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Cover Page Footnote

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MOOC for Sustainability: Cultivating Sustainability Leadership in Campus Management Through Open Online Education

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Abstract

Higher education institutions (HEIs) serve as key hubs of education and research while also acting as influential societal agents in advancing sustainability. As HEIs increasingly integrate sustainability into their education, research, and operations, their role as sustainability leaders continues to evolve. This article explores how HEIs can cultivate sustainability leadership and institutional agency through open, digital education formats within the integrative framework of campus sustainability. Drawing from a case study on the development of the *MOOC for Sustainability: Empowering Global Campuses* course coordinated by the Finnish University Network for Asian Studies (Asianet), it examines how sustainability leadership education can be embedded into institutional practices to foster both individual leadership capacities and broader organizational transformation. The study highlights how MOOCs, as scalable learning tools, can bridge sustainability leadership education with campus operations, enabling HEIs to align learning with action. It discusses the importance of strategic leadership competencies, stakeholder engagement, and systems thinking in sustainability leadership development. Additionally, the article reflects critically on the challenges of MOOCs, including learner engagement, impact assessment, and institutional integration. By emphasizing the role of faculty and staff alongside students and formal leaders, this research contributes to the discourse on sustainability leadership and organizational change in HEIs.

Key terms

campus sustainability; sustainability leadership; online learning; SDG 4; SDG 17; sustainability education; massive open online course (MOOC)

Introduction

Higher education institutions (HEIs) are both key hubs of education and research and influential societal actors. The role of HEIs in building a sustainable society has been widely acknowledged and has received increasing attention since the release of the Brundtland Committee report entitled *Our Common Future* (WCED, 1987; Wittneben et al., 2012). More recently, beyond implementing sustainability within their own operations, HEIs have been transitioning toward advancing sustainability education, research, and innovation through engagements with various sectors of society (Lundvall & Johnson, 1994; Peer & Stoeglehner, 2013; SDSN, 2020). These developments have shaped both the expectations placed upon HEIs and their potential to assert their role as institutional sustainability leaders and educators of future leaders. This article explores how sustainability leadership and institutional agency can be cultivated in HEIs through open, digital education formats within the integrative framework of campus sustainability. Drawing from a case study on the development of the massive open online course (MOOC) *Sustainability: Empowering Global Campuses*,¹ this article examines how HEIs

can embed sustainability leadership education into institutional practices.

For business organizations, the triple bottom line (people, planet, profit) has come to define the foundation of sustainable business (Elkington, 1999; Loviscek, 2020). Similarly, HEIs must balance social, environmental, and economic sustainability across all their operations. Leadership development is essential for HEIs' organizational sustainability management, as it guides institutional growth, drives change, and influences long-term organizational outcomes (Aung & Hallinger, 2023; Iqbal & Piwowar-Sulej, 2022). In turn, university education plays a crucial role in developing sustainable leadership capabilities, particularly when sustainability is embedded in campus operations and shared strategic visions (Leal Filho et al., 2015; Sanches et al., 2023).

Sustainability leadership is thus embedded in organizational management practices and change, making it an essential and timely focus in management research. Reviews of sustainability leadership across different contexts, from business organizations to HEIs, highlight its diverse conceptualizations. Central features of sustainability leadership include the ability to create or steward change, share responsibility, consider

¹ Available at <https://www.asianet.fi/courses/free-moocs/empowering-global-campuses/>. The course is open until the end of 2026.

stakeholders within and beyond the institution, and engage others in acting toward shared visions (Aung & Hallinger, 2023; Boeske, 2023; Eustachio et al., 2023; Liao, 2022; Yabut et al., 2024). However, implementing sustainability leadership can be challenging due to its varied characteristics and conceptualizations (Metcalf & Benn, 2013; Sajjad et al., 2024).

