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Agents for sustainable futures? The (unfulfilled) promise of sustainability at leading business schools

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ABSTRACT

Present and future business leaders might be amongst the most important actors in initiating and managing a transition towards a sustainable economy and society in general. Preparing them for such a role has to be a central task of higher education institutions, especially business schools. Our paper maps how business schools frame sustainability in relation to probable and possible futures by examining the external online communication of the TOP100 business schools. Close to half of these institutions do not address sustainability in their education-related online communication, while the other half emphasize its economic dimension almost exclusively. We found little proof in their education-related communication that business schools attempt to stray from the path of the status quo, accordingly they continue to strengthen a neo-liberal worldview, only incorporating those aspects of sustainability which are compatible with this perspective. We also have to acknowledge, however, that business schools are 'open institutions' attempting to meet the expectations of their stakeholders. This may result in numerous and even conflicting goals. Choosing only a few of them as a communicative focus, (e.g., promoting individual strategies for career enhancement), wrings out the larger organisational and social issues like sustainability in its holistic sense.

1. Introduction

Our society and economy operate in a highly unsustainable manner. Maintaining the status quo runs the risk of leading to the collapse of the present social order, as we know it, or maybe even threatens the survival of the human species (Baum & Handoh, 2014; Bostrom, 2013; Gowdy, 2020). While this claim is hardly news since it is widely discussed in the academic literature, changing the behaviour of our systems seems to be an especially wicked problem. Even such a shock as COVID-19, which deeply affected production, consumption and mobility globally, hardly made a dent in current economic structures causing unsustainable patterns (Bansal, Grewatsch, & Sharma, 2021; Fyfe et al., 2021). It is very likely that production and consumption levels will rebound after the end of the pandemic.

Nevertheless, this global shock again pointed out that deeper and structural transformations are needed to steer our socio-economic assemblages away from the path they are locked into (Kanda & Kivimaa, 2020; Wells, Abouarghoub, Pettit, & Beresford, 2020). The question of how socio-economic transitions can happen is a pertinent and crucial one. Present and future business leaders might be one of the most important actors in initiating, managing and maintaining these transitions both at organisational and sectoral level. This

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kind of task involves anticipatory competences at an organisational level connecting knowledge and action in a reflexive way (Fuller, 2017). Preparing them for such a role can be a central task for higher education institutions (heretofore: HEIs), especially business schools. Nevertheless, the question remains whether business schools even mention it in their education-related communication (as an indicator of the importance of the issue) or if it is missing from this content.

Accordingly, our paper aims to map how business schools interpret sustainability and how it is connected to the framing of the future. It examines the external online communication of the TOP100 business schools in order to identify different aspects of sustainability-related language use in their education-related texts. This aim corresponds to other studies which utilised textual analytical approaches to understand how HEIs frame sustainability in declarations (Sylvestre, McNeil, & Wright, 2013; Wright, 2004), strategic planning documents (Bieler & McKenzie, 2017), introductory business courses (Edwards et al., 2020; Landrum & Ohsowski, 2017) and management curricula (Winfield & Ndlovu, 2019; Wu, Shen, & Kuo, 2015). Similar to these studies, our paper focuses on how sustainability and the future are interpreted by institutions and does not attempt to provide an accurate account on their practice. Nevertheless, it can be argued that how they speak about and understand these issues, as well as which themes they put their emphasis upon, are indicative of their educational orientation.

While issues relating to sustainability currently exist at HEIs in general, and at business schools in particular, it is not at all straightforward which aspect or aspects of sustainability is highlighted and which ones are downplayed in education. As we will argue in the paper, this 'relative blindness' to specific aspects of sustainability can be partly explained with the prevalent neoliberal worldview. Although what neoliberalism means in higher education is not at all straightforward (Tight, 2019), our definition includes seeing education as a commodity, with students as private beneficiaries of educational investments (Roberts & Peters, 2019), a strong belief in the market logic of competition and resource allocation, and the primacy of economic solutions also regarding social and environmental problems.

The added value of our research is that we not only examine sustainability-related language-use in a comparative manner based on the external online communication of highly ranked business schools globally, but we also connect it to the way these organisations frame the term 'future'. This research strategy can provide a more comprehensive and detailed picture revealing both similarities and differences in this relatively diverse set of institutions.

As for the structure, in the first section of our paper we delineate the conceptual background of our research, that is, we focus on different dimensions of sustainability, and on the relationships between HEIs, business schools, sustainability and the future. The second section gives a detailed overview of our methodological choices in terms of our sample, our corpus-based data, and the data analytical techniques applied. The subsequent part discusses our results on the different language-use modes business schools show regarding the terms 'sustainability' and 'future'. Lastly, the discussion section puts our results in a broader social and organisational policy context offering tentative explanations on the relative lack of sustainability in business schools' education-related communication.

2. Conceptual framework

2.1. The concept of sustainability

Although sustainability is now a familiar and widely used concept in contemporary society, different stakeholders continue to present different understandings, leading to a high degree of ambiguity and fuzziness of the term (Aleixo, Ulisses, & Azeiteirod, 2018). The concept is characterized by various definitions and applications (White, 2013), since multiple perspectives, beliefs and values have an influence on its meaning. Brinkman (2014) argues that sustainability is the first true postmodern discipline of our time: '*Because of the variety of approaches, practices, and viewpoints, we do not have clear-cut definitions of the field that fall nicely within modernist disciplinary structures.*' (Brinkman, 2014:13). In order to present a comprehensive picture, Lozano (2008) defines five different perspectives: (1) that of conventional economists, (2) non-environmental degradation, (3) integrational (including economic, environmental and social aspects) and (4) inter-generational. He promotes the (5) holistic perspective of sustainability, as most complete, which comprises: '*the integrational and the inter-generational perspectives, and a balance between economic, environmental and social aspects as well as the short-, medium- and longer-term perspectives'* (Aleixo et al., 2018: 2).

Sustainability ideologies also vary across a spectrum ranging from weak sustainability to strong sustainability (Edwards et al., 2020; Landrum & Ohsowski, 2017). The weak sustainability worldview places monetary value on natural resources to determine the economic value in the marketplace, with the belief that infinite economic growth is necessary, and decisions are made by cost-benefit analysis (Hartwick, 1978; Pearce, 1993; Solow, 1993), as well as, ignoring non-economic aspects. By contrast, strong sustainability views natural capital as priceless and claims that infinite economic growth is problematic and that a steady-state economy is more desirable, making decisions through science and ethics and measuring progress by non-economic factors, such as the state of the environment and quality of life (Daly, 1991; Landrum & Ohsowski, 2017; Pearce, 1993). In line with this, Bizerril, Carvalho, and Pedrosa (2018) consider two prevalent views on sustainability: a capitalist perspective of the laws of the market, which relates to sustainable development, and an alternative perspective, called socio-environmental sustainability, based on the respect of ecological, cultural diversity and ethical values which emphasizes the aspect of sustainable production and consumption.

