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Implications of vertical policy integration for sustainable development implementation in higher education institutions

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ABSTRACT

The United Nations together with various national and local actors have acknowledged the importance of sustainable development. However, sustainable development implementation is not straightforward and requires contribution by different actors. Universities have a role in influencing and contributing towards sustainable development. Also, some universities have committed to support sustainable development implementation. One of the instruments to implement sustainable development are policy frameworks, which exist at international, national and institutional level. Vertical policy integration is crucial to support effective implementation of sustainable development. Analysing vertical policy integration could provide information to help improve sustainable development implementation. Therefore, the aim of this paper is to improve understanding of sustainable development implementation in higher education by undertaking a multilevel (international, nationally, organisational) analysis of policy frameworks. Results suggested that policy frameworks include policy issues such as collaboration, partnership, education, outreach, teaching and learning, staff development, curriculum review, research, campus operations and policy that can support sustainable development implementation. However, these policy issues are not consistently integrated at all levels of policy frameworks. Achieving consistency could enhance sustainable development implementation in higher education institutions.

1. Introduction

Progressing towards sustainable development is a key global challenge (Holden et al., 2016; United Nations, 2016). Sustainable development refers to a development model that seeks to consider holistically the society and the environment (WCED, 1987). Two main issues make sustainable development difficult to implement. Firstly, there are various interpretations of the concept (Bonnett, 1999, 2002; Haque, 2000; Stables and Scott, 1999). Secondly, it raises questions about the compatibility of continuous economic growth, as measured by the Gross Domestic Product, with social and environmental safeguards (Bosselmann, 2001; Victor and Jackson, 2015). Despite the difficulties in defining and implementing sustainable development, policy frameworks at national and international levels have widely adopted the term (Estes, 1993). Therefore, it is necessary to improve understanding of sustainable development implementation.

Universities have an important role in influencing progress towards sustainable development (Radinger-Peer and Pflitsch, 2017). Higher education institutions could contribute to sustainable development by integrating it into all areas of their activity i.e. estate management, teaching and learning, research and outreach activities (Lozano et al., 2013). Indeed, higher education institutions around the world have committed to integrate sustainable development and education for sustainable development in their activities (Lozano et al., 2013). Education for sustainable development helps learners to take informed decisions and act towards sustainable development (United Nations, 2014). Universities create the professionals and decision makers of the future. Therefore, gaining insights into international and national activity around sustainable development in higher education can help understand universities' contribution to it.

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Policy frameworks are constructs that provide direction for activity at international, national and organisational level (Newig and Koontz, 2014). The development of policy is not straightforward (Schmidt, 2008). Neither is the implementation of policy frameworks (Schmidt, 2008) which refers to the enactment of the information provided in them (Newig and Koontz, 2014). The complexity of contexts, values, interests shape both policy development and implementation (Schmidt, 2008). However, appropriate policy frameworks could support sustainable development implementation (Newig and Koontz, 2014). Furthermore progressing towards sustainable development could be supported by vertical policy integration (United Nations, 2002). Policy integration refers to coherence between policy issues in different policies (Rode, 2019). Policy issues refer to the key concerns regarding policy implementation (Hogl et al., 2016). Coherence between policy issues leads to integration (Hogl et al., 2016). Policy integration can be vertical or horizontal (Rode, 2019). Horizontal policy integration refers to coherence between different policies at the same policy level e.g. national policies for different sectors (Rode, 2019). Vertical integration refers to the coherence between policy frameworks at supranational, national, regional and local levels (Howlett et al., 2017). Vertical policy integration provides a platform linking bottom up and top down dynamics (Arroyo, 2017). Combination between bottom up and top down activity is necessary for sustainable development implementation in higher education (Heck, 2005; Ramísio et al., 2019). Therefore, vertical policy integration of international, national and organisational policy frameworks for sustainable development could contribute to its implementation.

