

Sustainability Development in Educational Institutions

Subjects: **Others**

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Sustainable development (SD) addresses the biggest challenges facing humanity in the 21st century. Public sector organizations, primarily higher education institutions (HEIs), are facing greater levels of responsibility since adopting and committing to the Agenda 2030 for Sustainable Development (SD) and its 17 Sustainable Development Goals (SDGs). HEIs are expected to provide guidance for various stakeholders on this matter, but also to implement this agenda and the SDGs in their institutions.

sustainability

sustainable development

higher education institutions

literature review

1. Introduction

The crucial role that higher education institutions (HEIs) and education play in contributing to sustainability and SD was formally and internationally recognized in 1972 at the UN Conference on the Human Environment held in Stockholm ^{[1][2][3][4][5]}. Since then, a significant number of HEI declarations, charters, and partnerships have been developed and designed to foster environmental education (EE), SD, and education for sustainable development (ESD). Again, a number of HEIs joined alliances and signed commitments and declarations to integrate sustainability and SD in all aspects of their organizations ^{[1][3][5][6][7]}. In spite of a number of SD initiatives and an increasing number of HEIs becoming engaged with SD ^{[3][5][6]}, HEIs were still lagging with regard to their contributions to sustainability and SD ^{[3][8]}.

In September 2000, the Millennium Declaration was signed by the United Nations, which included eight Millennium Development Goals (MDGs). The MDGs were subsequently included in various stages of education ^[9]. After the World Summit on Sustainable Development held in 2002 in Johannesburg and during the UN Decade of Education for Sustainable Development ((UN DESD, 2005), which aimed to integrate the principles of SD into all aspects of HEIs ^{[4][10]}, the engagement of HEIs in sustainability and SD challenges worldwide increased ^[11]. The relevance of HEIs for SD was reaffirmed at the United Nations' Rio + 20 conference held in Rio de Janeiro in 2012, which resulted in a political outcome document and the continuous implementation of the United Nations Global Action Programme on ESD ^[6].

2. Current Insights

Sustainability and SD in HEIs is steadily increasing. The challenges that sustainability and SD address ^[1], as well as HEIs' significant role regarding these challenges, are globally recognized ^{[1][2][3][6][11][7][8][9][13]}. However, taking

into account the regional context, this literature review shows that most articles targeted HEIs in North America (USA and Canada), South America (Brazil), Asia-Pacific (Australia and China), Europe (Germany, Spain, Portugal, Sweden, and Belgium), and South Africa.

Previous literature recognized the positive influence of internal and external HEI stakeholders on their progress towards SD [1][3][11][8], yet, in this entry, a lack of consensus on whether and how these stakeholders support the effective integration of SD in HEIs was identified [15][16][17][18].

This entry suggested that the field of sustainability and SD in HEIs can be categorized according to the seven elements of an HEI system identified in the available literature [3][5], i.e., institutional framework, campus operations, education, research, outreach and collaboration, SD through on-campus experiences, and assessment and reporting. The results of the final sample analysis show that the institutional framework, research, and assessment and reporting in the context of sustainability and SD in HEIs were the most heavily investigated categories during the study period, although education and research are commonly referred to as core areas and fields of action in HEIs [1][2][3][6][7][8][9][13][19].

In the category “institutional framework,” the articles mostly addressed organizational change to support sustainability and SD in HEIs, as well as how to apply and integrate them. The authors of these papers suggested that more in-depth investigations, empirical studies, and assessments of sustainability drivers and barriers and frameworks focusing on aspects of change are needed [20][21][22][23]. They also indicated that the stakeholders’ perceptions of each barrier require further study to derive the impacts of those perceptions and to identify and test ways to overcome barriers [20][24][25]. Future research involving a variety of stakeholders and analyses of HEI plans, policies, and strategies was proposed to gain deeper insights into sustainability implementation, best practices, and recommendations [5][26][27][28][29][30][31][32][33].

Communication of sustainability efforts was identified as a key to the effective management of SD implementation in HEIs [34], and SD policies were recognized as valuable tools for this communication [35]. However, a gap regarding SD policies and the aspects they address was identified. The aspects addressed in these policies were not equally emphasized, most addressed was campus sustainability, and research and education were mostly neglected [26]. A similar gap was identified when analyzing available tools, methods, frameworks and approaches [36], and HEIs’ strategic plans [33]. This implies that contrary to previous literature [6], HEIs’ impacts in the field of sustainability are not fully recognized [4].

As mentioned earlier, most SD policies addressed campus sustainability [26], but a significantly lower number of articles in this category indicated a lack of consensus between the practice and the literature. The articles in the category “campus operations” mainly addressed the EMS and its implementation process [37][38][39][40][41]. Further research, especially in the form of case studies, is needed in this category to identify and share best practices [38][42][43][44][45][46][47][48].

Studies in the category “education” examined curricular innovations and provided reviews of SD integration and the development of sustainability-focused courses and programs, whereas articles in the category “research” mostly reported research on ESD. Although much literature has been published on ESD, research on how the HEIs engage with the SDGs is lacking ^[49]. Further research was also proposed to assess the level of sustainability contribution, the competences covered and developed, and the pedagogical approaches used in one or more HEIs at all levels of education ^{[50][51]}.

Furthermore, this entry revealed a lack of indicators to assess and measure the integration of sustainability and SD in education and research ^{[52][53][54][55][56][57][58][59][60][61][62][63][64][65][66][50][67][68][69][70]}, as well as in SD through on-campus experiences ^{[71][72]}.

The category “outreach and collaboration” included studies that examined sustainability-oriented HEI networks as well as networks between HEIs and communities or local or regional institutions. Sustainability-oriented HEI networks play an important role in the sustainability transition ^{[10][73][74][75][76][77]}, yet fewer articles were assigned to this category. Additionally, no comparative assessment of different HEI networks has been conducted ^{[10][73][74][75][76][77]}.

The review of the articles from the category “assessment and reporting” implied that SATs may not fit the local needs, and developing a tailored model can be more advantageous for a country or HEI ^{[78][79]}. These implications are aligned with the implications from the category “institutional framework,” namely, organizational management tools should be adapted to HEIs’ unique mission and impacts ^{[80][81]}.

The analysis of the articles from the category “assessment and reporting” led to similar implications as stated before: HEIs’ sustainability impacts are not fully recognized, and accordingly, the sustainability progress of HEIs is not clearly measurable ^{[6][13][67][68][69][70]}.

SATs neglect the impacts that HEIs have outside their organizations, mostly focusing on operations ^{[6][13][67][68][69][70]}. A similar gap as before was also identified here, namely, one of the most urgent research topics proposed was the selection and development of indicators to measure the sustainability performance of HEIs, especially regarding research and teaching activities ^[19].

Researchers need more information about how to properly assess HEIs’ contribution to sustainability; this lack of knowledge represents a clear barrier to SR ^[82].

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