2.2. Sustainability, higher education and futures

Sustainability in higher education has its own story with specific and distinct sequences. Beynaghi et al. (2014) present three phases through which higher education went through concerning sustainability. The first phase was around the 1970′s when the theme of

sustainability first appeared and gradually strengthened in HEIs through public lectures, conferences, and publications in various disciplines. While participation in the first phase was rather sporadic and ad hoc, the second phase can be characterised by the institutionalisation of sustainability in HEIs through education and research programmes, offices, and departments. The third, ongoing phase, is when sustainability is embedded in everyday operations and maintenance. According to Beynaghi et al. (2014), we can only call an institution a 'sustainable university' when it has entered the third phase.

Nevertheless, it is important to take into consideration that the concept of sustainability is multidimensional, and HEI might create their own interpretations based on social, environmental, or economic wellbeing (or a combination of these). As far as the purpose of this paper is concerned, it is reasonable to presuppose that HEIs strategically choose their own interpretation from the above-mentioned perspectives and aspects to present themselves as sustainable and responsible organisations. However, as we will see, this strategic reasoning on behalf of HEIs creates a strong bias towards the economic aspect and weak sustainability.

In the last two decades there has been a growing consensus that universities are strategic agents in the promotion of sustainability (Bizerril et al., 2018; Daub, Hasler, Verkuil, & Milow, 2020; Gröschl & Gabaldon, 2018). Research suggests that HEIs can contribute to fostering a sustainable economy and society due to their double role: first, creating relevant knowledge and transferring this knowledge to society, and second, preparing their students for their future roles in society and to make sustainable and responsible decisions (Stough, Ceulemans, Lambrechts, & Cappuyns, 2018).

Analysing sustainability-related declarations, Wright (2004) provides a detailed overview of sustainability in the higher education sector. She points to the fact that while the issue of sustainability has been already quite prominent at HEIs, declarations only emerged in the 1990 s. As with external communication, declarations also raise questions concerning the congruence between stated values and actual practice. Signing agreements does not mean that institutions would implement the commitments in it. Focusing on the key themes of these declarations, however, clearly shows in which areas HEIs present themselves as active agents promoting sustainability. These stated priorities include the ethical and moral responsibility of organisations to become sustainable institutions and to contribute to sustainability at various (from local to global) levels, developing ecological literacy (both of students and staff) and promoting research activities in relation to sustainability issues. They also mention external relations such as the creation of public outreach programs and building partnerships with external partners (NGOs/industries and other universities) (Wright, 2004).

Altogether, HEI initiatives and activities of this kind take place in eight different areas (Lozano et al., 2015): education, community engagement/outreach, research, institutional framework, campus operations, on-campus experiences, assessment and reporting. On the other hand, they can be divided into different practices of sustainability: environmental, economic, social/cultural and institutional/educational/political (Aleixo et al., 2018; Leal Filho, Shiel, & Paço, 2015; Lozano, 2011). As the following paragraphs show, several of these aspects also appear in recent academic literature focusing on the relationship of higher education and sustainability.

As for the function of education, Rieckmann (2012), for example, argues that one of the main roles of HEIs is to develop students' key competencies regarding sustainability. In this way they can directly have an impact on their students' outlook and indirectly shape future societies (Rieckmann, 2012). Balsiger (2015) focuses on the role of universities in providing transdisciplinary learning opportunities. His study demonstrates that HEIs can promote sustainability and ecological literacy by offering project-based learning through which students can understand the complexity of the issue from multiple perspectives as quasi decision-makers. A deeper form of learning occurs when students mobilise transdisciplinary knowledge in decision-making situations characterised by uncertainty, limited knowledge, time, and budgetary constraints (Balsiger, 2015).

Ethical and moral responsibility towards the future is also a prominent topic in the scientific discourse on higher education and sustainability. Monteiro, Leite, and Rocha (2019), focusing on engineering education, emphasise HEI's role in developing the ethical sensibilities and anticipatory competences of students, so in turn, they can contribute to the construction of more equitable and sustainable futures. Nevertheless, higher education often falls short of these ambitious aims since ethical education is not well integrated in the curriculum and is based on passive instructions instead of the active involvement of students (Monteiro et al., 2019). While HEIs mainly focus on their students, they can also develop the competences of their own staff, which can shape education and research activities, as well as the operation of the organisation. According to Toarnicky and colleagues (2019), the main role of higher education in the future is to be responsive. The aim to form adaptive, reactive and responsible individuals through transformational learning practices also applies to the faculty of these institutions. In line with this, their paper offers case studies of how mapping and building internal resources at a business school can lead to organisational learning practices and the development of communities among faculty members (Toarniczky, Matolay, & Gáspár, 2019).

As mentioned above, another area where HEIs can promote sustainability is community outreach. Reyes (2018) stresses the role of higher education in driving local development. University-based educational programmes and innovation activities might be integrated with sustainability-oriented local development. In this Colombian case, the authors demonstrate how HEIs can help the transition towards more local sustainable food production systems and how students can practice and use their capabilities developed in educational programmes in their own communities (Reyes, 2018). In agreement with this, Yanez, Thumlert, de Castell, and Jenson (2019) present an alternative vision of higher education (especially STEM education) in which learning and problem-solving are closely connected to specific material localities and social contexts. This form of education empowers students to imagine their individual and collective futures and take agentive roles in their own communities (Yanez et al., 2019).

2.3. Future approaches and sustainability

Apart from the above-described studies, we can also approach the connection between futures and sustainability from a more theoretical viewpoint. Adam (2010) distinguishes three main types of future in terms of how we interpret and act on it. In the first approach, future is like 'fate'. It is pregiven and predetermined to which we can adapt our behaviour, given that it is possible to discern

it somehow with the help of experts. The second approach presupposes that the future is an empty and open space which can be filled by our desires, aspirations and projects. The third approach accepts that the actual present was always somebody else's future, that is, their desires, exploitations and colonisation of the future is what *presents* itself now. This last outlook also entails a different understanding of responsibility (Adam, 2008). Recognising these intertemporal relationships, we become responsible to the futures we shape and construct for the generations following us.

While these future approaches can be simultaneously present, we can also posit that the first approach is the dominant understanding of premodern eras, while the second is characteristic of modernity with its colonising and exploitative attitude towards the future. The third involves adopting the outlook where we take care of the future in the present (Adam, 2010).

This last approach might have a strong connection to sustainability, but only if we understand the concept in the holistic, intergenerational sense detailed above. In this broader conceptual approach sustainability means ensuring that our future-making in the present does not harm or seriously narrow down the opportunities of future generations. Nevertheless, if sustainability is only interpreted in an economic sense (or not mentioned at all), the approach to the future might become self-centred, thereby avoiding responsibility and care for others.

