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'Think of the future': managing educational change from students' perspectives of an undergraduate sustainable business programme

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Abstract

This paper explores how partnership with students can help sustainability educators with refining the living theory of their practice and improving the implementation of this practice in real world contexts. It draws from the case study of an undergraduate module within a UK Higher Education Institution committed to the Principles for Responsible Management Education (PRME) and that has sought to embody a shift towards more active, student-centred and problem-based pedagogical approaches. The module leaders aimed to draw out a more nuanced appreciation of the knowledge, skills, values, and attributes necessary for business and management graduates to contribute to more sustainable futures. We argue that whilst attempts to reform higher education in this direction are on the rise worldwide, there remains a relative lack of research into the students' perspectives of these Education for Sustainable Development initiatives. Drawing from the applied research work of Swanson and Chermack (2013) and Kim-Eng Lee and Mun Ling (2013), it is argued that robust strategies for listening to students provide a vital praxis lens through which the intended, enacted and lived curriculum can be refined and brought closer together by business school educators.

Keywords: sustainability, PRME, undergraduate, pedagogy, student voice

1. Introduction

It is widely acknowledged that today's business and management graduates need a form of education that helps them to realise their potential to make a positive contribution to the three pillars of sustainable development: social wellbeing, economic stability, and ecological integrity (Hall *et al.*, 2010; Baumann-Pauly *et al.*, 2013). The Principles of Responsible

Management Education (PRME) is the first large scale global reform initiative in pursuit of realising this sustainability mandate within Business Education (Forray and Leigh, 2012). Established in 2007 and coordinated by the United Nations, PRME provides six guiding principles to encourage business schools and universities to recognize their role as drivers of sustainable change and to adapt their curriculum, pedagogy and institutional strategies (www.prme.org). This directly impacts upon business and management educators, who by implication have a responsibility to incorporate sustainability into their practice and encourage the business mind-set shift towards more sustainable and ethical practices (Akrivou & Bradbury-Huang, 2015; Wyness *et al.*, 2015; Palthe, 2013).

In this paper, we focus upon the pedagogical challenge that is posed by PRME Principle 3 in its call to create educational frameworks, materials, processes and environments that enable effective learning experiences for responsible leadership (www.prme.org). Drawing from the framework of theory building in applied disciplines developed by Swanson and Chermack (2013) we share the findings from an implementation research project with students and academics in the Plymouth Business School (PBS) and the Centre for Sustainable Futures (CSF) at Plymouth University, in south-west England. This collaborative research project explores the process of refining the theoretical framing of effective practice in the light of student experience of its application within an innovative module in sustainable business. In so doing it presents the idea that students themselves can serve as vital catalysts for educational change and improvement.

2 Conceptualising Education for Sustainable Development within Business School Education

Closer attention is now being paid to how innovations in teaching curricula and pedagogies can engender ‘future-facing’ graduates with attributes to meet 21st century challenges (UNECE 2012, Cotton and Winter, 2010; Barrie, 2004; 2007; Oliver, 2013). Arguably, all graduates require critical and creative competencies, which promote resilience and innovation in the face of the manifold and global threats to well-being in both human and environmental terms (Sterling *et al.*, 2017; United Nations, 2013).

With specific reference to business and management education, PRME has played a vital role in the growing recognition of the need for future business leaders who are responsible. This requires an awareness of sustainability issues and solutions and, optimally, a strong

understanding of the challenges and rewards (financial and otherwise) of running businesses that have sustainable development at their heart (Prandi *et al.*, 2015). The extent of this challenge has most recently been outlined by the UN's seventeen Sustainable Development Goals (UN 2015). Future business leaders require a broad range of competencies and attributes to effectively contribute to society's transformation towards these goals through envisioning and realising more sustainable business practices.

As a direct result of the PRME initiative there is a growing body of practice, research and literature about the worldwide educational reform such a responsible business leaders mandate requires (Sunley and Leigh, 2016, Doh and Tashman, 2012). For example, 'The Inspirational Guide for the Implementation of PRME: placing sustainability at the heart of management education' features 63 case studies from 47 PRME signatory schools across 25 countries (Escudero *et al.*, 2012). It reveals through real world examples the extent and range of responses across each of the 6 principles. Similarly, a UK and Ireland edition highlights a spectrum of responses with a trajectory towards more integrated and embedded pedagogical approaches (Murray *et al.*, 2015).

Of particular interest to this paper are the implications of PRME Principle 3. This principle helps to support wholesale cultural, pedagogical, and epistemological shifts in programme provision. Importantly, this frames the challenge as not only being about introducing, increasing, and maintaining the presence of sustainability *content* within business and management education but also about shifting towards, more active, applied and student-centred *pedagogies* that foster skilled graduates with a strong responsibility value-set (Sunley and Leigh 2016). In this way PRME is encouraging educators to consider applied learning theories such as Kolb's learning cycle with its recognition of the importance of pedagogies that enable active experimentation through for example project-based learning and service learning opportunities (Forray et al 2016). PRME compels business education to move beyond the narrow, but more common, focus on the environmental, legal, and ethical concerns of organisations (Starik *et al.*, 2010), towards encompassing a more nuanced appreciation of the graduate skills, values, and attributes necessary to facilitate the shift towards a more sustainable and ethically responsible economy.

3. Operationalising ESD within a specific higher education setting

Sustainability can be built into two distinct arenas of learning in Higher Education – *designed* learning (through educational programmes) and *institutional* learning that is undertaken by those senior managers and policy-makers who are in the position to create the conditions necessary for change to take place (Sterling *et al.*, 2013: 7). Effective (and lasting) educational change in academics' practice through curriculum content and pedagogy is reliant on the adequate depth and breadth of institutional learning that has taken place to date. Since the turn of the century, Plymouth University has undergone significant institutional learning, with the commensurate introduction of an integrated sustainability strategy providing a clear institutional steer.

In 2011, Plymouth Business School (PBS) began a systemic approach to introducing sustainability into its business education. A small interest group of staff launched numerous initiatives, including the creation of a non-credit bearing Certificate in Sustainable Business. The popularity of this course with business education students, coupled with increased ESD staff capacity through recruitment and specialised staff development, enabled PBS to lead the University in signing up to PRME in 2013. With the establishment of a sustainability curriculum development group PBS then decided to create a new elective ESD undergraduate credit-bearing module and it is this innovation that forms the focus of this paper.

3.1 Developing a living theory of ESD in context

Informed by international ESD research supporting the need for transformative learning, and framed by an institutional strategy for implementing ESD through integrated and systemic approaches, a group of educators within PBS conceptualized a living theoretical framing of a desired shift in practice. Within their localised context, they identified the need to move away from a traditional teacher focused disciplinary configured model of higher education towards a more student centred multi-disciplinary model.