The analysis of vertical policy integration can provide information to improve sustainable development implementation (Atkinson and Klausen, 2011; Rode, 2019). In the case of higher education, some countries, for instance, Chile, Colombia, Mexico and Peru lack a system of policy frameworks for sustainable development implementation (Hernandez et al., 2018). Other countries have well developed policy frameworks at national and organisational levels. For instance, the United Kingdom is a country that has a complex sustainable development policy network for sustainable development implementation in higher education (Vargas et al., 2019). In addition, the United Kingdom has a mature and internationally renowned higher education system (De Vita and Case, 2003). Also, the United Kingdom has been a pioneer in integrating sustainable development into Higher Education (Sterling and Scott, 2008). Therefore, the study of the vertical policy integration of the United Kingdom's sustainable development policy frameworks could generate good practice insights that may be transferable to other countries.

The questions that become apparent are: What are the policy issues related to sustainable development implementation in higher education present in policy frameworks? Are policy issues vertically integrated across the international, national, and organisational policy levels?

The aim of this paper is to improve understanding on the implementation of sustainable development in higher education. The objective was to undertake a multilevel (international, nationally, organisational) analysis of policy frameworks in order to assess vertical policy integration. Consistency, aggregation and comprehensiveness are the three dimensions required to achieve vertical integration (Atkinson and Klausen, 2011; Hogl et al., 2016; Meijers and Stead, 2004). Therefore, vertical policy integration was assessed in terms of these three dimensions.

In the following section the methods used for this study are described. The *results and discussion* section is divided into three subsections. The first subsection focuses on the meaning of vertical integration of sustainable development and related terms. The second section focuses on comprehensiveness and aggregation of policy issues. The third section focuses on levels of consistency of policy issues. The last section concludes and provides implications for policy and Higher Education organisations.

2. Methods

The study was undertaken to gain insights regarding vertical integration of policy issues. The research design was a survey of a sample of policy frameworks (Joye et al., 2016). The results from the analysis were interpreted and linked to the literature to discuss implications for implementation. For this purpose, the following methodological stages were undertaken. First, sampling criteria were developed. Second, a policy framework search methodology was developed and implemented. Third, data collection was undertaken. Fourthly, the data collected was analysed. Finally, a matrix table showing the main results was developed.

2.1. Sampling criteria

A set of eight criteria was used to choose the sample of policy frameworks (Table 1). Policy frameworks for higher education (Table 1, sample criterion FU) at international (i.e. sampling criterion i), national and organisational policy levels from the United Kingdom were chosen (i.e. sampling criterion ii and iii). All policy frameworks also needed to be relevant across all disciplines (i.e. sample criterion AD). Focused on sustainable development for all areas of universities' activities (i.e. sampling criterion AA) and for the whole institution (i.e. sampling criterion WI).

Higher education organisational policy frameworks had to meet two additional criteria. First, they were required to be from universities in the top 10 of the People and Planet University League 2017, and second they were required to have an environmental management system (i.e. Table 1, sampling criteria EM and UL). The People and Planet League was used as this has been created to rank universities in terms of ethical and environmental performance in the UK (Wals, 2014). Being in the top 10 suggests that they are national leaders in sustainable development implementation. Having an environmental management system suggests that the universities are implementing measures towards sustainable development at organisational level. Therefore, the People and Planet University League was appropriate to use in facilitating the sampling process.

Only the policy frameworks active since the end of the decade of education for sustainable development and the search dates, were included in the study (i.e. Table 1, sampling criteria TS). The reason for this choice is that a fertile context related to sustainable development and education activity would be expected after the decade. Finally, the policy frameworks needed to be publicly available (i.e. Table 1, sampling criterion PA) to ensure accessibility.

Higher education institutions are key organisations to be studied regarding their contribution to sustainable development. Universities are influenced by their national context when seeking to progress towards sustainable development (Radinger-Peer and Pflitsch, 2017). Due to globalisation and internationalisation, universities are influenced by their international contexts (Lapina et al., 2016). The United Nations is a key international player in sustainable development. The United Nations Educational, Scientific and Cultural Organisation declared the decade of education for sustainable development worldwide and the follow up Global Action Programme (GAP) on education for sustainable development. The International Journal on Sustainability in Higher Education and the Journal of Cleaner Production have the largest number of papers focused on sustainable development in higher education (Hallinger and Chatpinyakoop, 2019). Therefore, these two journals

Table 1
Sampling criteria for policy frameworks included in the survey.