In relation to these issues, it is also worth mentioning that a number of papers analyse the temporal orientation of HEIs. Clegg (2010) highlights that in the high-paced present-day which is characteristic of the operation of HEIs, future is often depicted as an empty and open resource. Furthermore, the question of employability narrows understanding of the future to its individual implications. Both of these issues make it difficult to create an ethical orientation towards the future in higher education (Clegg, 2010). Bennett and Burke (2018) also emphasise that in a competitive neoliberal higher education there is significant time-squeeze, while our everyday (re)actions and taken-for-granted assumptions in the present tend to (re)produce our futures. Matus and Talbert (2015) analysed US curriculum reform proposals pointing to the fact that the role of the university is to grant students access to a complex global future. This future is rather abstract and relatively unknown, while some of its characteristics can be known if these proposals offer secure skills and knowledge for it. At the same time, students also remain rather passive, neutral disembodied entities regarding their education and their aspirations in society (Matus & Talbert, 2015).

2.4. Critical assessment of HEIs as agents of sustainability

As for assessing HEIs as potential agents of sustainability, the literature continues to show that HEIs do not fully understand the true nature of embracing sustainability (Mulá et al., 2017), although their role in connection with sustainable development has been the subject of intensive discussion for some 20 years (Daub et al., 2020). Research suggests that HEIs may offer insights into sustainability but avoid deeper challenges in unsustainable practices and the majority of institutions still lack a systematic integration of sustainability issues into their practices (Daub et al., 2020). Considerable attention has been paid towards barriers to change, preventing a systematic integration of sustainability in higher education. First, the lack of initiatives by HEIs is the result of a misconception about the concept of sustainability (as it is seen as too abstract and broad, lacking relationship with the academic routine). Secondly, several studies mention the lack of commitment, awareness, interest, and involvement of faculty, students, staff and management (Bizerril et al., 2018; Daub et al., 2020; Naeem & Peach, 2011; Waas et al., 2012), emphasizing that the success of sustainability initiatives in HEIs largely depends on top management's support. Thirdly, Verhulst and Lambrechts (2015) write about the lack of sustainability skilled staff and experts: most faculty members have little specialized knowledge of sustainability, and most academic staff have never received training on the topic, and do not feel comfortable working across disciplinary areas on the topic of sustainability (Jabbour, 2010; Naeem & Peach, 2011). Connected to the lack of relevant expertise, others mention resistance to change associated with behaviours, practices, or initiatives (Waas et al., 2012). Some university stakeholders do not want change, and others see sustainability as a theoretical model without practical implementation (Velazqez, Mungina, Platt, & Taddei, 2006), or see top-down sustainability initiatives as threats to academic freedom and credibility. The rigid disciplinary structure and conservative culture of HEIs could be also key barriers (Lambrecht et al., 2017). Finally, other results suggest the lack of human funding as obstacles (Naeem & Peach, 2011). Sustainability practices are still associated with heavy financial investments.

2.5. The potential role of business schools

Among HEIs, business schools can have a huge impact on promoting sustainability or a huge responsibility in withholding it (Ramboarisata & Gendron, 2019; Snelson-Powell, Grosvold, & Millington, 2020). In the US today almost 20% of the undergraduate students study business (educationdata.org, 2022), and we can assume that this figure is similar in other regions of the world, which makes business and management education the largest single field in HE (Beusch, 2014). Business schools and different levels of management education play an important role in forming the way in which future generations learn business practices (Wu et al., 2015) and can ensure that responsible leaders work together to support sustainable development (Badea, erban-Oprescu, Dedu, & Piroșcă, 2020), or can maintain unsustainable business practices. Still, some research suggests that business schools have been slower in joining the sustainability movement than other HEIs (Barber, Wilson, Venkatachalam, Cleaves, & Garnham, 2014; Schlegelmilch, 2020), and have been criticized for failing to genuinely integrate sustainability into the curriculum (Landrum & Ohsowski, 2017), as they *"continue to be driven by a 'doing business as usual' paradigm that renders them sedentary bystanders of complex global social-economic and environmental challenges"* (Gröschl & Gabaldon, 2018: 186).

The critical assessment concerning the value and role of business schools is not new: Veblen (1918) argued a century ago that the business school is 'incompatible with the collective cultural purpose of the university'. During the last 20 years, a general criticism became widespread stating that business schools promote a 'profit-first mentality' among their students, accompanied by the

assumption of opportunism (Ghoshal, 2005; Rocha, Pirson, & Suddaby, 2021), entirely focusing on shareholder value and market logic, as well as being partly responsible for ethical scandals (Beusch, 2014). Study programs have been criticised for overemphasizing hard and soft skills at the expense of more human qualities, such as responsibility, judgement, wisdom, and morality (Trkman, 2019).

Based on this criticism and pressure from society, there seems to be a general shift in business school curricula over the last 10 years towards sustainability and responsibility (Edwards et al., 2020; Maloni et al., 2021). Business schools realized that they must adapt their curricula and functioning to meet the changing social and economic demands for responsibility and sustainability and focus on both societal and organisational rationality. Many institutions have taken steps to signal a commitment to responsible business education and have signed up to charters such as the United Nations' Principles of Responsible Business Education (PRME), which declares six principles that encompass values needed to be addressed in sustainable management education (Snelson-Powell et al., 2020). There are over 800 signatories (https://www.unprme.org/about) as of 2022. As another example, AACSB, the business school accrediting body has also responded to this call: in 2013, the accrediting standards were updated to state that "*society is increasingly demanding that companies become more accountable for their actions, exhibit a greater sense of social responsibility, and embrace more sustainable practices*" (AACSB International, 2020, p. 9). AACSB now identifies sustainability as an important knowledge area (AACSB International, 2020). There are a number of best practices and case studies in the literature in which business schools are taking serious steps towards responsibility, sustainability, and the common good (Chartered Association of Business School CABS, 2021).

Still, the level and quality of sustainable business education varies considerably across business schools (Slager, Pouryousefi, Moon, & Schoolman, 2020). Some research suggests that there has been noticeable progress in the incorporation of sustainability in business schools (Lozano, Barreiro-Gen, Lozano, & Sammalisto, 2019), whilst others emphasized that there is still a long way to go (Badea et al., 2020; Edwards et al., 2020; Landrum & Ohsowski, 2017; Maloni et al., 2021; Painter-Morland, Sabet, Molthan-Hill, Goworek, & Leeuw, 2016; Ramboarisata & Gendron, 2019). Studies suggest that some business schools respond to this pressure symbolically rather than with substantive compliance (Snelson-Powell et al., 2020). In other words, they feel the pressure to 'talk' (externally communicate about their commitment to responsibility and sustainability), but sustainability issues are not embedded in business schools' actions (they do not change their institutional and educational practice) (Maloni et al., 2021). Snelson-Powell et al. (2020) speak about organisational hypocrisy, emphasizing the inconsistency between the sustainability rhetoric and practice of business schools.