Figure 1 represents the traditional model of education that engagement with PRME, and the field of ESD in general, encouraged a move away from within PBS.

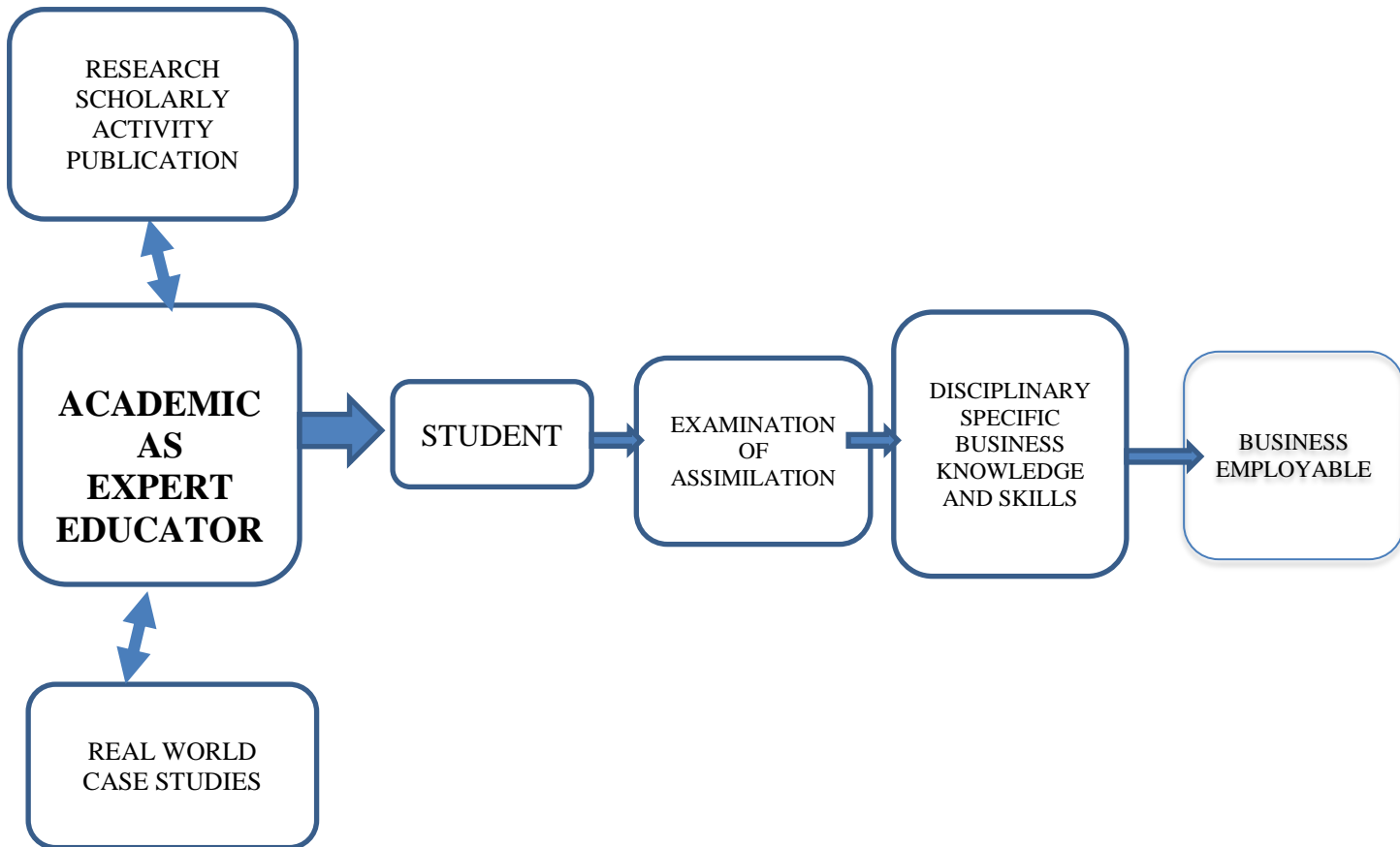


Figure 1 The traditional academic centred and disciplinary bound model of education

In this paradigm of education, the focus is on the academic and their teaching; relying on their ability to effectively communicate and transfer on to the student the disciplinary expertise they have acquired through research, scholarly activity and publication. This discipline specific knowledge can then be applied by the student upon graduate employment and supplemented with transferable skills development within the workplace. It is a model that supports the notion of a business education academic delivering their module largely in isolation and within the confines of the university campus resulting in the dominance of learning spaces such as lecture halls and tutorial rooms.

In contrast, Figure 2 reveals the aspirational paradigm of a more holistic approach. In this, the focus is more upon the student and their learning, with the student viewed as being at the centre of a diverse knowledge system as co-creators of their education. They still engage with the expertise of academics but this is more through a collaborative process with the team

teaching of multi-disciplinary modules that are problem based and competency development focused.