	PA	FU	AD	WI	EM	UL	AA	TS
Talloires [i]	1	1	1	1	–	–	1	1
Halifax [i]	1	1	1	1	–	–	1	1
Rio [i]	1	0	1	1	–	–	1	1
Kyoto [i]	1	1	1	1	–	–	1	1
Copernicus [e]	1	1	1	1	–	–	1	1
Swansea [i]	1	1	1	1	–	–	1	1
Thessaloniki [i]	1	0	0	0	–	–	0	1
Luneburg [i]	1	1	1	1	–	–	1	1
Ubuntu [i]	1	1	1	1	–	–	1	1
Cape Town [a]	1	0	1	0	–	–	0	1
Johannesburg [i]	1	0	0	0	–	–	0	1
Barcelona [em]	1	0	0	0	–	–	0	1
Graz [i]	1	1	1	1	–	–	1	1
Sapporo [i]	1	1	1	1	–	–	1	1
Turin [i]	1	1	1	1	–	–	1	1
Tokyo [ap]	1	0	0	0	–	–	0	1
Tbilisi	1	0	0	0	–	–	0	1
Rio+20 [i]	1	1	1	1	–	–	1	1
Nagoya [i]	1	1	1	1	–	–	1	1
GHESP [i]	1	1	1	1	–	–	1	1
Total	20	13	15	14	–	–	14	20
Wales 2008 [ii]	1	1	1	1	–	–	1	1
England 2008 [ii]	1	1	1	1	–	–	1	1
England 2014 [ii]	1	1	1	1	–	–	1	1
Scotland 2010 [ii]	1	1	1	1	–	–	1	1
Scotland 20013 [ii]	1	1	1	1	–	–	1	1
Procurement [ii]	1	1	0	0	–	–	0	1
Total	6	6	5	5	–	–	5	6
Plymouth [iii]	1	1	1	1	1	1	1	1
Worcester [iii]	1	1	1	1	1	1	1	1
Manchester Metropolitan [iii]	1	1	1	1	1	1	1	1
Nottingham Trent [iii]	0	0	0	0	0	1	0	1
City London [iii]	0	0	0	0	1	1	0	1
Gloucestershire [iii]	1	1	1	1	1	1	1	1
Bournemouth [iii]	0	0	0	0	0	1	0	1
Trinity Saint David [iii]	0	0	0	0	1	1	0	1
Edinburgh Napier [iii]	0	0	0	0	0	1	0	1
Glasgow [iii]	0	0	0	0	0	1	0	1
Total	4	4	4	4	6	10	4	10

Notes (i): international; (ii): national; (iii): organisational; (e): European; (a): African; (em): Euro-Mediterranean; (ap): Asia Pacific; 1: present; 0: absent; (a); PA: publicly available; FU: policy focused on higher education; AD: cross disciplinary policy; WI: whole institution policy; EM: environmental management system; UL: top 10 people and planet university league; TS: within the sampling time scale; AA: sustainable development policy addressing all areas of university activity. The chosen policy frameworks for the study have a complete set of 1s across, except for Copernicus[e] which is not chosen because it focus is only Europe.

and the United Nations website were searched for relevant international policy frameworks.

At national level, the United Kingdom governments and their higher education funding councils (i.e. Wales, Scotland, Northern Ireland, England; and Higher Education Funding for England, Higher Education Funding for Wales, Scottish Funding Council) regulate and manage funding for universities. Therefore, their webpages were identified (i.e. www.hefce.ac.uk, www.hefce.ac.uk, www.sfc.ac.uk, www.gov.scot/, www.gov.uk/, http://gov.wales, www.northernireland.gov.uk) and searched for sustainable development policy frameworks.

At an organisational level, the policy frameworks were found following links from the People and Planet University League website where this information was publicly available. When a policy framework was not found through this channel, the top ten universities' websites were searched. The keywords for the website search were "declarations" or "policy framework" or "strategy" and "sustainable development" or "education for sustainable development" and "higher education" or "universities" and their root words. The keyword "strategy" was searched at organisational level as this is the type of policy framework used in higher education (Holstein et al., 2018). The keyword "declarations" was searched at international level as this is the type of policy framework language used at international level (Hoover and Harder, 2015). From the list of policy frameworks found 12 fulfilled the criteria at international level, 5 at national level, and 9 at organisational level. Searches took place between 26 April 2016 and 15 August 2017.