Therefore, developing tools and strategies that support the cultivation of sustainability leadership, while recognizing its holistic and complex nature, is increasingly important in HEIs and beyond (Leal Filho et al., 2020; Yabut et al., 2024). Prior experiences in campus management have demonstrated significant potential for mutually beneficial sustainability learning outcomes when academics and campus operations are combined under the overarching theme of campus sustainability (Savanick et al., 2008; Warwick, 2016). Despite these advancements, however, a growing need remains for further research on sustainability leadership in HEI organizational change management and how to operationalize sustainability leadership effectively in educational practice (Hajdukiewicz & Pera, 2020; Rieg et al., 2021). Sustainability leadership development efforts have often focused either on students or formal organizational leaders, frequently neglecting the important “middle-ground” of HEIs’ faculty and staff (Brinkhurst et al., 2011). Furthermore, ensuring inclusivity in sustainability leadership education remains a critical area for further exploration.

This article examines how sustainability leadership and campus sustainability intersect within the development and structure of the *MOOC for Sustainability: Empowering Global Campuses* course. For over a decade, a wide array of MOOCs has focused on sustainability, addressing its environmental, economic, and social dimensions as well as core content areas such as climate change, energy, and natural resource management (Zhan et al., 2015). While MOOCs are used for leadership training (Headrick & McElravy, 2022), MOOCs that emphasize sustainability leadership capacity-building have remained limited or have concentrated primarily on climate leadership (Zint et al., 2023). This article highlights a broader concept of sustainability leadership that goes beyond carbon emissions. It introduces a holistic approach to sustainability leadership, grounded in context-sensitive strategic planning and engagement capabilities, enabling learners to tackle complex issues such as biodiversity and socio-ecological sustainability.

The article argues that embedding sustainability leadership education within the integrative framework of campus sustainability enables HEIs to develop

individual leadership capacities while strengthening their institutional sustainability agency through open online education formats. The article first discusses sustainability leadership and campus sustainability. Next, it introduces MOOCs as a scalable tool for sustainability leadership education. The third section analyzes how the MOOC develops future sustainability champions and what specific leadership capacities it fosters. It is not the purpose of this article to engage in theoretical discussions on any single leadership model; rather, it is to explore what types of sustainability leadership capacities can be cultivated through open online education within the integrative framework of campus sustainability. Finally, the potential and challenges of the MOOC in campus sustainability and leadership development are critically examined. Thus, this article provides insights into both the conceptual discussion on campus sustainability and sustainability leadership and the operationalization of sustainability leadership in HEIs through the less-understood engagement of faculty and staff.

Campus Sustainability: Leadership in Action

Leadership is central to organizational management and change in business and beyond. Moreover, organizations are embedded in broader systemic, societal, and planetary relationships, necessitating the investigation of sustainability agency beyond intra-organizational management (Fry & Egel, 2021). The literature on sustainability leadership and its definitions is diverse. Various terms, such as sustainability leadership, sustainable leadership, and environmental leadership, are used to describe leadership that promotes sustainability. For the sake of simplicity, this article uses the term sustainability leadership but focuses on practices and capacities rather than on static personal traits or leadership positions. Hence, sustainability leadership is perceived as organic and evolving, denoting both an interactional practice and the ability to lead toward or for sustainability (Boeske, 2023; McKim & Goodwin, 2021).

Due to the wicked and complex nature of sustainability challenges, existing and sometimes conflicting leadership models alone are insufficient for conceptualizing sustainability leadership (Metcalf & Benn, 2013; Shiel, 2013). Comprehensive reviews of sustainability leadership highlight several key characteristics. Important features include shared social and environmental responsibility, moral and ethical behavior, organizational resilience, and the role of organizational culture in sustainability

management. These aspects connect to the most central feature of sustainability leadership identified in the literature—change agency in systems and organizations (Boeske, 2023; Eustachio et al., 2023; Liao, 2022; Yabut et al., 2024).

While sustainability leadership has been analyzed most often in the corporate context, the complex nature of sustainability has led to its increasing examination in other organizations, such as HEIs. Prior research has discussed the dual role of HEIs as both sustainability educators and agents, primarily through two perspectives: an organizational management perspective, which focuses on staff as sustainability leaders, and an educational perspective, including the education of future leaders and the pedagogical strategies used to train them (Eustachio et al., 2023). Thus, on one hand, attention has been paid to leadership in concrete campus sustainability operations, including environmental management, policies, and initiatives within HEIs as institutional actors (Avisar et al., 2018; Dawodu et al., 2022; Lang, 2015; Peer & Stoeglehner, 2013; Posner & Stuart, 2013; Washington-Ottombre, 2024). Here, both leadership and broad stakeholder engagement are crucial for HEIs' successful organizational change management toward sustainability (Lee & Schaltegger, 2014; Rieg et al., 2021).

