection research method using a content analysis approach was conducted on the web sites of each of the eight universities regarding degree structure and paper outlines, which enabled a compilation of the profile presented in Table II.

Table 1: Demographics

Age group	Male	Female	Total
18-21 years	2	5	7
21-25 years	23	28	51
26-29 years	2	1	3
30-33 years	0	1	1
34 and above	0	0	0
Total	27	35	62
Department at Work			
Auditing	19	23	42
Taxation	5	7	12
Accounting and advisory	2	4	6
Consulting	0	0	0
Forensics	0	1	1
Other	1	0	1
Total	27	35	62

Table 2: Sustainability education in Malaysia university business and accounting studies

University	Compulsory sustainability as part of the degree	Integrates sustainability into accounting papers	Offers sustainability papers	Offers paper in sustainability in business degree	
A	No	Yes	No	Yes	
B	No	Yes	No	Yes	
C	Yes	Yes	Yes	Yes	
D	No	Yes	Yes	No	
E	No	Yes	No	No	

The findings in Table 2 revealed that Malaysia universities have made progress towards integrating sustainability education into their accounting papers. However, the finding that 75 percent of the universities do not offer separate sustainability accounting papers which indicates a lack of priority in this area for tertiary accounting educators. The finding reinforces Parker (2007) study that also found that within the accounting degrees that stringent academic requirements to become a CA leaves little space for sustainability education. Another key finding was that, while all Malaysia universities did offer papers on sustainability in their business degrees, only one Malaysia University had a compulsory sustainability components as part of the required core papers for the degree programs. With this understanding of what is currently happening in the area of sustainability education in Malaysia's five main universities, the next section looks to triangulate the data findings from the semi structured interviews with lecturers with the findings from the questionnaire survey instrument sent out to accounting graduates. This triangulation of data discussion will use the following key themes identified from the literatures: sustainability

education at the university level and the adequacy of sustainability education for accounting graduates.

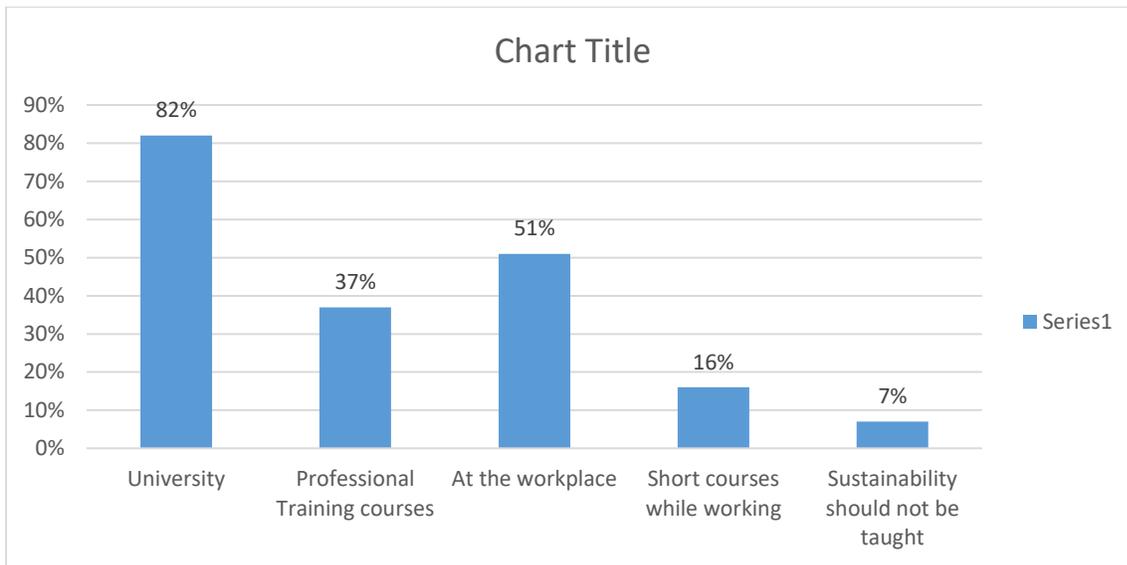
Sustainability education in university accounting courses