2.2. Data analysis

Policy frameworks are written documents, and they can be studied through content analysis. Content analysis refers to the study of written or spoken language with a focus on interpretation (Krippendorff, 2018). The sample of policy frameworks was studied for its language content at different policy levels. The data collection was done by collecting text related to activities at universities that facilitate the sustainable development implementation. The data collection was done by detailed reading of all the policy frameworks that fulfilled the sampling criteria.

Data collected from the international, national and organisational policy frameworks were analysed inductively using NVIVO 10. The analysis followed an inductive coding approach. Codes were assigned to the data collected to create units of analysis (Lincoln and Guba, 1985). Firstly, open coding used words or groups of words taken from the policy frameworks. Second, selective coding merged similar codes. This iterative analysis process distilled a final list of policy issues.

Presence and absence of the terms (i.e. policy issues) that resulted from the data analysis were recorded on a tally table. The tally table was developed into an integration matrix. For this, the total number of policy frameworks in which a policy issue was found was recorded and turned into percentages. The results (i.e. percentages and numbers) were analysed in terms of three dimensions of vertical policy integration (i.e. comprehensiveness, aggregation, and consistency; Atkinson and Klausen, 2011; Hogl et al., 2016; Meijers and Stead, 2004).

The first dimension, comprehensiveness reflects the scope of policy issues across the three policy levels. The scale was created by adding the number of policy issues at each level.

The second dimension, aggregation, reflects the number of policy levels at which particular policy issues are mentioned. The scale was created by adding the number of policy levels for each policy issue. The third dimension, consistency of integration, refers to the diffusion of a policy issue within each policy level (i.e. number of documents). The scale for comprehensiveness was created by listing all the percentages, then counting the number of times that the 100% appeared. Based on this number the groups of percentages were decided.

3. Results and discussion

The *results and discussion* section is divided in three subsections. The first section discusses the meaning and vertical integration of the terms sustainability and sustainable development in terms of consistency. The second section discusses Comprehensiveness and aggregation within the policy frameworks. The third section discusses levels of consistency within the policy frameworks.

3.1. Meaning and consistency of the term sustainable development and sustainability

There is consistency of the term *sustainability* and the terms with the root *sustain* across the three policy levels (100%, n = 26,

Table 2). On the contrary, the term *sustainable development* does not appear in all policy framework levels (85%, n = 26). The term is present in all the national policy frameworks (100%, n = 5), but not at the organisational (67%, n = 9) or international (92%, n = 12) policy levels. Differences might indicate that policy objectives may be interpreted differently at different levels. Using 'sustainability' instead of 'sustainable development' might be linked to the benefits of ambiguity and brevity (i.e. one word instead of two long words). Ambiguous terms, which have different meanings, can minimise push back from people working at the policy implementation (Baker et al., 2005).

The Brundtland Report uses the concept of *sustainable development* (WCED, 1987). Sustainable development has been conceptually defined through *the Ladder of sustainable development* (Baker et al., 2005: 9). The Ladder goes from treadmill, to weak, to strong, to ideal sustainable development (Baker et al., 2005: 9). In this context, one can move up or down the Ladder (Baker et al., 2005). Globally, policy makers, governmental bodies and key players in the development field use the concept of sustainable development (Estes, 1993). Sustainable development has "great policy significance" and has been historically a "tool for political consensus" (Baker et al., 2005: 28). Therefore, the term sustainable development could be included consistently in international and organisational policy levels.

The Brundtland Report introduced the ambiguity of using the term sustainability and related root terms, for instance "sustainable world economy" (WCED, 1987: 1). The term sustainability and its root terms, is used in relationship to sustainable development principles (Holt and Barkemeyer, 2012). However, sustainability and related terms are also used to describe financial stability and economic growth (Fischer et al., 2017; Lewis, 2000). Economic growth can have negative impacts on the environment (Korhonen et al., 2018). Therefore, the use of sustainability may need to be clarified in policy frameworks to prevent misunderstandings.