On the other hand, HEIs' central role in educating future sustainability leaders has been a key focus, with particular attention given to students as change agents (Savanick et al., 2008; Shriberg & Harris, 2012; Warwick, 2016). In particular, HEIs' ability to shape the mindsets and mental models of future leaders and professionals is considered a crucial leverage point (Dyer & Dyer, 2017). In this process, campuses are perceived as living labs—platforms for sustainability education and science (Evans et al., 2015; Zen, 2017). This educational dimension connects HEIs to other types of organizations and makes them unique: While similar organizational management processes and change dynamics studied in corporate contexts also apply to HEIs, the latter's educational and knowledge-production role highlights their societal agency in addressing societal challenges (Compagnucci & Spigarelli, 2020; Trencher et al., 2014).

However, sustainability leadership is neither limited to education nor entirely separate from organizational management and campus operations. Instead, it should be understood as a capacity that integrates HEIs' organizational management with the operationalization of sustainability leadership in educational practice. In this article, the notion of campus sustainability

functions as an integrative framework for sustainability leadership, bringing together the educational, research, and operational aspects of HEIs. As an organic and practice-focused term, it differs from the concept of a sustainable campus, which carries the connotation of campuses as institutional and territorial units of analysis and agency (cf. Sugiarto et al., 2022). Campus sustainability is realized through interactions at various levels within the organization and with the surrounding community and stakeholders (Cortese, 2003; Leal Filho et al., 2019, 2020). This holistic approach—often referred to as the whole-of-university or whole-institution approach—embedded in campus sustainability extends sustainability leadership beyond individual education to organizational development, thereby enhancing HEIs' sustainability agency (Kohl et al., 2022; Mcmillin & Dyball, 2009). In this light, sustainability leadership requires both individual and organizational capacities to navigate systemic local and global multi-stakeholder environments, enabling their sustainable development.

MOOCs as a Scalable Tool for Sustainable Leadership Education

Frameworks such as CoDesignS ESD (Ahmad et al., 2023) have been developed to support the systematic integration of sustainable development into the overall curricula of HEIs. Systems thinking, a holistic approach to complex problems, strategic and normative competencies, and collaborative problem-solving are recognized as key competencies for sustainability. However, leadership-building and empowerment are identified as essential yet less-developed components in the future advancement of sustainability education. Therefore, developing flexible tools to enhance the leadership capabilities of both HEI students and staff is foundational, as leadership lies at the core of sustainability transformation:

Sustainability transformation happens in various degrees in different organizations, but it needs to be sustained with the help of new sustainability leaders who can be developed formally and informally with the help of programs and tools that change mindsets, develop competencies, and create opportunities for deeper sustainability experiences. (Yabut et al., 2024: 92)

The United Nations' roadmap for Education for Sustainable Development provides guidelines for transforming campuses into wholesome sustainability learning environments, building the agency of

educational institutes' members, and cultivating whole-of-society thinking in joint local action (UNESCO, 2020). Nevertheless, there remains a need to better understand how to operationalize sustainability leadership effectively in both HEI organizational change management and educational practice (Hajdukiewicz & Pera, 2020; Rieg et al., 2021). Prior empirical research on sustainability leadership in HEIs has found that a lack of interest, as well as a lack of expertise and materials, is among the biggest challenges in promoting sustainability within organizations. Conversely, developing and investing in sustainability education are widely recognized as key priorities (Leal Filho et al., 2020). Personal development through education serves as a foundation for cultivating other sustainability leadership capabilities (Savage et al., 2015).

The MOOC format offers an opportunity to develop inclusive leadership education in the era of digital transformation, serving as a scalable model for sustainability leadership development. MOOCs have been a global educational phenomenon since 2010, built on a vision of openly available, high-quality education. The format's launch sparked expectations of a revolutionary reorganization of the educational system (Jacoby, 2014; O'Connor, 2014). While MOOCs have not necessarily created such a radical disruption, they have nevertheless been widely adopted in higher education. Additionally, MOOCs have become a popular tool for professional development in HEIs (Mori & Ractliffe, 2016).