Lecturers generally perceived sustainability as one of the biggest challenges in society today, calling for greater accountability by business from both government and society. One lecturer from University C felt that the answer to the pressure exercised by stakeholders on business made it imperative for accounting graduates to be exposed to concepts around sustainability in order to help business navigate this area and retain their competitiveness. As found by Gray et al. (1994), Hopwood (1990), a key finding from the interviews with lecturers was that the majority thought that teaching sustainability as part of university accounting courses was very important. Researchers like Boyce et al. (2012) and Hazelton and Haigh (2010) also indicated that sustainability education at university is important and should be integrated into accounting courses. University lecturers were also of the opinion that the role of universities is to educate the graduate in a wider sense, rather than teaching them only skills to be job ready.

A lecturer from University A mentioned that the university education needs to place an emphasis on critical thinking around the impacts of accounting functions on society. This includes looking at how accounting may help or hinder sustainability focused. However, a lecturer from University D, in line with Milne's (2001) thoughts, felt that sustainability should have a broad approach which meant looking at accounting in a wider context and taking an interdisciplinary approach to learning.

In light of the findings from lecturer's interviews, accounting graduates were also asked to respond to a number of questions about how they felt in regard to sustainability education and their own experiences with sustainability education at university. When asked to rank how important it was for accounting graduates to have an understanding of sustainability concepts and practices, 77 percent of graduates either strongly agreed or agreed that it was important. The mean response was 3.95, indicating that the majority support the need for accounting graduates to have knowledge of sustainability. Following on from this, graduates were required to rank their agreement/disagreement as to whether accounting graduates should have sustainability education integrated into their tertiary education. The findings to the question "where do you think that sustainability should be taught?" showed that 82 percent of respondents believed that sustainability should be taught at university (Figure 1). This figure also shows that 51 percent of graduates indicated that sustainability should be taught at the workplace and 37 percent of respondents indicated that it should be taught in professional training courses. Therefore, similar to the interview findings with lecturers, a significant proportion of graduates, overall, believe that sustainability education is important for accounting graduates and that it should be part of university accounting education.

Figure 1: Where do you think sustainability should be taught?



Adequacy of sustainability education for accounting graduates

Lecturers were very knowledgeable on their own institution's progress in this space. They had a general idea about how Malaysia as a whole was faring, but were unable to comment in any depth on the state of other universities's sustainability education. Lecturer's thought that the extent of sustainability education has increased, with universities beginning to offer more courses and including more sustainability education in accounting courses. There was an overall perception that there were differences between how well universities were doing in this area and that this tended to be due to committed individuals at their respective universities driving the cause.

Unlike the Gray and Collison (2001) findings in the UK, the majority of lecturers thought their university had a good teaching method due to the interdisciplinary nature of their teaching and the content that was covered. For example, one lecturer stated that their university did not just focus on tools and techniques but, rather, looked at sustainability education more broadly from a critical approach. Some lecturers did express concern that sustainability was still treated as an "add on" to accounting courses, where the importance of sustainability does not permeate for every 113 colleague within the accounting department; as such, many lecturers see it as a "tick a box" exercise, so may only dedicate a portion of time to teaching sustainability at the end of the course. There was, however, a general consensus that there are still significant improvements to be made to sustainability education in accounting courses.