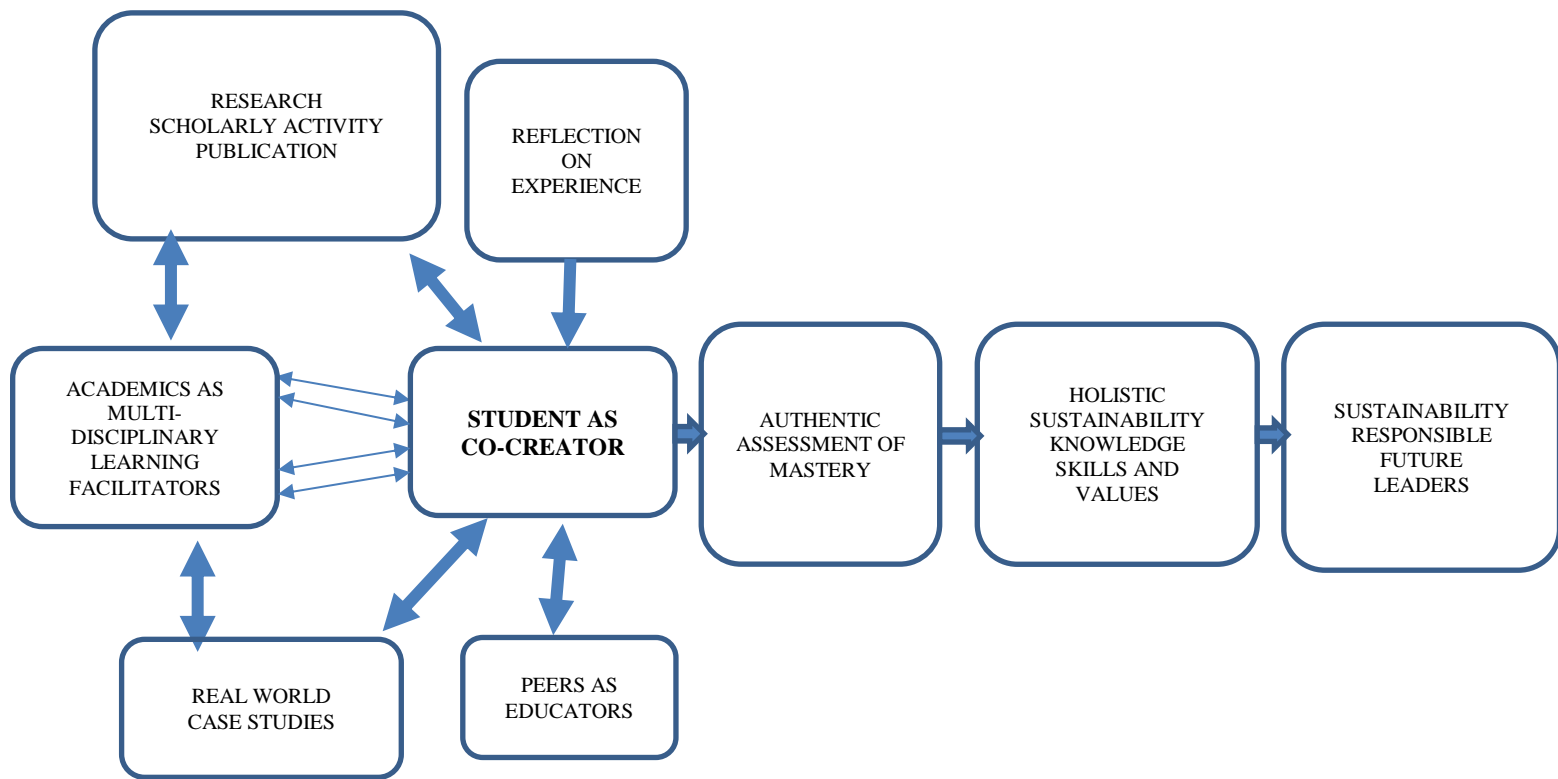


Figure 2 The holistic student centred and multi-disciplinary model of ESD

Students learn from a much broader range of learning spaces within and beyond the campus that enable deliberation and dialogue with peers and direct engagement with real world case studies of responsible leadership in practice. They learn from their own scholarly and project based learning activity where authentic assessment methods mean greater levels of exhibition and public engagement with their work. Emphasis is also placed on the educational value of students being given the space to learn from reflection on their own experiences as well as learning to be reflexive about the sources of and assumptions behind their own perspectives and the contested nature of their proposed business solutions.

So, the vision of apt education is shifted from the delivery of accepted wisdom and established theory to a model in which the students have a much more active and participatory role as co-creators of their responsible leadership learning. They are invited to develop, test and refine their own creative solutions to real world business challenges such as

how to create sustainable operations that deliver shareholder value and still meet the ecological and social justice demands of looking after the planet.

3.2 Putting this living educational theory into practice

Seeking to enact this education theory, a team of PBS staff devised a new undergraduate module entitled ‘Shaping the Future: Creating Sustainable Organisations’. This optional module was open to all second-year business school students. It had a broad aim to develop students’ ability to ‘assess how organisations can adapt, innovate and thrive in response to the macro social, economic and environmental forces impacting society and organisations’ (Module Handbook, 2013). The module was prefaced with a recognition of the strength of multiple perspectives towards sustainability as a valued mechanism for engaging students with the complexity and contested nature of business world solutions.

This module deliberately pursued a multi-disciplinary approach (see Table 1 for a more detailed module outline). It was structured to introduce students to a range of theoretical perspectives on creating and maintaining sustainable organisations through a series of interconnected disciplinary lenses, including accounting and finance, economics, marketing, business management, organisational development, and entrepreneurship. The module offered a deliberative and active pedagogy to promote discussion and dialogue, with each teacher delivering a block of three sessions with opportunity for student discussion, world cafés, problem-based learning, collaborative group work, and independent study. The module was delivered for the first time between October 2013 and May 2014 with a cohort of fifty students.

TABLE 1
Module outline (adapted from the Module Handbook)

Week 1	Introduction to the module and overview of the Circular Economy
Weeks 2 - 4	The Triple Bottom Line and Sustainable Operations
Weeks 5 - 7	Sustainable Marketing
Weeks 8 - 10	Business and the Environment: Maximisation of profits and sustainability
Week 11	Review of the term
Week 12	First summative assessment: group poster presentation
Week 16	Introduction to term 2
Week 17	Developing the Circular Economy
Weeks 18 - 20	Sustainable Entrepreneurship

Weeks 21 - 23	Sustainable People Management and Leadership
Weeks 24 - 26	The business of the future; what it means to be a sustainable business
Week 27	A review of the module by both staff and students Second summative assessment: written assignment

This module represented the operationalization of a paradigm shift that is supported by ever increasing collections of research, practice exemplification and policy; both from PRME and ESD in general (Escudero *et al.*, 2012; Tilbury, 2011; QAA, 2014). The publication ‘Rethinking education – towards a global common good’ by UNESCO and its affirmation of a humanist, inclusive and civically engaged educational approach is just one recent and influential example at an international level (UNESCO 2015). But a cautionary point from the PRME literature is that this multi-disciplinary, place based approach requires new structures and therefore significant institutional learning and cultural reform resulting in an innovation running the risk of being beset with challenge and constraint (Doh and Tashman 2012, Solitander et al 2012). Hence the importance of applied research strategies that enable a monitoring and examination of how theory is being embodied in practice and where future refinements are possible.

4. Testing application through an applied research collaboration

In its first year of implementation, the module team was keen to test and monitor how this new module worked in practice through a qualitative research approach. This was achieved through support from two of this paper’s authors who work in the Centre for Sustainable Futures (CSF), a central academic unit that plays an institutional role in inspiring and implementing ESD innovation. In pursuit of an evidence base for ongoing educational change in terms of curriculum, pedagogy and staff development, CSF conducts pedagogical research into new sustainability-related modules. Within this support work CSF has a particular interest in capturing students’ experiences to inform sustainability education theory and future practice improvement strategies.

This approach seeks to not only explore the content and pedagogical response of *staff* to the sustainability education agenda, but to focus on the *students’* perspectives of an innovation in practice. Monitoring an educational innovation in this way firmly situates students as educational partners rather than consumers or vessels to be filled with sustainability

‘knowledge’ (Singh, 2002), whilst at the same time remaining mindful of the limitations of student voice, as Cook-Sather (2002: 10) points out:

[S]tudents do not always have helpful things to say. Sometimes they have nothing to say, sometimes they say things they have not thought through, and they always speak from complex positions.