The need to address the criticisms and improve upon the weaknesses of MOOCs (e.g., stability of the business model, lack of dynamic interaction) to harness their potential fully was recognized early on (Flynn, 2013). Embodied, experiential, and interactional learning in real-life settings has been found to support sustainability leadership education (Savage et al., 2015). Although MOOCs, as online environments for independent study, have been criticized for their detachment from contextual learning and theoretical focus, online sustainability teaching that engages learners in real-life cases within their local environments can nevertheless facilitate experiential learning outcomes (Pretorius et al., 2019). Moreover, the MOOC format enables the transcendence of geographical, economic, and institutional boundaries, offering open online education that can be adapted to meet organizational development needs.

Motivated by these observations, *MOOC for Sustainability: Empowering Global Campuses* (hereinafter Campus Sustainability MOOC or

simply the MOOC) was developed to enhance management and leadership practices and leverage sustainability leadership across HEI organizations. In the MOOC, campus sustainability serves as an integrative framework, bringing together researchers, educators, and operational and administrative staff across HEIs to support the transformation toward holistic organizational sustainability management. The MOOC harnesses the openness and inclusiveness of the format: Its objective is to provide tools and inspiration for learners in sustainability leadership regardless of their position or location. The course also aims to diversify the sustainability discourse by highlighting the remarkable sustainability leadership work in HEIs across the Global South.

The development of the MOOC is the result of a collaboration among five universities across three continents. The course development was initiated by the Finnish University Network for Asian Studies at the Centre for East Asian Studies (CEAS) at the University of Turku (UTU), Finland, as part of seed-funded activities under the Finland Ministry of Education International Global Pilots Programme for 2024. The MOOC idea stemmed from the partners' preceding collaboration on sustainability education, during which Ateneo de Manila University (ADMU) in the Philippines introduced its longstanding commitment to campus sustainability. ADMU's contributions formed the backbone of the course structure and materials, which were then combined with CEAS's expertise in MOOC development.

This framework was further enriched by materials that provided perspectives, practical examples, and best practices from the partner universities: Lagos State University (LASU; Nigeria), Universitas Indonesia (UI; Indonesia), and Zhejiang University (ZJU; China). The authors participated in the MOOC's development as coordinating representatives of their respective universities. The following discussion, based on the authors' work in developing the MOOC, examines the sustainability leadership capacities and agency that the MOOC has the potential to develop both individually and collectively, as well as the methodologies used to achieve these objectives.

The Structure and Methodologies of the MOOC

The *MOOC for Sustainability: Empowering Global Campuses* course main page² begins with this description (italics added):

² Available at <https://digicampus.fi/course/view.php?id=5697> (registration required).

This course offers a comprehensive introduction to campus sustainability and tools to pursue it in your own institution. The aim is to foster a global dialogue on sustainability that values and incorporates a range of perspectives and methods. By working with experts from our network, this MOOC creates a comprehensive educational resource that transcends geographical boundaries to inspire future campus sustainability champions.

After a series of discussions among the collaborators developing the MOOC, one of the key points that emerged was the need to engage and empower university personnel in mainstreaming sustainability. As a result, the open online course was designed for future campus sustainability champions, including teachers, researchers, administrators, and non-teaching personnel. Current approaches to campus sustainability often neglect this important “middle ground,” namely, faculty and staff, by focusing on either top-down organizational initiatives or bottom-up student movements. However, faculty and staff are critical actors in driving impactful and sustained progress in campus sustainability (Brinkhurst et al., 2011).

The Campus Sustainability MOOC aims to create transformative learning experiences that lead to personal development and shifts in learners’ worldviews through cycles of learning and reflection. This process is based on critical reflection on one’s assumptions, examination of social issues, and engagement in social action. The MOOC facilitates this by challenging learners to examine real-world sustainability challenges while supporting them in implementing action-oriented solutions (Bryant et al., 2021; Meyers, 2008). Learners’ personal development forms the foundation for sustainability leadership capacities. Moreover, learning to operationalize shared visions fosters the development of collective action competencies, which are central to many campus sustainability initiatives (Clark, 2016; Savage et al., 2015).