The very inconsistent use of sustainable development as a policy issue at the different policy levels may also have implications for sustainable development implementation in higher education (Table 2). Implications include potential differences in direction and goals (Silva and Figueiredo, 2017). A shared language related to direction and goals is linked to the development of shared practices (Mills, 1940). Therefore, inconsistencies in the use of sustainable development could impede the development of shared practices. Shared practices can support sustainable development implementation in organisations (Silva and Figueiredo, 2017). Therefore, clarifying the language related to sustainable development could help support the objectives of the policy frameworks. However, the vagueness of the concept of sustainable development could be used as a strength. Nodding to this definitional ambiguity provides organisations with a wider range of legitimate activities, whether in the name of sustainability *or* sustainable development.

Both sustainability and sustainable development could open up space for discussion and reflection around major challenges linked to complexity and uncertainty (Wals and Jickling, 2002). By grappling with these terms in higher education policy development, universities can work through reflection and critical thinking which are core to educational activity (Wals and Jickling, 2002). The process of policy development includes discussion around policy objectives (i.e. sustainable development). These discussions are a key aspect of the sustainable development implementation in higher education. Therefore, the importance of these discussions could be explicitly acknowledged in policy frameworks and practice.

3.2. Comprehensiveness and aggregation in higher education policy frameworks

3.2.1. Advocacy disaggregation and lack of comprehensiveness

The policy is not aggregated or comprehensive in terms of the policy issue *advocacy* at the organisational level (0%, n = 9, Table 3). The reason for this might be that universities do not engage in advocacy for sustainable development implementation.

Firstly, advocating for education for sustainable development in higher education often backfires as this approach is rejected by academics (Hegarty, 2008). It is preferable for academics to take ownership of education for sustainable development and to find its disciplinary relevance (Cebrián et al., 2015). It is crucial for academics to be engaged for changes to be successful (Lozano, 2006). Therefore, advocacy is not an effective policy issue to support implementation of sustainable development in higher education.

Secondly, students benefit from learning in institutions that have academic freedom which allows them advantages including freedom of speech and critical skills. International policy

Table 2
Presence or absence of the term sustainable development and sustainability (and other *sustain* root words) in policy

	SD	S*
International Total	11	12
% (n=12)	92	100
National Total	5	5
% (n=5)	100	100
Institutional Total	6	9
% (n=9)	67	100
Sum	22	26
% (n=26)	85	100

Notes (SD): sustainable development; (S*): *sustain*; The table shows three dimensions of vertical integration (comprehensiveness, aggregation, and consistency; Atkinson and Klausen, 2011; Hogl et al., 2016). **Comprehensiveness** i.e. **scope** of policy issues across the three policy levels; reading horizontally across rows, 2 policy issues, three policy levels; 2 issues: underlined. **Aggregation** i.e. the number of policy levels at which particular policy issues are mentioned; up and down, 3/3 levels; 0–2 policy levels: normal, *3 policy levels: italics*. **Consistency** i.e. the diffusion of policy issue within each policy level; number of documents, percent of documents per level, 0–9%: low, 10–69%: medium, 70–99%: high, 100%: complete.

Table 3
Policy issues related to sustainable development implementation in higher education.

	CL	PR	ED	AD	OU	TE	SD	CR	RE	CO	PO
International Total	8	9	12	2	8	12	7	3	12	9	9
% (n=12)	67	75	100	17	67	100	58	25	100	75	75
National Total	4	5	5	1	5	5	5	2	5	4	5
% (n=5)	80	100	100	20	100	100	100	40	100	80	100
Organisational Total	6	7	8	0	8	9	8	5	8	6	8
% (n=9)	67	78	89	0	89	100	89	56	89	67	89
Sum	18	21	25	3	21	26	20	10	25	19	22
% (n=26)	69	81	96	12	81	100	77	38	96	73	85

Notes CL: collaboration; PR: partnership; ED: education; AD: advocacy; OU: outreach; TE: teaching and learning; SD: staff development; CR: curriculum review; RE: research; CO: campus operations; PO: policy; The table shows three dimensions of vertical integration (comprehensiveness, aggregation, and consistency; Atkinson and Klausen, 2011; Hogl et al., 2016). **Comprehensiveness** i.e. scope of policy issues across the three policy levels; reading horizontally across rows, 11 issues, three policy levels; 11 issues: underlined, 10 issues: normal. **Aggregation** i.e. the number of policy levels at which particular policy issues are mentioned; up and down, 3/3 levels; 0–2 policy levels: normal, *3 policy levels: italics*. **Consistency** i.e. the diffusion of policy issue within each policy level; number of documents, percent of documents per level, 0–9%: low, 10–69%: medium, 70–99%: high, 100%: complete.

frameworks support academic freedom and critical thinking (e.g. IAU, 1998). Governments and employers have argued that critical thinking is a key attribute for students (Pithers and Soden, 2000). Critical thinking education supports the development of skills for independent learning and for thinking beyond knowledge acquisition (Whiley et al., 2017).