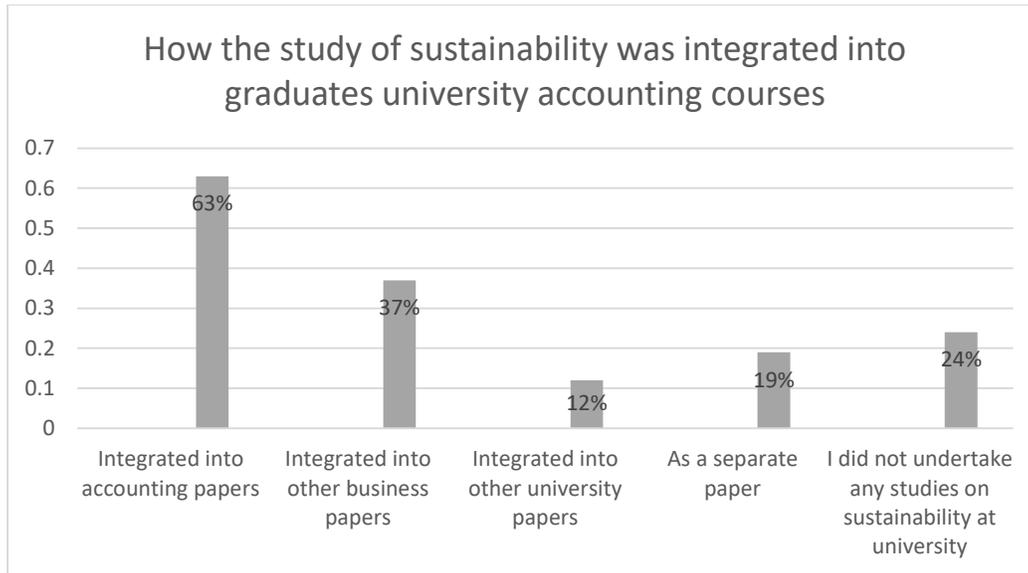
Several lecturers commented that textbooks are part of the problem as they segment sustainability into its own chapter rather than integrating it throughout the book. A lecturer from University B suggested that within management accounting, for example, environmental and social budgets should be integrated with the discussion on budgets, instead of addressing these just in the sustainability chapter. Lecturers generally thought that the scope of sustainability education was too narrow and tended to focus on "business framings" of sustainability. This means that students

will be looking only at how businesses operate sustainably, and at frameworks for sustainability reporting, instead of the wider context of sustainability that encompasses other disciplines. There was concern from lecturers whether one “optional” honours paper (which seemed to be offered at most universities) was enough to go over both the techniques and tools of sustainability, as well as critically viewing the progress of accounting in this regard and taking an interdisciplinary approach to the topic.

Furthermore, lecturers interviewed were unsure what the term “preparation” meant. Several lecturers were concerned that “preparing” accounting graduates for the workforce took a narrow view of the outcome of sustainability education and restricted a graduate’s development to tools and techniques acquisition. Lecturers thought that the role of university education was not to teach graduates all the skills and knowledge they would need in the workforce but, rather, to give them a comprehensive understanding of sustainability so that they were in a position to learn the job-specific skills they would need in the workplace. One lecturer from University C commented that no university can prepare job-ready graduates as “they have to learn technical competencies on the job”. The lecturer from University D also commented that although universities had made a start in bringing to accounting graduates a better understanding of sustainability, it would appear that lecturers themselves do not yet fully comprehend the extent of this area and how it integrates in their courses. Another lecturer (University A) commented that a graduate’s sustainability education was not currently considered when employers were choosing prospective employees.

In a similar manner to the interviews conducted with lecturers, but from learning rather than a teaching perspective, graduates were also asked a range of questions about their own experiences of sustainability education as part of university accounting courses. When asked whether the study of sustainability was integrated into their qualification, 67 percent stated that it was integrated into accounting papers, 37 percent stated that it was integrated into other business papers, 12 percent said it was integrated into other university papers and 19 percent said it was studied as a separate paper (Figure 2).