Focusing on the student experience of and perspectives on sustainability educational innovations within Business Schools remains a relative gap in the research. It is this specific area that in the footsteps of Erskine and Johnson (2012) and Persons (2012) amongst others, this paper seeks to make a contribution towards.

With students’ experiences as the focal point, the module staff and the CSF team partnered to conduct a pedagogical research project, with the following objectives: to capture the students’ experiences of both the content *and* the pedagogical approaches of the module, to feed these back into a reflective cycle with the PBS module teaching team, and to consider how replicable this process could be for bringing about change in other disciplines and programmes. It was hoped that the students’ experiences of the module’s first iteration would contribute to a refinement of the theoretical model underpinning its educational approach and in turn feed into practical improvements to the implementation of the module with subsequent cohorts.

4.1 Research methodology

Our research approach aimed to be a form of ‘implementation research’ where we investigated ‘the extent to which an innovation is enacted according to its intended model’ (Century and Cassata 2016:171). This is very much in alignment with Swanson and Chermack’s (2013) ‘apply phase’ of theory building where a deeper understanding is generated through a researching of the theory in action. A central thrust of the research strategy has been to integrate knowledge and action, bringing together both scholarship and the reflexive action of praxis (McNiff 2003, Reason & Bradbury 2001). Hence, we chose to situate our implementation research objectives within a broad action research strategy. As described by Carr and Kemmis (1986: 162), action research is:

[a] form of self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own practices, their understanding of these practices, and the situations in which the practices are carried out.

Our action research strategy adopted a collaborative and participatory approach with students and staff working in partnership, underpinned by a strong empowerment ethic that is congruent with the ESD paradigm (Sterling *et al*, 2016). Action research has been used in other business school curriculum change scenarios to good effect, such as Benn & Dunphy's (2009) use of action research to integrate sustainability into MBA programmes in an Australian university. In particular, they considered this approach useful for organisational change work with faculty members 'in which they develop a sense of ownership of the outcomes' (279).

Action research is orientated towards providing 'locally specific' knowledge, with the primary concern of creating what can be referred to as 'living knowledge', knowledge which is particularly valid within a given context and for specific practitioners (Marja-Liisa Swantz, cited in Reason and Bradbury, 2001). A criticism of action research and, therefore, our own study is its poor capacity to produce generalisable findings (Robson, 1993; Stringer, 1999).

Within a broad action research strategy, the desire to capture students' experiences of the module led to an interest in '*jugyou kenkyuu*', a Lesson Study methodology that originated in Japan and China. This cyclical process of inquiry seeks to provide educators with new eyes through which to see their own practice using student observation and student interviews to gain deeper perspectives on the nature of their students' learning and the inter-relationships between this learning and their teaching (Dudley, 2014; Cajkler and Wood, 2015). This student-centred process of reflection on practice provides the lens through which the intended, enacted and lived curriculum can be refined and brought closer together (Kim-Eng Lee and Mun Ling 2013).

From these theoretical positions, we developed a qualitative study with multiple research techniques, recognising that the lifeworlds and experiences of students on the PBS module cannot be fully captured, but that claims to rigour and validity can be made through an

attempt to establish knowledge by integrating and overlapping different techniques. The range of data collection methods utilised, as outlined in Table 2, are not without their limitations and our pragmatic implementation not without faults, something to which we return towards the end of this paper.

TABLE 2
Summary of data collection methods

Data Collection Methods Completed (52 students; 7 teaching staff)
6 x one-to-one semi-structured interviews with module staff members
12 x two hour lesson observations
2 student focus groups (10 participants)
Module plenary evaluation workshop (11 participants)
4 one-to-one semi-structured interviews with students

Careful attention was given to the ethical considerations of the research project; drawing on guidelines from the British Educational Research Association (2011) to inform procedures and ensuring that both staff and students participated within the research as informed and consensual participants. Quotations within this paper are anonymised.

4.2 Research findings and analysis

Studies have shown that staff perceptions of the teaching and learning experience can differ considerably from those of students (for example, Trigwell, *et al*, 1999; MacLellan, 2001). In this research, it was important to ensure that the chosen methods allowed for triangulation between the staff and student perceptions, and the observed behaviours, of the new module. Hence, observations of the students were conducted within twelve teaching sessions (each two hours long) and module lecturers were invited to reflect on their practice in a one-to-one interview. Together these served to capture emergent areas of concern that we used to partly frame our research conversations with the students. These key areas merely served as entry points, and enabled us to see if the students' perspectives were in alignment with or differed from those of the staff.

Interviews with staff, often held soon after their block of teaching sessions, yielded four main questions of concern:

Were the conventional physical teaching spaces conducive or not to the module's active learning activities?

Were the students lived experiences of the module's multi-disciplinary approach cohesive?
Was there adequate support for students to access the new ways of learning in the early stages of the programme?

Why was there such a significant decline in attendance towards the end of the module?

We shared the staff concerns with the students in the focus groups, module evaluation workshop, and one-to-one interviews, but encouraged the students to steer the conversation towards their own areas of interest and concern. The students' observations of the module were not always in alignment with those of the staff. For instance, the nature of the physical teaching spaces was not an aspect of the module with which students were overly concerned. Whilst they recognized most of the teaching rooms with a rowed seating layout were not conducive to active and collaborative learning activities, there was a degree of resigned acceptance towards and resourceful adaptation of the allocated spaces. Instead, the analysis of the data gathered from listening to the students revealed perspectives that can usefully be brought together in two major themes, explored below.

4.2.1 Multi-disciplinarity, cohesion, and the dialogic nature of teaching

Within this theme, there are four subthemes – patterns of engagement, constructive alignment of assessment tasks, attendance levels and note-taking.

Students across each data collection activity spoke positively about the deliberative and active pedagogy of the course, valuing the opportunity to learn from peers and to think for themselves and reflecting on how this changed their patterns of engagement:

I definitely have grown in confidence within this group. Like, my other modules I'll just sit there with my head down. Like, in tutorials I won't say anything. But in the Sustainability lectures I feel like I can say my view, because I feel like I've learnt a lot in it. Other ones I'm like, not that confident in what I know. That's why I won't speak up. (Student 6)

To align the module's summative assessment with its participatory pedagogy, the students were assigned a group poster presentation, followed by an individual report based on the sustainability strategy and credentials of a company of their choice. This assessment regime was designed to be as open as possible. The group poster presentation provided scope for the

students to choose their subject based on broad content guidelines. The aim was to also provide an authentic assessment setting with the posters presented in a public forum on campus for a variety of people to view. The marking entailed a weighting of 80% for the academic assessor and 20% peer assessment using the same marking criteria. As a point of interest, in the first year 80% of the peer assessors' marks were within 5% of the corresponding academic's marks. For the second, individual, assignment, the students chose their own topic *and* method of presentation from several options. These options included: a 3000-word written essay or case study; a consultancy report; a 15 minute video or podcast supported by written material; or a storyboard with a minimum of 6 x A2 boards.