In addition, critical thinking is crucial for engaging with wicked problems (Tasch and Tasch, 2016) linked to sustainable development. Wicked problems are problems that have more than one potential solution (Termeer et al., 2015). Critical pedagogies support the self awareness and agency of students (Foley et al., 2015). In the context of critical thinking and critical pedagogies, academics do not impose their perspective on students (Foley et al., 2015; Whiley et al., 2017). Advocating for the integration of sustainable development would mean that sustainable development is the only answer to economic, societal and environmental challenges (Wals and Jickling, 2002). This one sided vision would interfere with the debatable nature of sustainable development as well as democracy and participation (Wals and Jickling, 2002). *Advocacy* as a policy issue is therefore, incompatible with critical thinking and critical pedagogies on which academia is based.

3.2.2. Comprehensivesnnes and aggregation of policy issues

Comprehensiveness and aggregation of policy issues follow the same pattern at national and international levels. The policy issues *collaboration, partnership, education, advocacy, outreach, teaching and learning, staff development, curriculum review, research, campus operations and policy* are comprehensive across the international and national policy levels (CL, PR, ED, AD, OU, TE, SD, CR, RE, CO, PO, Table 3). The policy for all policy issues is aggregated across the international and national policy levels (CL, PR, ED, AD, OU, TE, SD, CR, RE, CO, PO, Table 3). Comprehensiveness and aggregation provide the breadth of policy issues that have been developed to implement policy (Atkinson and Klausen, 2011; Meijers and Stead, 2004). Therefore, collaboration, partnership, advocacy, outreach, teaching, staff development, curriculum review, research, campus and operations, and policy are the policy issues that have been developed in policy and practice to advance sustainable development implementation in higher education institutions. This suggests that policy development could be informed by these policy issues. Policy makers ought to assess whether or not these policy issues need to be included when writing new policy at organisational, national and international level.

3.3. Levels of consistency of higher education policy frameworks

3.3.1. Consistency for Teaching and learning

The *teaching and learning* policy issue is consistent in the policy frameworks (i.e. 100% of documents, at international, national and organisational levels, Table 3). *Teaching and learning* is the only consistent policy issue at all levels. One of the core activities of higher education institutions is teaching. Thus, policy frameworks coincide in suggesting that universities can contribute to sustainable development through teaching.

Teaching happens at universities mainly through the curriculum. The curriculum is the formal tool for higher education staff to support the development of students' skills and knowledge. The holistic integration into teaching and learning of skills and knowledge (i.e. environmental, societal and economic concerns) related to sustainable development is education for sustainable development implementation (QAA, 2014). Higher education curricula do not traditionally address economic, environmental and societal concerns holistically (Cebrián, 2017). Studies suggest that education for sustainable development implementation has occurred sparsely (Dawe et al., 2005; Huckle and Wals, 2015; Lozano et al., 2015). However, Table 3 shows that there is a multilevel policy consensus in terms of teaching as a way of contributing to sustainable development (Table 3). Therefore, the lack of integration of education of sustainable development into the curriculum suggests that policy may not have been translated into practice. Additionally, vertical policy integration of the policy issue *teaching and learning* does not guarantee education for sustainable development implementation in the curriculum.

3.3.2. Inconsistency for education and research

The *education and research* policy issue is inconsistent (i.e. 100% of documents, at international, national levels only). Lack of perceived organisational support hinders sustainable development implementation in higher education (Cebrián, 2018). Since an organisational policy framework provides a formal outline of organisational intentions (Newig and Koontz, 2014), staff could perceive policy issues included in organisational policy as support for action. Education and research are the main activities of universities. Therefore, the absence of *education and research* policy issues related to education for sustainable development and sustainable development in organisational policy frameworks can hinder sustainable development implementation in higher education.