Figure 2: Integrating sustainability with accounting courses



Analysing the results in Figure 2 raises concern as 24 percent of accounting graduates indicated that the study of sustainability was not part of their university education. A quarter of accounting graduates did not study sustainability at university, despite the recognition by the government and research studies on the importance of sustainability as a global issue as well as the importance of sustainability education as part of university study. Also concerning was the fact that only 63 percent of graduates said sustainability was integrated into their accounting papers. It is worrying that, despite the significant amount of time spent studying different areas of accounting (including auditing, taxation, financial accounting and management accounting), only 63 percent of graduates have sustainability education integrated into their accounting papers. There is a strong push for sustainability education to be included in the accounting curriculum. Gray et al. (1994) write that such education increases graduates' ethical reasoning, improves their experience with real life situations, and helps develop graduates into contributing members to society.

Discussions and Implications

There were contrary views on the current state of sustainability education within Malaysia University accounting courses. Although there was a general consensus between both groups of participants that a start has been made, the integration is not wide enough and sustainability education is not in sufficient depth. Lecturers generally felt that the subject was not integrated very well; it was treated as an add-on, and it was not in-depth enough to give students a holistic understanding of sustainability issues. This finding suggests that lecturers who bring sustainability coverage into their papers do so on an ad hoc basis.

It does not appear that this area of teaching by lecturers follows any validated framework or guide that ensures effective change leadership for sustainability education at universities as suggested by Scott et al.'s (2012) study. Accounting graduates had contrary views on whether their

sustainability education was effective. Although it was encouraging to see around half of graduates thought university education developed their knowledge of sustainability, a significant 25 percent of graduates did not study sustainability as part of their university education. This high proportion of graduates that 117 did not study sustainability is concerning given the recognised importance of sustainability education (Gray and Collison, 2001; Hazelton and Haigh, 2010). There was uncertainty regarding the role that accountants should play in sustainability reporting; however, there was a general consensus around the fact that accountants do have a role to play. Accounting university lecturers said that given accountants' skills and knowledge around information systems, collecting, measuring, and reporting information, as well as external reporting, accountants should have an increased role in the sustainability area. Lecturers held the view that because accountants have to look at the wider picture, they can work with other disciplines as part of a team in sustainability business practices and the reporting of such practices. Accountants' skills and strengths in auditing mean they could also fulfil a role in auditing sustainability reports. There were varied views on whether accounting graduates thought accountants should be involved in sustainability reporting. It was perceived by graduates that for accountants to be involved, they needed to be part of business-wide teams. There was less certainty on whether accountants currently have the necessary skills to be involved in sustainability reporting, with only 44 percent graduates agreeing and 24 percent disagreeing.

Both groups of participants indicated that it is important for sustainability education to be included in accounting courses at Malaysia universities. University lecturers thought that given the importance of sustainability in society, it is important that accountants are knowledgeable in this area. They thought university education needs to develop students intellectually as well as making them job ready, and sustainability can help do this as well as improve ethical reasoning. Lecturers did indicate the study of sustainability needs to be integrated and interdisciplinary. The accounting graduates agreed that sustainability education should be integrated as part of university accounting courses and that a working knowledge of sustainability was important for accounting students. Graduates also ranked university as the most popular place for sustainability to be learnt.

Having sustainability integrated into accounting courses would enable students to see how sustainability links with each area of accounting and, once in the workforce, enable all accounting graduates to make decisions from a holistic point of view. The integration of sustainability into accounting courses would also help to develop students' critical thinking skills as they would be developing an understanding of the relationship that accounting has with society (Boyce et al. , 2012). This inclusion of sustainability education within university accounting courses would also fit with the Malaysian Government's goal of improving Malaysian university students' understanding of sustainability.

Based on the research findings, it appears that universities have to maintain or provide an optional higher undergraduate or post-graduate level paper in sustainability accounting. Evidence from lecturers' personal experience suggest that these courses better develop students' knowledge of sustainability as they have time to take an interdisciplinary approach to teaching and take a look at "big issues" like how accounting can either support or hinder sustainability directions for businesses and society.