The coursework focus of this new module contrasted directly with the more traditional mode of business school examinations at the end of the year and, in the interviews, three of the four students made explicit mention of the fact that they performed academically better on this module, or at least in one of its two assessment elements, compared with other modules:

[L]ooking at the poster project, I think, I mean I'm not 100% sure but I think that was the best grade I received all year everyone had to come together and work together and I think it was a really good way...I think that was probably why my grade was so good because then when we came round and we had to talk about the poster to everyone, I felt I had so much in depth knowledge. And it wasn't even like I'd had to like revise it I just knew it from doing the work. (Student 1)

The findings from this small sample prompted further investigation into the cohort's final grades for both assessment tasks. The module staff with knowledge of students' grades across the various business school degree schemes, judged that the pattern of grade distribution for the written assignment was what would be expected rather than exceptional in comparison. Reflection on this, therefore, raises a concern over the representativeness of the students that volunteered to participate in this research project; an issue to which we shall return in the conclusion. However, regardless of whether students performed to a higher level or not in this module, we would argue that within these modes of module assessment, there was an added value of observable development in the mastery of collaborative problem solving, discursive and deliberative skills through the group presentation task, and critical thinking through individual research of business sustainability. Such skills are increasingly identified as being associated with key competency targets in Sustainability Education

(Sterling *et al*, 2017).

All four students in the one-to-one interviews offered perspectives on why attendance had noticeably declined during the second term of teaching:

I think another part of it...is that it was kind of a tacit flexibility that you attended what was of interest to you and what was relevant to your assignment. (Evaluation session)

I think it might have been a bit to do with because we had that sort of personal freedom - there was – you needed to go to lectures – but if you didn't go to a lecture you weren't missing something that like was going to be in the exam so to speak, so you're not losing that like vital thing. (Evaluation session)

Students reveal that, whilst there are common issues with workload pressures approaching assignment deadlines, there was a clear problem with the lack of constructive alignment of the module assessment to the multi-disciplinary objectives. The second assessment piece (70% of the module grade), invited students to choose their specific area of focus at the beginning of the second term. This assignment did not need to be multi-disciplinary in nature and was chosen when only half of the fields of inquiry had been taught. The evidence suggested that this was unwittingly contributing to students' lower prioritisation of attending teaching sessions in the second term.

Finally, we observed that very little note-taking was happening during class and within both focus groups the students provided explanations for why this was the case. They partly attributed this to the module's Digital Learning Environment (DLE), where copies of session material and presentations were available to refer to at a later date. However, it was also the pedagogical approach of the module that facilitated this phenomenon. The module leader and members of the teaching team had been keen to include plentiful opportunity for discussion and deliberation on the topics raised. The students had noticed this dialogic style of the module and commented that their pattern of engagement had shifted in response:

People learn differently. Like me, I cannot be sitting down just jotting notes down when you are talking. So basically, I'm not even listening to what you're trying to

teach me. I'm concentrating on taking notes, forgetting that you are going to download the material. It's not that I need my notes to revise for my exams, but I'd rather learn from what you are teaching us. (Student 5)

You don't necessarily realise that you're learning at the time, but then when you go away from it, you've got what you've subconsciously absorbed from the session. It's actually quite amazing compared to what I would have had if I've had been taking notes. Because it would have been on the notes, not in my brain. (Student 3)

Despite these views, and the students' performance in the assessment tasks, this absence of notes from teaching sessions still contradicts effective study techniques as outlined by Levin (cited in Plymouth University 2011), who makes the important distinction between *note-taking* and *note-making*. Levin views the latter as a type of active learning technique that involves students being selective and summarising key points of learning, rather than simply noting verbatim what a person has just said or shown on a PowerPoint slide. The students' voices suggest a future improvement to this module's delivery would be staff at its beginning expanding upon notions of active learning and introducing how *note-making* approaches could enhance learning. It also requires changes to the module rhythm to provide more regular contemplative pauses for students to reflect within the dialogic aspects of the teaching sessions.

4.2.2 The potential for transformative learning – it matters how we are taught, by whom and where

UNESCO recognises that one of five fundamental types of ESD learning is 'learning to transform oneself and society' (UNESCO 2012). This highlights that lifestyle-induced threats to environmental and social justice require business students to be supported in transformative ways of thinking and acting. Transformative learning approaches have stemmed from the pioneering work of adult education scholars such as Jack Mezirow (2000), and have strong links to the critical literacy work of Paulo Freire (1995, 1998). It is a learning process that engages students in not simply maintaining the societal status quo, or even improving the rationality of current practices, but fundamentally reconsidering core values, assumptions and attitudes and reflexively exploring new, more sustainable ways of perceiving and acting (Sterling, 2011). Through these transformative processes, ESD is seen

to encourage rigorous, autonomous thinking and to empower business students to make a vital contribution towards responsible leadership based on justice, equality, integrity, and respect. This is clearly an ambitious objective and we would argue that claims to the transformative impact of ESD are made too often with little supporting evidence. Three of the four students interviewed at the end of the module, however, pointed towards the module being a life-changing experience, with one student in particular talking of having little interest in sustainability issues when he started the course but now finding ways to weave this new-found concern into other modules he was studying, as well as prompting lifestyle changes:

For me initially – I won't lie – the first thing that attracted me to the course was that it was 100% course working and I thought, "I'm not good at exams and it's the perfect thing." I always had a little bit of inkling for sustainability but didn't really know much about it..... I feel that now I have so much more knowledge. Things that I'd heard about but didn't really know what they were, like circular economy, all that kind of stuff, I wouldn't have had a clue what that was before. Now I feel that I've got such a big knowledge and so many things I can talk about. (Student 3)

It has changed me in the sense that I am now more aware of where difference can be made in business. I now feel more prepared to go into business with more of an idea of how to tackle issues. It's something I want to do. (Student 1)

Almost makes you feel contempt for current practices and norms and for the allowance for this wasteful practice to continue and progress so far. It has encouraged the pool of thought that it is through collective action rather than dependence on businesses/Government/ Organisations to change and that a cultural shift in regards to sustainability is imperative. (Student 2)

This transformative impact of the module on students who participated in elements of the research provided a common suggestion for future improvement at a programme level. Students spoke of a dearth of progression opportunities to continue their sustainability education within the third year and beyond into postgraduate study at PBS, asking for a more complete sustainability pathway to be provided throughout business degree programmes.