3.3.3. Policy issues that are very inconsistent

The presence of *Partnership, Outreach, Staff Development and Policy* policy issues (PR, OU, SD, PO) presence is very inconsistent (i.e. 100% of documents, at national level only). This might be because there are UK policy networks supporting sustainable development implementation in higher education (Vargas et al., 2019). For instance, higher education sustainable development policy networks include organisations such as research councils, universities finance directors group, local authorities and associations of universities (Vargas et al., 2019). In addition, the inconsistency at international level might be due to subsidiarity. Subsidiarity refers to different spheres of influence occurring at different policy levels, with the principle aim being that policy autonomy and decision making takes place at the lowest level possible, consistent with higher-levels providing a general steering role ie 'what' decisions rather than 'how to' decisions are set at higher levels (Lenaerts, 2017). Therefore, the following paragraphs discuss each of the policy issues that are very inconsistent in the policy frameworks (i.e. partnership, policy, staff development and outreach).

Associations of universities have provided critical voices to support effective implementation of sustainable development in higher education (Rowe et al., 2015). For instance, in the UK, the Alliance for Sustainability Leadership in Education (EAUC) is a platform for partnership work nationally (https://www.eauc.org.uk/about_us). At international level similar initiatives exist, an example of this is the Higher Education Sustainability Initiative (HESI) which includes a range of UN bodies (e.g. UN Global Compact's Principles for Responsible Management Education (PRME) initiative; United Nations, n.d.). In addition, partnerships have had an impact beyond higher education (i.e. business sector; Rowe et al., 2015). Therefore, partnership between universities can support bottom up and top down development of both policy and practice for sustainable development implementation in higher education nationally and internationally.

The presence of *partnership* as a policy issue at national level is complete (100%, n = 5, Table 3). However, at international and organisational level, the presence of this policy issue is high but not complete (75%, n = 12 at international level, Table 3). This is similar at organisational policy level where the presence of partnership is high (78%, n = 9, Table 3). Therefore, working towards consistently including partnership as a policy issue in organisational and international policy frameworks could support sustainable development implementation in higher education.

Similarly to *partnership*, the policy issue focused on *policy development* (PO, Table 3) is included in all policy frameworks (100%, n = 5, Table 3). At national and organisational level policy is not included in all policy frameworks (international: 75%, n = 12; organisational: 89%, n = 9). However, organisational policies are crucial to support sustainable development implementation through whole institution approaches (Ramísio et al., 2019). Whole institution approaches regarding sustainable development are rare (Lozano et al., 2015). The development of policy as a policy issue can support a range of other policy issues, which can support organisational implementation of sustainable development (Newig and Koontz, 2014). Therefore, policy makers ought to assess the consistent inclusion of policy development as a policy issue in international and organisational policy frameworks.

The policy issues *staff development and outreach* follow a similar pattern of inconsistency. Firstly, the presence of staff development as a policy issue at international level is medium (58%, n = 12, Table 3) and high at organisational level (89%, n = 9). Academic staff development can be a catalyst for implementing education for sustainable development in curricula (Barth and Rieckmann, 2012). Academic staff development requires active enagement of academics. Academics' engagement is crucial for implementing education for sustainable development (Lozano, 2006; Holmberg and Samuelsson, 2006). In addition, environmental management systems, which includes staff training, are designed to support sustainable development implementation in campus operations. Therefore, consistently including *staff development* as a policy issue in international and organisational policy frameworks might support sustainable development implementation in higher education.

Secondly, the presence of *outreach* as a policy issue at international level is medium (67%, n = 12, Table 3) and high at organisational level (89%, n = 9). Universities' outreach work refers to universities' activity within their communities beyond the core activities related to teaching and research (Johnson et al., 2019). Outreach work can include universities working within regional initiatives. Universities are uniquely positioned to help address difficulties faced by sustainable development regional initiatives (Zilahy and Huisingh, 2009). For instance, universities can provide a platform for collaboration between different actors to support regional governance (Zilahy and Huisingh, 2009). However, universities' engagement in regional issues related to governance are only recently emerging as policy issues and in the academic literature (Peer and Penker, 2016). Regional actors and universities tend not to utilise this unique opportunity (Zilahy and Huisingh, 2009). Therefore, by consistently including outreach as a policy issue within international and organisational policy frameworks, policy frameworks can support universities' regional role towards sustainable development.