Therefore, the MOOC was designed so that, upon completion of the course, participants would be able to develop a holistic understanding of the interdisciplinary nature of sustainability. Additionally, as part of the tangible outputs participants generate, they would be able to develop sustainability strategies and a roadmap tailored to their respective university contexts. While equipping learners with tools to operate within their own institutional contexts, the course also transcends place-based learning, connecting campus sustainability to global challenges by sharing international experiences. Beyond the intended learning outcomes,

the course was designed to provide participants with preliminary ideas on how to raise awareness of campus sustainability and build a community of champions or leaders within university sustainability initiatives.

The MOOC consists of a course introduction module and five subject modules (see Table 1). Each module begins with two videos developed by ADMU: a lecture explaining the key module concept and a video from the Ateneo Sustainability Journey series. The latter illustrates how the key module concept is operationalized and applied in the context of Ateneo de Manila University. Following these two videos is a collection of materials generated by partner universities demonstrating how the key module concepts are contextualized within their respective institutions. By showcasing that a sustainability journey can take many forms and involve various actors, these materials include readings, podcasts, videos, and interactive activities. The modules emphasize that participants do not need to replicate all the initiatives presented to achieve a sustainable campus; rather, the materials provide a range of possibilities. This approach encourages learners to reflect critically on their own institutional contexts, thereby building leadership capacity for co-creative collaboration in devising context-sensitive and realistic sustainability action plans (Ferdig, 2007).

The first module, “Defining Campus Sustainability,” introduces the idea of mainstreaming sustainable development within one’s institution. This module’s materials help learners understand the holistic nature of sustainability, its relationship to campus development, and the contextual perspectives of partner universities on campus sustainability. Thus, the module reinforces the idea that campus sustainability is not a monolith but is instead deeply tied to societal, economic, ecological, and cultural contexts. This diversity already became evident during the planning phase, as concrete factors such as partner universities’ differing climates (tropical vs. boreal), waste management systems, energy infrastructures, and organizational cultures were identified, shaping the sustainability solutions. The course materials also illustrate how some partner universities focus more on infrastructure and environmental management, while others prioritize student engagement or organizational management. As explored in subsequent modules, this variation highlights the relative nature and different scales of sustainability management across various actors. Hence, campus sustainability can take multiple forms and lead to different outcomes, even within the same organization, which is an important lesson for future sustainability leaders.

Module Title	Learning Outcomes	Key Contents	Assessment Task
0. Getting Started		Welcome to the course	
1. Defining Campus Sustainability	<ol style="list-style-type: none"> 1. Understand what campus sustainability is, 2. Discuss similarities and differences in how campus sustainability is practiced, and 3. Articulate what campus sustainability means for your institution. 	<ol style="list-style-type: none"> 1.1 Defining campus sustainability 1.2 Introduction to the collaborating universities 1.3 Roundtable discussion on campus sustainability 	Module Output 1: Your views on campus sustainability
2. Identifying Your Campus Value Chain	<ol style="list-style-type: none"> 1. Understand what a value chain is, 2. Determine the environmental, social, and economic impacts of campus activities, and, 3. Propose an operational change in your campus that can improve your value chain. 	<ol style="list-style-type: none"> 2.1 Identifying your campus value chains 2.2 The sustainability journey of ADMU, Part 1 2.3 Case study: Carbon footprint calculation at UTU 2.4 Case study: Sustainability at UI 2.5 Case study: Campus developments in ZJU 2.6 Case study: Sustainability focus areas in LASU 	Module Output 2: Your value chain analysis
3. Operationalizing Sustainability Strategies	<ol style="list-style-type: none"> 1. Scan the internal and external environment of your university, 2. Develop a campus sustainability strategy, and 3. Develop action plans to operationalize this strategy for your university. 	<ol style="list-style-type: none"> 3.1 Operationalizing sustainability strategies 3.2 The sustainability journey of ADMU, Part 2 3.3 Teaching and studies on sustainability 3.4 Organizational structures for campus sustainability 3.5 Case study: Sustainable Campus Life focus areas at UTU 3.6 University networks for sustainability 	Module Output 3: Your university's SWOT analysis and sustainability strategies
4. Monitoring and Communicating Campus Sustainability	<ol style="list-style-type: none"> 1. Determine suitable key performance indicators for your strategies, 2. Identify different ways to relay progress and successes in your sustainability journey, and 3. Develop KPIs and communication strategies for your campus sustainability initiatives. 	<ol style="list-style-type: none"> 4.1 Monitoring and communicating campus sustainability 4.2 The sustainability journey of ADMU, Part 3 4.3 Case study: UI Green Metric 4.4 Sustainability events and student engagement 4.5 Engaging communities and communicating biodiversity 	Module Output 4: Your sustainability monitoring tool
5. Course Synthesis		<ol style="list-style-type: none"> 5.1 The whole-of-society approach to campus sustainability 5.2 Module Output 5.3 Sharing the lessons learned and inspiring action 5.4 Campus Sustainability Action Plan Workbook 	Module Output 5: Your sustainability roadmap