The contested nature of sustainability, and the multiple approaches to its scholarship, predicts a diverse response on the behalf of teaching staff tasked with conveying the relevance of sustainability to contemporary business and management. With ethical sustainability issues capable of eliciting emotional responses from students, we believe that the way in which lecturers teach their subjects matters. Besides adhering to good teaching practice that foregrounds passion and commitment to their subject, we agree with the view that lecturers within business schools have a duty to convey the innovative potential of sustainability as a business opportunity, rather than transmitting the need for a dutiful response and telling students how to behave (Stewart and Gapp 2013). Despite the multi-disciplinary nature of the module, with a team of eight teaching staff, one student highlighted the narrative arc shared by the lecturers of each module session:

[...] every scholar has different interests in sustainability. But each one of them has tried to say, think of the future. (Student 1)

But at the same time a clear point of improvement that arose from our discussions with the students was their identification of their need for more support in accessing this new multi-disciplinary, collaborative and issue-based way of learning. Students presented as needing help to see the links between the different disciplinary blocks of teaching – to tie together the different threads into a single and cohesive module chord. This prompted the idea of a need for a new more explicit ‘moderator’ role to be played by a staff member where the interconnections and links across the disciplinary themes are narrated and explained more explicitly.

In addition, within the first focus group, and within the end of module feedback workshop, students recounted a period of adjustment in the first term to the pedagogical approach of this module and felt much more could be done to speed this process of familiarisation up. Therefore, whilst the quotes below speak of their gradual appreciation of the deliberative opportunity to learn *with and from* each other, this demanded a level of trust amongst the class-based relationships:

Yes, I have enjoyed this module the most as it has allowed me to explore different methods of learning and produce questions and ideas that I have never ever thought

about before. I believe this is down to the group discussions as I have learnt a lot from my class's opinions and views. (Student 5)

Way of engaging everyone in lectures and I always refer back to that one lecture when we had the debate, like and just the way he ran that by not talking and letting us carry on and I've just never been in a lecture like that before..... I think that's going to be like a lecture that you'll always remember throughout my life. (Student 1)

Besides an appreciation of the pedagogical approaches that elicited critical thinking, active discussion, and problem-based learning, perhaps most significantly in terms of programme design, the students identified the need for 'real world' learning for business sustainability and, by implication, the requirement that more of their learning could have taken place in place based learning opportunities with local sustainability engaged businesses.

Students across the study repeatedly spoke of an appreciation of the active learning doorway that the module had opened but, in the end of module workshop, eight of the eleven participating students also commented that they wished this had been opened more widely. When prompted to consider one thing on the module that they would change, the students' chief perspective was of wanting more applied learning opportunities beyond the teaching room tackling real sustainability issues, perhaps in local organisations or within the university itself (as Rusinko & Sama, 2009 suggest). The students voiced an interest in being able to make a difference and bring about change locally within the course through direct contact with businesses and social entrepreneurs. This, again, represents a common experiential approach to 'active learning' (as defined for example by Kolb, 1984; Kember, 2000; Revans, 2011) and highlights another area of possible future change for the module through greater integration of experiential approaches such as service learning (Swamy and Keegan, 2016). Fundamentally, we propose that the success of a module rests on how far students have felt empowered and equipped to approach business from a different, more sustainable, perspective:

[...] if I went to start my own business, I most definitely would look at something as sustainable as possible. I think you'd have a competitive edge there because it's just so different from what everyone else is doing. (Student 1)

4.3 A refining fire for both educational theory and practice

Our aim for this small-scale pedagogical research project has been to gain a deeper understanding from the students' perspectives and then apply this to the refinement of the module's guiding theory and to the improvement of future practice. As a qualitative study it enabled the module staff team to openly and reflexively consider how far they offered students a multidisciplinary, deliberative, and active learning experience. It provided a valuable insight into students' perspectives, albeit a limited one, and encouraged module staff to reflect upon where issues and problems existed and to identify where future changes could possibly be made.

Through a staff team workshop, where the CSF based researchers presented a summary of the students' perspectives and the elicited ideas for future improvement, the module staff collaboratively considered where changes to the module were possible. This process has continued in the light of other module and programme review processes each year and with an awareness of institutional constraints and points of resistance within the educational change process.

Extending learning into real world spaces and a more constructive alignment of assessment tasks to multi-disciplinary objectives were identified as key to improving student engagement. Staff empathised with the students' perspectives on problems arising from the individual assignment being very flexible with students having nearly total freedom of topic and medium. This was generating two problems: first, the difficulties of consistency in marking across a wide range of media e.g. equivalent marking of a video, business report, personal blog, and PowerPoint presentation. The second was that having chosen their topic many of the students disengaged from the lecture schedule as they found their own self-directed study more rewarding.

Both these issues were addressed in the following year 2014-2015 with a revised assessment scheme in two main ways. The first was to revise guidance provided to students for the assessment task of preparing a poster that takes an in-depth look at the sustainable activities of a company, organisation or country. The feedback from the students confirmed this group work is enjoyed and valued, with the flexibility to choose their own topic helping to ensure a high level of engagement. Additionally, the marking regime included a peer assessed contribution (20% of the assessment mark) involving discussion and debate which adds to the

dialogic engagement and development of deliberative competencies required for engaging in the complexity and manifold nature of sustainability consideration within business. The second revised assessment technique has been to set an assignment that asks students to discuss the content of all the module teaching in the context of a local company; this was branded their Journey of Discovery. This again offers students the maximum flexibility in choosing their subject matter. It allows motivated students to reach out to local businesses and consider how what they are learning in theory can be applied in a real-world situation.

A further change to the module delivery was instigated, partly because of the University moving to a two-semester teaching year in 2015-16 enabling this module to be delivered in a much shorter and more intensive time period of twelve weeks. To help students focus on the content and to encourage them to work regularly on their Journey of Discovery, teaching was broken into short blocks. Each topic (marketing, operations, accountancy, human resources and entrepreneurship) was taught across three days in a week with two-hour sessions on each day. The week following each topic was left clear to enable the students to reflect on their learning and apply it to the local company they had chosen, further extending the opportunities for place-based learning in the community.

Responding to other insights from the research has been far more difficult, due to institutional constraints. Staff have certainly recognised the value of the students' idea for a module 'moderator' working with the students across the whole module to make the links between the various topics and multi-disciplinary inputs. Timetabling restrictions and workload models have severely limited the module leader's ability to do this. In 2014-15 the longitudinal term format where learning sessions were scheduled weekly enabled the module leader to 'top and tail' each term with sessions that linked all the taught topics together. This helped students collectively to focus their thoughts and analyse the subject of their work through group discussion and personal reflection. Since the 2015-16 timetable restructure this moderator input was prevented and provided partially through one-to-one formative feedback on draft work.