Conclusion

Growing interest in sustainability has placed sustainability reporting on a platform which businesses use to communicate their sustainability efforts to stakeholders. An increasing number of businesses are producing a variety of sustainability reports according to different guidelines. However, there is concern in academic circles that current sustainability practices are merely displaying tokenism to the concept of sustainability. There is significant debate on the issues that future managers will have to meet increased challenges in the area of sustainability and that, increasingly; there is a push for accountants to play a more significant role in this space.

This paper found that lecturers generally agreed that accountants should play a role in sustainability reporting because of the increasing importance being placed on this type of reporting by businesses. However, lecturers expressed concern about the current state of sustainability reporting and also mentioned that university teaching approaches to sustainability should change. Graduates reported that sustainability is important for business and that accountants have a significant role to play in sustainability reporting. However, a significant number of graduates did not believe their study of sustainability was adequate and stated that there is a need to make sure that sustainability education is better integrated into university accounting courses. These findings suggest that accounting educators should be more engaged in sustainability education initiatives.

References

- Albrecht, W.S. and Sack, R.J. (2000), *Accounting Education: Charting the Course Through a Perilous Future*, AAA Accounting Education Series, Vol. 16, American Accounting Association, Orlando, FL.
- Bebbington, J. (2001), "Sustainable development: a review of the international development, business and accounting literature", *Accounting Forum*, Vol. 25 No. 2, pp. 128-157.
- Bellringer, A., Ball, A. and Craig, R. (2011), "Reasons for sustainability reporting by New Zealand local governments", *Sustainability Accounting, Management and Policy Journal*, Vol. 2 No. 1, pp. 126-138.
- Berkovics, D. (2010), "Fiche de lecture: cannibals with forks", *Majeure Alternative Management*, Vol. 5, pp. 1-16.
- Bosselmann, K. (2001), "University and sustainability: compatible agendas?", *Education Philosophy and Theory*, Vol. 33 No. 2, pp. 167-186.
- Botes, V.L. (2006), "The perceptions of the skills required and displayed by management accountants to meet future challenges", doctoral dissertation, UNISA, Adelaide.
- Boyce, G., Greer, S., Blair, B. and Davis, C. (2012), "Expanding the horizons of accounting education: incorporating social and critical perspectives", *Accounting Education: An International Journal*, Vol. 21 No. 1, pp. 47-74.
- Carr, S., Chua, F. and Perera, H. (2006), "University accounting curricula: the perceptions of an alumni group", *Accounting Education: An International Journal*, Vol. 15 No. 4, pp. 359-376.
- Clarkson, M.B.E. (1995), "A stakeholder framework for analysing and evaluating corporate social performance", *Academy of Management Review*, Vol. 20 No. 1, pp. 92-117.
- Deegan, C. (2002), "The legitimising effect of social and environmental disclosures: a theoretical foundation", *Accounting, Auditing & Accountability Journal*, Vol. 15 No. 3, pp. 282-311.
- Dryzek, J. (2005), *The Politics of the Earth: Environmental Disclosures*, 2nd ed., Oxford University Press, New York, NY.
- Engardio, P. (2007), "Beyond the green corporation", *Business Week*, 29 January, available at: www.businessweek.com/
- Gallo, P.J. and Christensen, L.J. (2011), "Firm size matters: an empirical investigation of organisational size and ownership on sustainability-related behaviours", *Business & Society*, Vol. 50 No. 2, pp. 315-349.
- Gray, R. (2006), "Does sustainability reporting improve corporate behaviour? Wrong question? Right time?", *Accounting & Business Research*, Vol. 36 No. 1, pp. 65-88.
- Gray, R. (2010), "Is accounting for sustainability actually accounting for sustainability, and how would we know? An exploration of narratives or organisations and the planet", *Accounting, Organisations and Society*, Vol. 35, pp. 47-62
- Gray, R. and Collison, D. (2001), *The Professional Accountancy Bodies and the Provision of Education & Training in Relation to Environmental Issues*, The Institute of Chartered Accountants of Scotland, available at: <http://icas.org.uk/default.aspx>
- Hazelton, J. and Haigh, M. (2010), "Incorporating sustainability into accounting curricula: lessons learnt from an action research study", *Accounting Education: An International Journal*, Vol. 19 Nos 1/2, pp. 159-178.
- Holdsworth, S., Wyborn, C., Bekessy, S. and Thomas, I. (2007), "Professional development for education for sustainability: how advanced are Australian universities?", *International*