Research also shows that the legitimacy of sustainability issues is often disputed, and the concept is often misunderstood and underappreciated among business school faculty (Slager et al., 2020). Naeem and Neal (2012) claim that even though faculty members realize the importance of sustainability issues, they do not integrate it because of apathy, or a lack of appropriate teaching resources. Furthermore, they may still be ill-equipped to tackle fundamental sustainability issues (Schlegelmilch, 2020). 'Sustainability science' challenges both the content and the method of the business school teaching practice: so there is a need for interdisciplinarity and pedagogical innovations (Brundiers, Wiek, & Redman, 2010), as well as a paradigm shift towards a transformative and holistic approach (Edwards et al., 2020). Although there is pressure from accreditation agencies to embed sustainability, there are no clear templates for the design and implementation (Slager et al., 2020), and most of the practical solutions are neither coherent nor institutionalized (Edwards et al., 2020). Among others, MacVaugh and Norton (2012) suggest that many business students are unaware of or not interested in these issues, there is a great deal of uncertainty, as well as ignorance about the meaning, boundaries, or applications of sustainability (Rashe & Gilbert, 2015). Furthermore, Maloni et al. (2021) argue that even if business schools make external commitments towards responsible management education integrating sustainability into education, actual pedagogical practices are decoupled from stated objectives. This decoupling raises questions about the effectiveness of such programmes in terms of developing responsible leaders (Maloni et al., 2021).

Taking into consideration the above-mentioned arguments about the potential role of business schools in promoting sustainability, in this paper we present empirical data and analysis related to their external communication about it in their educational content. In order to do so, we focus on how and what the top 100 business schools communicate about sustainability in their education-related texts, as well as investigate how their language-use related to sustainability is connected to the applied future-frames. The next section of the paper gives a detailed overview on our methodological approach.

3. Methodology

The external online communication of highly ranked business schools stands in the focus of this research project. To identify the leading business schools, we used the Times Higher Education (THE) World University Ranking List, which is one of the world-wide accepted and acknowledged ranking lists. According to our special focus on business education, we concentrated on the 'Business and economics' subject-based sub-list from The (2019) World lists (THE, 2019).

External communication in our research refers to website-texts that are visible to any visitor of the website, without downloadable content. Specifically, the corpus of our investigation is built up from the education-related contents of the HEIs' websites, which means any page of a school's website that is directly related to the educational programmes offered. Most sites had similar structure, where these texts were located under the "academics" main menu item. Detailed course descriptions or syllabi were not included, since these were almost always in the password protected area of sites. Accordingly, through this textual analysis we could not only capture the importance of sustainability-related references in external educational communication, but we were able to differentiate between groups of business schools based on their thematized content and language-use connected to this topic. In this way we were able to make inferences as to whether there is a strong commitment – at least on a communication level – toward sustainability and its different dimensions, or the topic is rather used as a communicational token without complex thematization and explicitly referred values.

This research strategy is in line with the approach that focuses on the performativity of constitutive organisational communication.

In this approach, organisational texts are understood as performing a function at the organisations as they "shape the stabilization and repetition of organizational activities" (Gond, Cabantous, Harding, & Learmonth, 2016: 14). So, while we could not observe the actual practice of teaching and learning at the highly ranked business schools, we could still make inferences about these activities insofar as we take their communication as one aspect of their practices.

3.1. Sample and data collection

We gathered the texts of our corpus from the website of each university's business school and economics department[1] (in the following: business schools) of the first 100 universities[2] on THE (2019) Business and Economics list. Specifically, those English language pages that present the business schools' education portfolio to the general public (i.e., BA, MA, PhD pages, general 'study' and 'academics' pages, introductory descriptions of all levels of studies). Texts had to be manually collected because of the highly diverse website structures. Collection was done simultaneously by three researchers after numerous consultations ensuring the mutual understanding of the data-collection principles. From a subsample of websites all three researchers collected the texts deemed to be relevant, then the texts were compared to validate the process and ensure agreement between the collectors. We imported the downloaded data into R for analysis. The final corpus of these educational texts contains about 1.2 M (1185,626) words after basic tokenization.

3.2. Analysis and interpretation

To provide a comprehensive and high-resolution picture on how business schools communicate sustainability and the future we used mixed-methods textual analysis. The most important advantage of this research strategy is that it could provide data with a global reach which can be analysed in a comparative manner. Furthermore, mixing quantitative textual data mining with qualitative analysis helped us to both cover and map a large amount textual data while maintain the sensemaking characteristics of the qualitative outlook.

In our analysis, we investigated the language-use of business schools related to sustainability through different lenses. At first, we performed a word-level examination, which can be an indicator of the general importance of a given topic and phenomenon. Accordingly, we examined the appearance of sustainability and four other related expressions from the literature (responsibility, ethical, moral, stakeholder) in the gathered texts. Next, we focused our attention on the referred content of sustainability, that is, the expressions which have a direct connection to sustainability and its inflected forms (so called bigrams). This could reveal the indicated content and connotations of a given topic, here, the different thematised dimensions of sustainability. As for the topic of 'future', we followed a similar sequence to understand its linguistic and semantic role in the corpus.

In order to follow a data-driven approach in our analysis, we utilised cluster analysis in such a way that the basis of the clusters were specific and discernible patterns of language-use in relation to sustainability. This analytical strategy allowed us to divide the top 100 business schools into three distinct groups and to examine the groups institutional characteristics. Furthermore, we were able to detect differences between these groups in their future-related language-use, as well. This way we were able to connect the identification with sustainability (or its lack thereof) and the characteristics related to being future-oriented in the educational external communication of the highly ranked business schools.

4. Results

4.1. Word-level analysis of the five issues

In order to get a general picture of the five main sustainability-related issues, we started with a word-level analysis, looking at the incidence of keywords (and their infected forms) for these issues in the educational texts of business schools. As can be seen in Table 1, 'sustainability' and 'responsibility' are the most frequently cited issues among the five. However, in both cases there are a relatively high number of institutions which do not use these expressions.

The frequency of 'ethics' is close to that of 'responsibility', which suggests ethical issues in business are widely covered, while it is obvious that the issue of 'stakeholders' is less important, and 'moral' seems to be almost missing from the highly ranked business schools' education program descriptions. Since the term sustainability is the most widespread among these five terms, that is, it has the highest word-frequency, we decided to zoom in on the sustainability-related language use in order to gain a deeper understanding.

[1] This special addition of economics departments is based on the experience, that most of the cases the business school incorporated the marketing, finance, accounting, etc departments, but the economics department belonged to another unit. Nonetheless, based on the category-name of THE (business and economics) and our wider understanding of 'business education' which is the focus of the funding project (see Footnote1), we decided to search and collect this information as well.

[2] The London School of Economics and Political Science was excluded from the collection for this very reason. Since it is an economics focused institution, their website mostly concentrates on economic education, as well as several of their departments' sites. Instead of downloading excessive amounts of text from the various departments' webpages, and to avoid creating an unbalanced amount of content for this university compared to the rest of the sample, we chose to exclude the institution to avoid this inconsistency.

Table 1
Presence of the five themes in the corpus.