Subsequent reviews of this module since this first cycle of implementation research, particularly student feedback at the end of academic year 2015-16 regarding when the 'Journey of Discovery' writing was taking place (i.e. the end of term), have given rise to further refinement in the year 2016-17. Whilst the short, focused delivery of each topic was

retained as it was considered to be beneficial for students and staff, a drop-in session was added to the timetable in the weeks between topics. These sessions are run by the module leader acting as a personal tutor. She offers students guidance on their 'Journey' writing. The hope is that through encouraging engagement in the 'lay weeks' between topics the students will respond positively if they have a more continuous tutorial support and this is the next change that we will be monitoring the impact of.

Responding to students' interest in being given other learning opportunities to extend their study of sustainable business remains largely at the planning stage, highlighting that some educational change processes are slow to implement due to their institutional learning implications. The management team responsible for developing the module had always planned for it to be part of broader suite of modules starting with a very broad introduction to sustainable business in the first year. This has been achieved to an extent with a first-year module in 2014-15 integrating a Sustainable Literacy Test element and using an action research approach to monitor students' experiences of this learning opportunity. The plans hereafter were to develop more sustainability subject specific modules in the third year. Achieving this depended on additional resource to prepare and deliver the modules which has proved difficult to acquire to date. In addition, the planned development was to extend the subject into a Masters' qualification that focused on the practical application of the theories discussed and the experience of the first three years. Again, limited resources have so far precluded this step, although the staff team maintains this ambition and continues to target the development of a practice-based Masters as a priority.

This implementation research project has also enabled participating staff to reflect upon their own living theories of the required transition towards a more student centred and multi-disciplinary model of education. A refined framing educational theory with new key concepts and relationships identified, is shown in Figure 3.

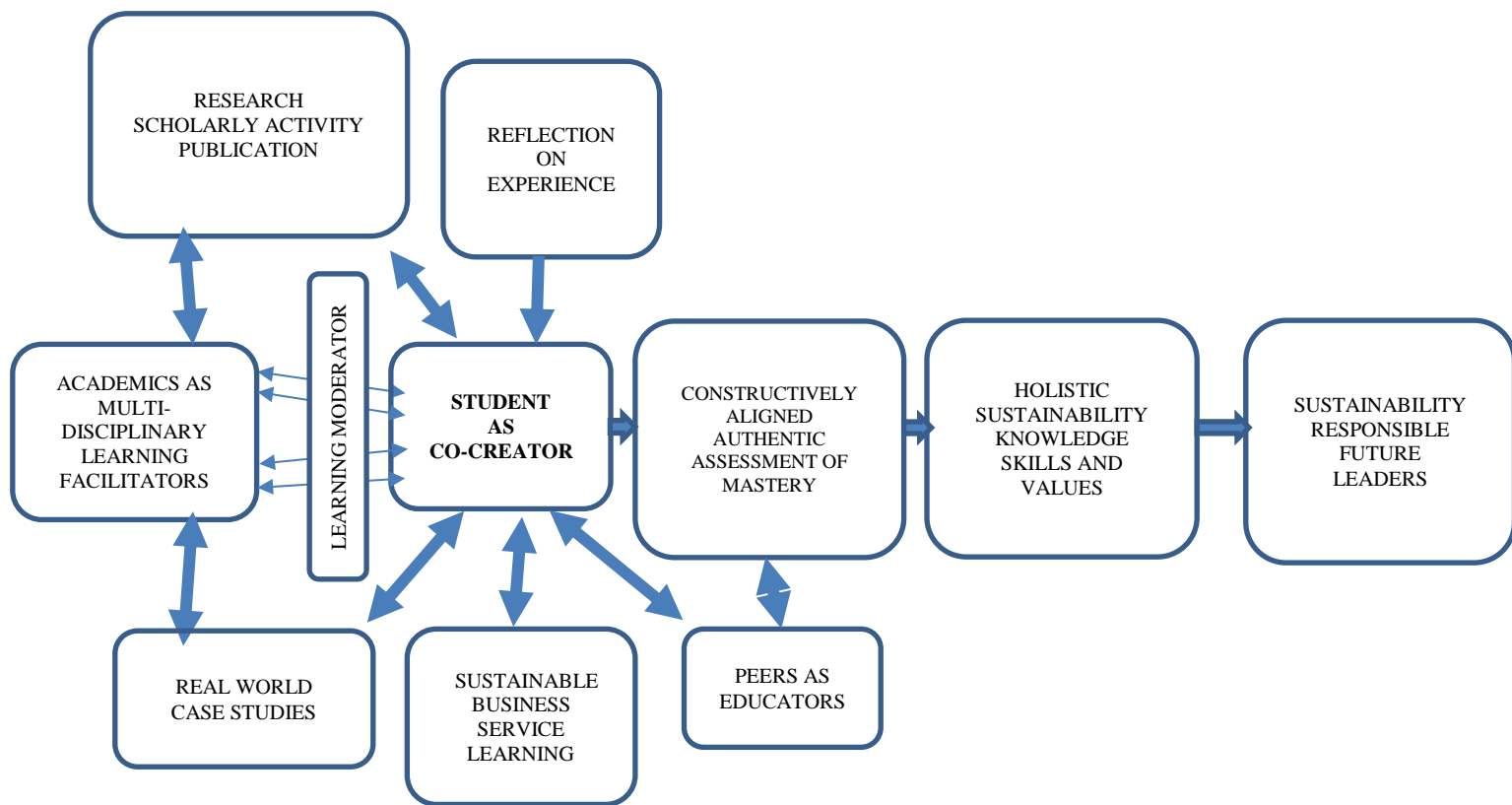


Figure 3 The holistic student centred and multi-disciplinary model of ESD (refined)

This student inspired refining of the ESD model recognises the vital role that a learning ‘moderator’ can play within a multi-disciplinary module. This is in terms of helping students to realise the links and interconnections between the different disciplinary inputs but also to access and adapt to the new teaching and learning approaches this form of education requires of them such as note making and participating in reflexive dialogue with peers. This model also gives greater recognition to the active and applied learning opportunities that the research project students presented as being so enthusiastic to increase access to. This theoretical framing supports greater resource and inclusion of experiential teaching methods such as service learning with local sustainable businesses, as advocated for by learning theories such as Kolb’s Experiential Learning Theory (Forray et al 2016). In so doing, students would more fully realise the learning potential of taking on the role of responsible leadership; partnering with business leaders, peers and academics in exploring real world sustainable solutions. Finally, this model gives greater recognition to the constructive alignment of assessment methods that effectively balance participatory and autonomous educational principles with multi-disciplinary learning objectives.

Overall, our small scaled exploration of students' perspectives has highlighted that such a student centred shift in the sustainability curriculum is welcomed as effective practice. An additional cautionary point from this research though is that this might not be true for *all* students. This means that the impact of this reform on academics and their adoption of a 'learning facilitator' role is bi-directional. Firstly, with the engaged students; the increased pleasure of working with students who are grappling with ethical issues and suggesting business solutions based on their original thinking. But secondly, in this student centred approach there is an added pressure on how to more effectively support the less-engaged students across multi-disciplinary and place based learning modules. Institutional constraints on individualized tutorial time and workload models that currently fail to recognise the role of a 'learning moderator' within applied and diverse business education modules means that there remains significant challenge in the intended, enacted and lived curriculum being brought more closely together for *all* students.