Table 1: MOOC modules, learning outcomes, and their alignment with key contents and assessment tasks

The second module, “Identifying Your Campus Value Chain,” provides participants with an understanding of their institution’s value chain, referring to the processes and flows that lead to the delivery of teaching, research, and outreach at a university. By assessing inputs, processes, and outputs, including unintended consequences within university operations, participants are encouraged to identify the positive impacts of their campus that can be amplified and the negative impacts that can be minimized. Prior experiences in sustainability leadership education have demonstrated that engaging with campus operations in this way helps build leadership skills and fosters a deeper understanding of complex organizational change management (Shriberg & Harris, 2012). Thus, this module reinforces capabilities in systems thinking, recognizing the dynamic ecological, social, and socio-ecological relationships within which sustainability leaders must initiate change and continuously adapt their strategies (McKim & Goodwin, 2021).

The third module, “Operationalizing Sustainability Strategies,” begins by encouraging learners to draft their sustainability vision. Visionary capacity is considered an essential leadership trait, but equally important is the competence to operationalize and mobilize that vision (Bass, 1990; Stewart, 2006). Therefore, this module guides participants in conducting an environmental scan of their campus, which includes articulating strengths, weaknesses, opportunities, and threats (SWOT). With this grounded understanding of their institutional context, participants are guided in building their campus sustainability strategy and corresponding action plans using provided exercise templates. To support this process, the module offers inspiration through a gallery of sustainability-related courses, sustainable infrastructure initiatives, and networks in sustainable development from partner universities. Thus, the module supports sustainability leadership by fostering both transformative, visionary capacities and the readiness to operationalize sustainability through concrete actions in multi-stakeholder environments across various roles and contexts. The MOOC cultivates sustainability leadership as a practice of mobilizing shared responsibility into action instead of as a top-down leadership-driven process, empowering each individual to initiate change within complex systems (McKim & Goodwin, 2021; Yabut et al., 2024).

The fourth module, “Monitoring and Communicating Campus Sustainability,” introduces the concept and importance of key performance indicators (KPIs) in assessing whether targets set for sustainability initiatives are on track. Course materials include examples such as Ateneo de Manila

University’s sustainability reporting and Universitas Indonesia’s GreenMetric World University Ranking system. Additionally, the module emphasizes the value of engaging communication strategies in showcasing sustainability milestones, as effective communication fosters a sense of accomplishment within the campus community. Course materials highlight various approaches to engaging stakeholders and surrounding communities, including events and student activities at LASU and biodiversity citizen science initiatives at ADMU and UTU. This combination of monitoring and communication reinforces accountability and open, responsible leadership capabilities in promoting campus sustainability. Thus, it supports sustainability leadership not only as an “ability in individuals to take action” but also as a “capability to support, inspire, and guide by creating opportunities and devising courses of action” (Ferdig, 2007: 31).