Issue (words and their related forms)	Word-frequency	No. of HEIs mentioning (n = 100)
Responsibility	376	85
Sustainability	567	79
Ethics	399	76
Stakeholders	247	61
Moral	24	10

4.2. Sustainability-related language use

In the next phase of our examination, we focused on the language-use related to 'sustainability'. For this, we categorized mentions of sustainability (as bigrams with other words) according to which area of sustainability they were referring to. As Table 2 illustrates, among these bigrams, four sustainability aspects were identifiable: environmental, economic, social, and general (i.e., sustainability in a broad or strong sense). The categorization was not based on the bigrams alone, but their surrounding context as well, and category labels were checked by at least two researchers to screen misidentification (e.g., the phrase "sustainable impact" was omitted as its meaning, according to its context, is unrelated to our inquiry).

Looking at the different close collocations of sustainability, the prominence of the economic dimension compared to the environmental and social dimensions of sustainability is quite salient. Another interesting result is the widespread usage of very generic sustainability-related expressions. This is even more articulated if we look at the frequency of these bigrams in the corpus texts (Fig. 1).

After careful selection of sustainability-related expressions, we found that only 60 HEIs used these at least in some relevant generic way. However, some of these used expressions of more than a single type (thus the counts in Fig. 1 do not add up to either 60 or 100).

4.3. Institutional language-use strategies related to 'sustainability'

Looking at the relative importance of sustainability in the texts by comparing the number of mentions from the aspect of the total volume of text, we found that there are patterns in this relative importance. A hierarchical cluster analysis by the ratio of aspects of sustainability-related language-use revealed three distinct groups of HEIs, as demonstrated on Fig. 2 with the first two principal components of ratios. We included all HEIs, since those that do not mention sustainability may be similar to those where the ratio of mentions is negligible.

Correlations with the type-ratios showed that PC1 is associated with the economic and the unspecified type, while PC2 is also close to the environment type (see Appendix 1.) Table 3 explicitly shows the percentage of institutions in each group mentioning the given aspects of sustainability.

HEIs in the bottom middle of Fig. 2 (marked as group 0) never or almost never mention sustainability, the top right group (group 1) mentions a wider range of sustainability aspects (with general expression being dominant), while the top left group (group 2) focuses of economic sustainability.

4.4. Institutional characteristics of groups

The three groups identified show differences in average ranks (based on THE World University Ranking), and the rank distributions are also different (Table 4). The non-parametric Mann-Whitney rank test for comparing ranks of groups shows a significant difference between group 1 and group 2 (W = 188, the Bonferroni-corrected p-value is 0.014), but not the other pairings. The mean rank of the HEIs in the economic sustainability group (group 2) is 35.4, which means, that it is the highest ranked group. Furthermore, if we look at the distribution of the ranks within this group (see Appendix 3), it is clear, that the top institutions are overrepresented here. In second

Table 2
Four aspects of sustainability-related bigrams in the corpus.

Environmental dimension	Economic dimension	Social dimension	General expressions
environmental sustainability	sustainable business	healthcare sustainability	sustainable development
sustainable energy	business sustainability	social sustainability	sustainability challenges
environment sustainability	sustainable finance		sustainability issues
	sustainable growth		sustainable change
	sustainable investing		management sustainability
	sustainable enterprise		corporate sustainability
	sustainable entrepreneurship		sustainable value
	sustainable investment		sustainable solutions
	sustainability banking		sustainable future
	profit sustainability		sustainability reporting
	development sustainability		sustainability considerations
	sustainable strategy		sustainability studies
			act sustainably
			global sustainability

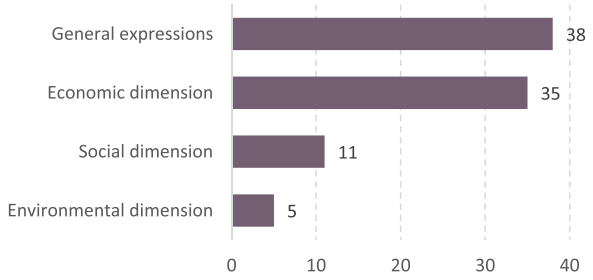

Fig. 1. Number of institutions mentioning sustainability – by the four aspects.

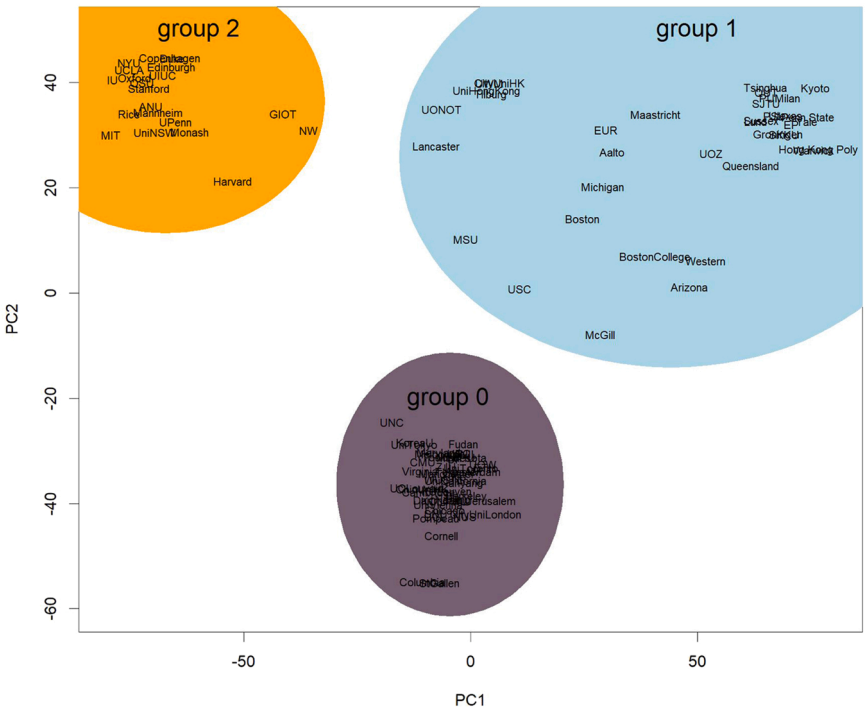

Fig. 2. Relative position of HEIs based on sustainability-related language use (n = 100).

Table 3
Distribution of sustainability-related bigrams in the three institutional groups (%).

	Environmental dimension	Economic dimension	Social dimension	General expressions
group 0	6.7%	2.2%	4.4%	0.0%
group 1	5.7%	40.0%	22.9%	100.0%
group 2	0.0%	100.0%	5.0%	15.0%
All	*5.0%*	*35.0%*	*11.0%*	*38.0%*

Table 4
The number and mean rank of institutions by groups.