4.4 Implications for PRME going forwards

The UN Sustainable Development Goals provide a fresh mandate that captures the manifold extent of the societal transformation required. The challenge for business and management education to transform its practice in the light of this landscape is significant and PRME has been vital over the last decade in laying the foundations of what is required for a principled reform towards sustainability.

This small scaled implementation research project has been useful for providing case specific insight for future improvement in practice. We are mindful of the limitations of these findings being generalizable to other settings. But drawing from the approach to building theory in applied disciplines, as developed by Swanson and Chermack (2013), it is important to consider the usefulness of this study for colleagues in other case specific situations seeking to look ahead to what change is required over the next ten years of PRME?

We tentatively suggest that this study has a use in illuminating the holistic pedagogical shift in Higher Education that is still in the process of unfolding, rather than representing a destination already reached. It has highlighted the need for Business School educators to overcome institutional barriers and points of resistance in the pursuit of the move from a linear knowledge transmission based paradigm of higher education towards a more systems

based student centred paradigm. Whilst the student centred model presented in Figure 3 has been articulated with a specific local context in mind – the key concepts it highlights and the relationships between elements that it points towards we would argue provide a useful research informed stimuli for other PRME colleagues to consider and adapt.

We agree with Akrivou and Bradbury-Huang's (2015: 233) premise that '[...] business schools are the place in which an educational foundation for reorienting the economy for the benefit of society can and ought to happen.' To this end, the research underpinning this paper has purposefully positioned business students as pivotal in the re-envisioning of business schools into spaces of cultural change that value 'broader humanistic and naturalistic perspectives on economic, societal, and personal transformation, while transcending the economic (instrumentalizing) rationality of business' (*ibid*: 233). In so doing we wish to advocate for an applied implementation research methodology that explores how students might play roles as, what Akrivou and Bradbury-Huang term, 'integrated catalysts'. This requires that we step beyond the prevailing method of educational change that works almost exclusively with staff and, following Cook-Sather (2002) and Kim-Eng Lee and Mun Ling (2013), invite students to enter a dialogue with teaching staff to critically and creatively explore how to bring the intended, enacted and lived curriculum closer together.

Upon reflection, this research project undoubtedly has several limitations. Most significantly, it has only succeeded in capturing the perspectives of a limited number of students, which raises uncertainty about the generalisability of our findings as a representation of the entire student cohort. The voluntary extra-curricular nature of participating in this study was perhaps attractive and accessible to certain students; in particular, those students that were intrinsically motivated and with greater disposition towards sustainability in the curriculum. Thus, our study failed to capture the voices of students who were the more frequent absentees in the course sessions or who achieved lower grades. We hoped that the end of module workshop would capture these students' views but, by that point, patterns of non-attendance in the final weeks were established and not all students attended this data collection point. Hence, whilst this study has provided an important insight into the student experience of a sustainability module, it in no way captures the whole story. Implementation research approaches that seek to prioritise students' perspectives need to identify more inclusive mechanisms for capturing a broader range of

students' experiences such as through whole class observation methods during teaching sessions.

Despite these limitations, we hope that this paper has illuminated the potential for student input into curriculum development that goes beyond simple elicitation of their views through module evaluations or student satisfaction surveys. Instead it has pointed towards the potential of working with students to improve the module for subsequent years - in essence, to act as co-constructors of the curriculum. This is a lofty goal but one that the UN Sustainable Development Goals and PRME Principle 3 requires us to continue to pursue. Whilst business schools go about designing the curricula of the future, they must remain mindful of the fact that 'we do not know more than students living [in the 21st century] about what it means to be a student in the modern world and what it might mean to be an adult in the future' (Cook-Sather, 2002: 12).

5 Conclusion

In this paper, we have presented an implementation research led approach to improving sustainability education theory and practice within business and management teaching. This invited students into the heart of its data collection processes. Through doing so, we have attempted to identify key points of leverage for educational development. We can draw conclusions around two clear areas; firstly, the extent to which this study has contributed towards debates about PRME inspired educational change within business and management programmes, and secondly, what and how this study can contribute towards a notion of students as 'integrated catalysts' of that educational change (Akrivou and Bradbury-Huang, 2015).

Firstly, then, the students have given us valuable insight into potential areas of educational change, primarily within this module, but also, we hope within other business and management courses. They have highlighted the benefits of a pedagogy that utilises place-based learning, peer education, multi-disciplinary problem based learning and the role of academics as learning facilitators and moderators. Although this elective module represents another significant step in an evolving process of change in the PBS provision of business and management programmes, it still represents an optional module with little opportunity for students to build upon in subsequent pathways of study. This research project has therefore encouraged us to argue for the business school to continue to pursue a more deeply embedded

cultural change, recognising the importance and value of PRME and sustainability as being at the core of its business education service and its students' futures. Only then does PRME inspired innovation have the potential to become sustainable educational change that is secure and embedded.

This research supports others calls for a more integrated, multidisciplinary and student centred pedagogical approach to sustainability within business schools (Doh and Tashman, 2012; Starik *et al.*, 2010; Palthe, 2013; Wyness, *et al.*, 2015). Pursuit of this will inevitably entail negotiating the realities of business schools and remaining cognisant of how a lack of resources and staff capacity to drive transformation can present very practical reasons why change often doesn't happen, certainly not in the time-frame many of us would wish for. Wholesale change of business school practice, as advocated for by the PRME, is a resource-heavy option that is only likely to be adopted in the light of strategic ambition. We would argue that this change is too important to be left to the enthusiastic few and it is time for a new 'business as usual' where PRME informed practice is the norm. There are indications from the PRME case studies that many HEIs, like Plymouth University, are heading along what Starik, *et al* (2010:381) call a pathway of 'transformative threshold advancement of interest, expertise, and application in [sustainability] with, we hope, 'game-changing' sustainability effects.' We hope so too.

Secondly, we believe this implementation research project contributes towards the notion of students as 'integrated catalysts' of that educational change. Although it is the academic staff that have the ultimate responsibility to make changes within the business school curriculum, we believe that students can, and should be given the opportunity to, play a vital and co-constructed role in that process. Where might this model of students as agents of educational change lead us and how can we ensure that students become aware of their potential as catalysts? This research project hints that harnessing students' enthusiasm and unique perspectives can provide a fresh impetus to help faculty members understand their own practice more deeply and to imagine and enact new opportunities for sustainability learning within the business school curriculum that better fulfil the potential of the PRME global reform initiative.

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