- Journal of Sustainability in Higher Education, Vol. 9 No. 2, pp. 131-146.
- Hopwood, A.G. (1990), "Ambiguity, knowledge and territorial claims: some observations on the doctrine of substance over form – a review essay", *British Accounting Review*, Vol. 22 No. 1, pp. 79-88.
- Johnson, R.B. and Onwuegbuzie, A.J. (2004), "Mixed methods research: a research paradigm whose time has come", *Educational Researcher*, Vol. 33 No. 7, pp. 14-26.
- Lamberton, G. (2005), "Sustainability accounting: a brief history and conceptual framework", *Accounting Forum*, Vol. 29, pp. 7-26.
- Mathews, M.R. (1997), "Twenty-five years of social and environmental accounting education", *Accounting Education: An International Journal*, Vol. 15 No. 3, pp. 335-348.
- Mathews, M.R. (2001a), "Rejoinder: some thoughts on social and environmental accounting education", *Accounting Education*, Vol. 10 No. 4, pp. 379-382.
- Milne, M.J. (2001), "Commentary on: some thoughts on social and environmental accounting education", *Accounting Education*, Vol. 10 No. 4, pp. 369-374.
- Robinson, J. (2004), "Squaring the circle? Some thoughts on the idea of sustainable development", *Ecological Economics*, Vol. 48 No. 4, pp. 369-384.
- Rohweder, L. and Virtanen, A. (2009), "Developing the model on the learning for sustainable development in higher education", *Journal of Teacher Education for Sustainability*, Vol. 11 No. 1, pp. 31-42.
- Scott, G., Tillbury, D., Sharp, L. and Deane, E. (2012), *Turnaround Leadership for Sustainability in Higher Education*, Australian Government, OLT, Sydney.
- Segovia, V.M. and Galang, A.P. (2002), "Sustainable development in higher education in the Philippines: the case of Miriam College", *International Journal of Sustainability in Higher Education*, Vol. 3 No. 3, pp. 288-296.
- Smith, P.A.C. and Sharicz, C. (2011), "The shift needed for sustainability", *The Learning Organisation*, Vol. 18 No. 1, pp. 73-86.
- Spicer, A., Barthelmeh, M., Montgomery, R. and Spellerberg, I. (2011), "Education for sustainability at Lincoln University, New Zealand", *Land Environment and People Research Report No. 25*, July, available at: www.lincoln.ac.nz/
- Stewart, M. (2010), "Transforming higher education: a practical plan for integrating sustainability education into the student experience", *Journal of Sustainability Education*, Vol. 1, available at: www.jsedimensions.org/wordpress/
- Stubbs, W. and Cocklin, C. (2008), "Conceptualizing a 'sustainability business model'", *Organisation & Environment*, Vol. 21 No. 2, pp. 103-127.
- Thomas, I. (2004), "Sustainability in tertiary curricula: what is stopping it happening?", *International Journal of Sustainability in Higher Education*, Vol. 5 No. 1, pp. 33-47.
- Tillbury, D. and Cooke, K. (2005), *A National Review of Environmental Education and Its Contribution to Sustainability in Australia: Frameworks for Sustainability*, Australian Government Department of the Environment and Heritage and Australian Research Institute in Education for Sustainability, Canberra.
- WECD (1987), *Our Common Future*, World Commission on Environment and Development, Oxford University Press, Oxford.