Group	No. of HEIs	Mean rank
group 0	45	51.8
group 1	35	59.5
group 2	20	35.4

place stands group 0, which are the schools that did not (or very rarely) use sustainability-expressions on their educational webpages. This group is much more diverse regarding its members' ranks. There are institutions in this group from both the top and the bottom of THE rankings list. The group which addresses sustainability in a rather general manner (group 1) has a mean rank of 59.5 (signifying the worst position in the ranking). Nevertheless, this is not significantly worse than group 0, and school ranks are less variable than in that group.

Another characteristic difference between the groups is related to the regional composition of their HEIs, as seen in Table 5. Group 0 has the same composition as the sample in general, which means it is not content-specific concerning which HEIs mention sustainability issues and which do not. Western Europe is overrepresented in group 1, as schools mentioning predominantly general sustainability issues are European with a higher probability than other groups. In group 2, North American schools have a higher, and East Asian schools have a lower representation compared to the general composition. This also means that none of the Asian HEIs are in group 2, so if these schools mention sustainability issues at all, it will not be in an economy focused way.

4.5. Thematization of future within the three group

The three institutional groups are not only distinct based on their sustainability-related language use and institutional characteristics, but they are different in how they thematize 'future' in their educational texts as well. To illustrate this, we have looked at all bigrams containing some variant of the word 'future' separately for the three groups, then selected those bigrams that were both relatively frequent in the given group and at the same time also unique to the group (that is, they appeared only in the given group and were absent in the two others). Based on these group-specific bigrams, we are able to describe each group's specific relation to the future apart from the general and most common characteristics.

If we look at those future-related expressions which appeared only at group 0 (almost no mention of sustainability), we could see that they suggest an active but individual attitude toward the future, focusing on training students to become successful future business leaders (Table 6). This is in line with Clegg's (2010) study that the future is often understood in an individualistic sense in relation to the employability agenda and devoid of any broader sense of responsibility.

Examining the future-related bigrams of group 1, where HEIs mainly use general sustainability expressions (group 1), we can see that, compared the previous group, the verbs convey less activity, and suggest a more passive attitude toward the future (Table 7). However, some of the bigrams have a clear positive sentiment, while the connotations of 'future' are less obviously economic and some aspects of the ethical orientation of the future (Adam, 2008) seem to be present (e.g., future generations or sustainable future).

The third group, where members explicitly refer to the economic aspects of sustainability (group 2), is again distinct in its future-related language-use (Table 8). This group's attitude can be described as active again, and here – possibly in connection with the economic focus on sustainability – future also has an economic connotation. However, it is also worth mentioning that these expressions do not specifically refer to individuals as was the case for group 0. At the same time, here we can find expressions which refer to an open and empty future (Adam, 2010) which can be formed in the present (e.g., impact/invent/ develop/advance/vision future).

4.6. Sustainability related words and themes in the three groups

Based on the literature, we were confident that the textual representation of sustainability issues must include some form of the word 'sustainability', but to make sure other potential occurrences of sustainability using different keywords did not remain undetected, we used a word embedding method (Levy, Goldberg, & Dagan, 2015). We split the corpus into two groups, one group formed of schools mentioning sustainability explicitly, and the other group of schools not using this word (or some inflected form), and then constructed a PPMI (Positive Pointwise Mutual Information) word embedding separately for both groups using the same 1200 words as dimensions of the embedding (seen in Fig. 3). For the sustainability group, the closest (in cosine similarity) words to 'sustainability' were thus given, allowing us to map the semantic neighbourhood of the term. For the other group, it was possible – using the common dimensions – to search for the closest words to the hypothetical vector which should have been the word vector for 'sustainability', had it been the same as in the other group. If 'sustainability' has functional equivalents, then these should be located near this point in the semantic space. We found no sign of such words, furthermore the neighbouring words in both groups were highly similar in their meanings and themes. So, we were able to conclude that those HEIs that do not use the word 'sustainability' do not substitute it with some other functionally equivalent terms.

The first two principal component dimensions shown in Fig. 3 only serve for illustrative purposes. To generate these diagrams, cosine word similarities were calculated in the 1200-dimensional embedding semantic space (see Appendix 2).

Listing the relative frequency of the four sustainability related themes (responsibility, ethics, stakeholder, moral) for the three groups (Table 9) corroborated the results from the word embeddings. Some HEIs might have used these themes instead of

Table 5
Distribution of HEIs by continents for each group.

Group	Australia	East Asia	North America	Western Europe	*Total*
group 0	2%	24%	42%	31%	*100%*
group 1	6%	20%	34%	40%	*100%*
group 2	15%	0%	65%	20%	*100%*
Total	*6%*	*18%*	*44%*	*32%*	*100%*

Table 6
Unique bigrams for group 0.

Future-related bigrams	Frequency	No. of HEIs
future global	8	6
future job	7	2
create future	6	3
company's future	6	3
transform future	6	3
future executives	6	5
future financial	5	3
future management	5	2
embracing future	5	2
training future	4	4
future ready	4	2
challenges future	4	1

Table 7
Unique bigrams for group 1.

Future-related bigrams	Frequency	No. of HEIs
future generations	5	5
bright future	5	3
future trends	4	3
sustainable future	4	4
future oriented	4	2
better future	4	3
preparation future	3	3
future state	3	2
understand future	3	2

Table 8
Unique bigrams for group 2.

Future-related bigrams	Frequency	No. of HEIs
impact future	5	3
future organization	5	3
invent future	4	1
develop future	4	4
future finance	4	3
advance future	4	2
prepares future	4	4
future marketing	4	1
vision future	3	3

sustainability to discuss issues with a similar content, but educational texts do not suggest this being the case.

The above analyses indicate that if HEIs discuss sustainability they do explicitly include the word (or some of its inflected forms), thus restricting our inquiry by focusing on this keyword did not impede the robustness of our results.

5. Discussion and concluding remarks

The final part of our paper aims to both connect the layers of our manifold empirical analysis and embed the results into a broader societal context. The structure of the following section is in line with this aim: firstly, it summarises and interprets our results to provide coherent interpretative patterns, then it offers explanations as to why these patterns might characterise the online communication of highly ranked business schools.

5.1. Connecting the dots: interpreting the results

The results of our analysis of the business schools' online communication point to the fact that these institutions have a rather specific and unexpected relationship with the topic of sustainability. Some of the institutions simply do not communicate about sustainability in their texts on education. This is strange given the importance of the issue also from a purely economic perspective. Other institutions do attempt to communicate about sustainability in their education-related contents. However, it has to be mentioned that they frame sustainability in a strategic manner, so the area of possible responsibilities is narrowed down to such a degree that it is either meaningless or understood in the economic dimension only. The following paragraphs elaborate these points in more detail.