3.3.4. Lack of consistency of policy issues

The *collaboration, curriculum review, campus and operations* policy issues are lacking consistency (i.e. less than 100% of documents at all levels, Table 3). This might suggest that these issues are not associated at policy level to the integration of sustainable development in higher education. However, there are reasons to seek consistency for these issues. The policy issues that lack consistency (i.e. curriculum review, campus and operations and collaboration) will be discussed below.

Firstly, policy issue *curriculum review* has a medium presence at all levels (international: 25%, n = 12; national: 40%, n = 5; 56%, n = 9, Table 3). Academics tend to be receptive of curriculum changes regarding education for sustainable development during curriculum review (Cebrián et al., 2015). The power to make decisions regarding the curriculum is likely to be given to academics and institutions. Systematic review processes provide appropriate spaces for discussions and reflection around skills, knowledge and pedagogical development at unit and programme level (Tierney et al., 2015). Academics perceive that students are likely to actively engage with sustainable development issues when included in curriculum documentation and exams (Cebrián et al., 2015). Therefore, people involved in policy development at organisational, national and international level need to consider including curriculum review as a policy issue.

Secondly, presence of *campus and operations* as a policy issue is high at international (75%. N = 12, Table 3) and national level (80%, n = 5) and medium at organisational level (67%, n = 9). Implementing sustainable development in campus and operations can support the sustainable development implementation in other areas (Tierney et al., 2015). For instance, installing solar panels or supporting the enhancement of biodiversity on campus can help students and staff learning about issues related to sustainable development (Verhoef et al., 2020). In addition, implementing sustainable development in campus and operations can help institutions financially due to energy savings, for instance (Gormally et al., 2019). Therefore, people involved in policy development at organisational, national and international level ought to consider

consistently including collaboration as a policy issue.

Thirdly, presence of the policy issue *collaboration* is medium at international (67%, n = 12, Table 3) and organisational (67%, n = 9) level, and high at national level (80%, n = 5). The case for consistently including collaboration as a policy issue is similar to the case for consistently including partnership (see section 3.2.3). However, collaboration might be broader and easier to implement than partnerships that may require more formal agreements than collaborations. Therefore, policy development at organisational, national and international level could be enhanced by consistently including collaboration as a policy issue.

If sustainable development is to be implemented in higher education across the world, addressing the inconsistencies discussed above could help. The inconsistencies could be addressed by bottom up policy development based on national and organisational policy frameworks. The comprehensiveness and aggregation of appropriate policy issues (i.e. collaboration, partnership, education, outreach, teaching, staff development, curriculum review research, campus and operations and policy) could inform international sustainable development policy development. This would include enhancement of international, national and organisational higher education policy frameworks across the world.

4. Conclusion

The aim of this paper was to improve understanding of sustainable development implementation in higher education. The objective was to undertake a multilevel (international, nationally, organisational) analysis of policy frameworks in order to assess vertical policy integration.

The analysis provided a range of policy issues that could support or hinder sustainable development implementation in higher education institutions. Collaboration, partnership, education, outreach, teaching and learning, staff development, curriculum review, research, campus and operations and policy are the policy issues that could support implementation. On the contrary, advocacy as a policy issue can hinder implementation. Therefore, advocacy is not appropriate as a policy issue in sustainable development implementation in higher education.

The policy analysed was comprehensive and aggregated in terms of the policy issues that support sustainable development implementation in higher education. However, policy was not consistent in terms of these policy issues. Achieving consistency of relevant policy issues could enhance sustainable development implementation in higher education institutions. Therefore, policy makers ought to assess the inclusion of these key policy issues when writing or developing higher education policy related to sustainable development at organisational, national and international level.

The policy issues list inductively defined, as well as its related nuances, presented in this paper provides a helpful backwards looking diagnostic tool, or forward looking planning tool to decide both the scope and attention to sustainable development in terms of policy development and practice in higher education. This paper provides a starting point regarding vertical policy integration and related implications. However, further work is needed to understand how issues can be addressed.

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