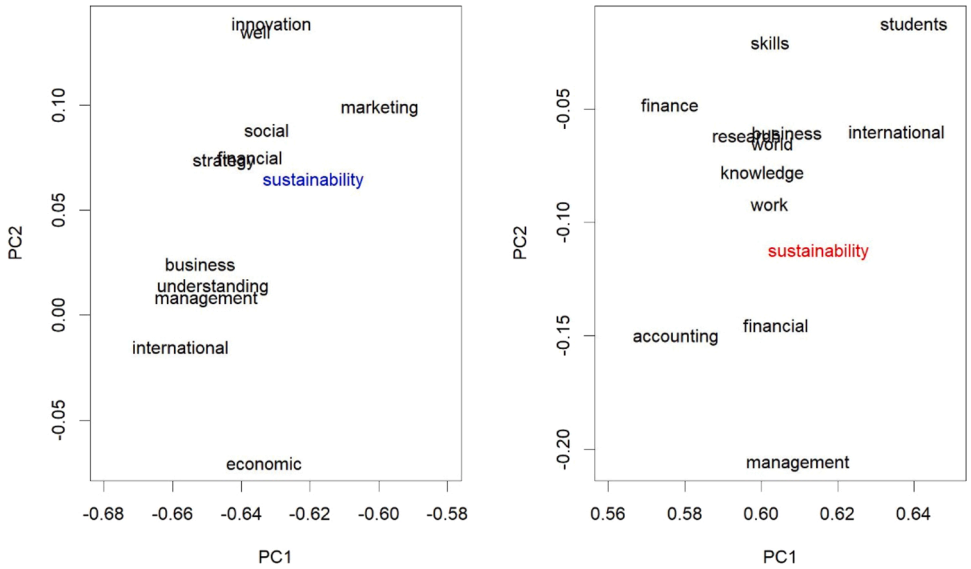

Fig. 3. Word-embeddings for words close to sustainability or its estimated position.

Table 9
Theme probabilities by groups. A theme is given by its listed keyword and its related forms.

Word	*group 0*	*group 1*	*group 2*
responsibility	0.053%	0.046%	0.057%
Ethics	0.055%	0.057%	0.049%
stakeholder	0.024%	0.047%	0.027%
Moral	0.003%	0.003%	0.004%

As for the first cluster of institutions (Group 0), we could not find the term sustainability in the education-related online communication. This apparent lack was so surprising that we presupposed that there were alternative expressions, or other ways of talking about sustainability without actually using the word itself. Using computational textual analysis techniques, we could pinpoint the location where sustainability should be in the contents of these business schools, given the connotational space around the term in other texts. The result of this analysis showed no other terms substituting sustainability. In other words, a significant proportion of the highly ranked business schools simply do not communicate about sustainability in their external teaching & learning contents. Of course, given the nature of our research focusing on publicly available textual data, we cannot conclude that this reflects their actual educational practices. Nevertheless, we can state that they do not find this issue important enough to mention and/or emphasise it. Since these institutions are at the very top of the hierarchy of business schools, they might also serve as points of reference for other institutions by providing organisational models for them. This lack of expressed responsibility towards the present and future is rather disconcerting given the impact these institutions might have directly (serving as models for other institutions) or indirectly (forming business leaders for the global economy) on the global society and economy.

There is another cluster (Group 2) containing those business schools that do use the term sustainability, yet mainly emphasize the economic dimension. We can identify three subthemes in relation to this economic viewpoint. Business schools stress the general sustainability of companies (business, enterprises etc), or they focus on sustainable ways of maintaining growth or of developing businesses. Lastly, sustainability appears as a purely financial issue connected to expressions such as profit, investment and finance. Based on their online communication, it seems that these institutions are closer to the weak sustainability viewpoint. Omitting aspects of social and environmental sustainability gives the impression that economic sustainability is the most important dimension and companies (and future business leaders) should first and foremost focus on economic growth. This lack, i.e., the lack of social and environmental aspects, is a rather salient feature of this cluster, which leads us to the conclusion that these business schools still conceptualise sustainability in a narrow sense, and it is very likely that they educate future business leaders towards this direction.

The last cluster (Group 1) is very interesting because the fuzziness of the sustainability in their online communication. While these institutions do communicate about sustainability, they utilise the term in an unspecified and ambiguous manner. Sustainability is usually connected to general expressions (such as issue, value, solution, change) which are flexible and open in the sense that they can change their meaning in different contexts. Because of this we took extra care to delineate the broader connotational context in which sustainability appears in this cluster. Having a closer look at the semantic context of sustainability (through the analysis of textual embeddedness), it seems that that issues, which are closely connected to sustainability also emphasise the economic dimension, rather than social or environmental issues. In this way, sustainability becomes a more-or-less empty token that business schools can utilise in

their organisational marketing activities. These institutions are well aware of the expectations of stakeholders and are willing to communicate about sustainability in their teaching & learning contents. However, the way they communicate about it does not move beyond a superficial and general level, often doing little more than sugar-coating a predominantly economic perspective.

These results, on the one hand, show that a significant proportion of highly ranked business schools are well aware of the need to communicate *something* about sustainability maybe due to external pressures (Slager et al., 2020), even if they do so in a strategic and less substantive manner (Maloni et al., 2021). Nevertheless, our data is also in line with those previous research findings highlighting that systematic integration of sustainability is still missing at the majority of institutions (Daub et al., 2020; Schlegelmilch, 2020).

5.2. Broader societal implications

There are two possible interpretations of the patterns discussed above. One is more 'understanding' towards business schools as institutions attempting to deal with the challenge of numerous and sometimes conflicting tasks and goals. The other is more critical, stressing that business schools are contributing to the maintenance of a neo-liberal worldview and to the continuation of a form of global managerial capitalism which is detrimental to social and environmental sustainability.

Firstly, the less critical outlook can acknowledge that business schools are 'open institutions' (Scott, 2003) and, as such, attempt to meet the expectations of their stakeholders. Since they have many different stakeholders who have diverse interests, these expectations often contradict each other and simultaneously push them into various directions. This phenomenon is called mission overload (Brennan & Teichler, 2008) and often raised in relation to HEIs in general. Mission overload can be especially severe in relation to business schools which are expected to be more open and responsive to market changes, as well as being practice-oriented while conducting research leading to prestigious scientific achievements. Because of this overload, they attempt to communicate across a wide range of issues, including sustainability. So, in this understanding, the relative lack of sustainability does not necessarily show that business schools do not deem this issue important. Rather, it points to the fact that it competes with so many other topics that its signal is lost in the overall noise.

Secondly, if we give a more critical reading of the results of our paper, we can claim that there is no proof whatsoever that business schools attempt to stray from the path of the status quo. Their external communications show that they continue and strengthen a neo-liberal worldview and only incorporate those aspects of sustainability which are compatible with this perspective. This interpretation is in line with the conclusion of several authors (see below) writing about the interrelation of topics such as education, sustainability and futures.

While challenge of numerous and sometimes conflicting tasks and goals can have the capacity to positively contribute to a more sustainable world, several authors emphasise that presently it mainly promotes a consumerist, neo-liberal worldview (Gayá & Brydon-Miller, 2017). Instead of opening up new avenues of thinking and looking for alternatives for present conditions, (higher) education often retains a business-as-usual, unproblematic view of the future (Hicks, 2012). Amsler and Facer (2017) also direct our attention to a major shift towards a neoliberal understanding of education. In this form of education, the economization of public and individual lives is at the forefront, while discussions about the good life and ideal ways to (re)organise society fade into the background.

Analysing sustainability-related declarations in HE, Sylvestre et al. (2013) also document a shift towards a neoliberal viewpoint resulting in unifying concept of sustainability. According to the authors, this shift can be explained by changes in funding structures, that is, moving away from public to a more market-based operation in higher education. A corporatized form of higher education is more likely to prioritise the economic understanding of sustainability while devaluing other aspects. In consequence, universities as a space of free inquiry and arena of competing ideas are less prominent in these declarations. Instead, they present a more technocratic, rational organisational template with the primary role of preparing the future workforce (Sylvestre et al., 2013).

Focusing on these two interpretations, it is important to see that there may also be a third one connecting these. We can argue that while there is mission overload and business schools attempt to be responsive to several parties, there are stakeholders whose interests are more likely to be reflected in their organisational communication. These stakeholders are the present and prospective students themselves, as well as the global companies who serve as the primary labour market for the graduates. Since business schools have a tendency to focus on these stakeholders, they stress those issues in their external communication which are connected to employability in a global marketplace, as well as maximising salary. Because of this, as Pfeffer and Fong (2004) argues that business schools in education generally promote individual strategies for career enhancement, while downplaying the importance of larger organisational and social issues. Since sustainability is among the latter issues, it is also squeezed out by self-promoting issues.

The importance of the individual level is also reflected in the differences between the future framing of different institutional clusters. As mentioned above, although Group 0 does not mention sustainability at all, it is mostly focused on individual futures through active expressions. These expressions are more likely related to an individual self-promoting futures frame (Clegg, 2010) lacking the social and more responsible aspects of the issue. Group 1 and Group 2, in which sustainability appears in some form, are less individualistic in their futures frames. In Group 2, the usage of the future expression points to an economic interpretation, which mostly corresponds to an open and empty future conception ready to be exploited in the present (Adam, 2010). Lastly, Group 1 is where ethical and responsible framing of the future (Adam, 2008) appear in the form of an inter-generational aspect. So, while this statement needs further research, we can cautiously claim the lack of sustainability correlates with individual futures devoid of broader responsibility, while the presence of it makes it more likely that a collective and, in some cases, more responsible and ethical orientation towards the future appear.

This might give us a flicker of hope that, with the strengthening of the issue of sustainability, business schools are more likely to turn towards a different kind of management and leadership ideal which takes on the responsibility for wider organisational and social

issues in the future. Moreover, due to the very openness and market-orientation of business schools, the issue of sustainability in education can gain momentum when it appears as an expectation from the other main stakeholder, i.e., from global companies. Some argue that might be the case, since companies push the sustainability agenda, while business schools are trying to catch up (Barber et al., 2014). So, while the picture now is relatively bleak, there is some hope that this might change.

Declarations of interest

None.

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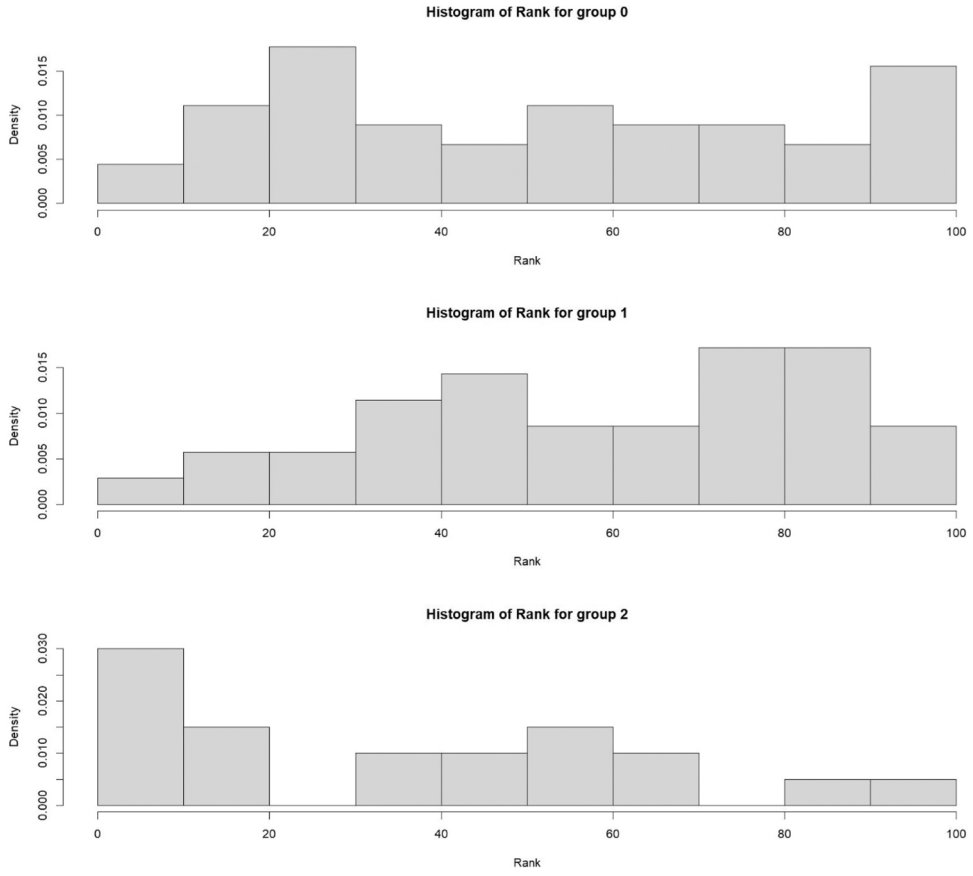
Appendix 1. Correlations of the first two principal components with the original four variables (ratios of mentions of certain aspects of sustainability)

Correlations	PC1	PC2	Environmental dimension	Economic dimension	Social dimension	General expressions
PC1	1	0	0016	-0762	0062	0817
PC2	0	1	-0236	0646	-0,08	0576
Environmental dimension	0016	-0236	1	-0125	-0059	-0091
Economic dimension	-0762	0646	-0125	1	-0085	-0,25
Social dimension	0062	-0,08	-0059	-0085	1	0005
General expressions	0817	0576	-0091	-0,25	0005	1

Appendix 2. Words closest to sustainability or its estimated position

Sustainability group		Non-sustainability group	
Word	Cosine similarity	Word	Cosine similarity
Management	0743	management	0,7162
Understanding	0737	business	0,7104
Business	0733	financial	0,6962
Social	0732	research	0,6934
Economic	0731	students	0,6850
Marketing	0730	international	0,6817
Well	0730	finance	0,6784
Financial	0729	work	0,6732
International	0727	skills	0,6690
Innovation	0727	accounting	0,6684
Strategy	0724	knowledge	0,6682
Industry	0723	world	0,6671

Appendix 3. Histograms showing the distribution of ranks for the three sustainability groups



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