The fifth module, or course synthesis, recaps various case studies and examples from the course, highlighting how the whole-of-society approach can be best utilized to advance campus sustainability. The whole-of-university approach integrates sustainability as a core aspect of all HEI operations (Kohl et al., 2022; Mcmillin & Dyball, 2009), whereas the whole-of-society approach extends HEIs’ sustainability agency more explicitly to the surrounding society. One example presented is the sustainability journey of Ateneo de Manila University, which began as a grassroots movement led by students and academic staff who formed an environmental coalition. This coalition conducted a waste audit with the support of numerous volunteers from various university units. Over time, the movement gained strong support from the administration, which then took the lead in drafting and implementing policies on environmental sustainability. In the MOOC, various case studies of the whole-of-society approach are presented, including collaborations between universities, local governments, and the private sector. Through these examples, the course aspires to promote a global dialogue on sustainability that embraces a diversity of perspectives and approaches. Thus, these MOOC materials illustrate how cultivating the whole-of-society approach is integral to sustainability leadership development, both in relation to diverse local stakeholders and within global networks.

As an outcomes-based course, each module concludes with a Module Output assignment. After examining how the key module concepts can be operationalized in different ways, participants are tasked with developing an output that reflects their ideas on localizing the key module concept within their

own institutions. This educational approach fosters the development of practical leadership skills and competencies, such as strategic planning, stakeholder engagement, systems thinking, and context-sensitive awareness. While the first four modules guide participants in building independent Module Outputs, the fifth module requires them to synthesize these outputs into a coherent sustainability roadmap that exemplifies their unique approach to sustainability leadership. Completion of the MOOC requirements grants participants a course certificate, and learners can download a workbook to engage their colleagues using the course assignment templates. The workbook and the reflective exercises embedded within the MOOC modules encourage learners to develop interactive, localized, and practical sustainability leadership strategies that support organizational transformation.

Hence, sustainability leadership cultivated by the MOOC course can be understood as emerging at the intersection of various capacities, forming a relative and contextual combination of leadership approaches (Leal Filho et al., 2020; Visser & Courtice, 2011). These include, for example, leading with a transformative long-term vision (Bass, 1990; Stewart, 2006), promoting just transformation for the common good (Shields & Hesbol, 2019), distributed leadership, which encourages shared responsibility through interaction (Gronn, 2002; Spillane et al., 2004), and agile, engaging management in response to complexity and uncertainty (Ferdig, 2007; McKim & Goodwin, 2021). These capabilities can be developed through independent MOOC studies and exercises by connecting them to context sensitivity and global sustainability. While a detailed pedagogical discussion is beyond the scope of this article, it is worth noting that locally implemented elements of transformative pedagogy for sustainability education, such as fieldwork, simulations, and group work, can help learners practice interactional leadership capabilities in real-world contexts (cf. Ahmad et al., 2023).

Potential, Prospects, and Critical Reflection

The structure, materials, and underlying rationale illustrate how the *MOOC for Sustainability: Empowering Global Campuses* course cultivates a practice-oriented model of sustainability leadership—one that is based not on a single individual but rather on shared responsibility, conjoined agency, and interactions across and beyond the organization (cf. Gronn, 2002; Spillane et al., 2004). In practice, the course provides learners with foundational strategic capabilities to

envision, strategize, and operationalize sustainability action within their own institutions. This is achieved primarily through three key tactics: Balancing globally applicable strategic planning with sensitivity to local contexts, emphasizing a whole-of-society approach, and providing a practically oriented, applicable course structure and exercises. As such, the MOOC not only supports personal sustainability leadership development but also extends beyond individual competencies, strengthening HEIs' sustainability agency and change-management capacities in institutional governance, operations, and external collaboration.

In addition to the potential of the Campus Sustainability MOOC concept, there are also practical and conceptual challenges in sustainability leadership and organizational management. These challenges highlight not only crucial areas for improvement but also avenues for future research. As an open and asynchronous online education tool, the MOOC addresses the global dimensions of campus sustainability, particularly through examples from partner universities and the whole-of-society approach, which showcase the diversity of sustainability challenges, approaches, and socio-cultural differences. Ideally, this exposure enhances learners' capabilities in compassionate, relational thinking and systemic understanding of how environmental, social, and economic aspects of sustainability intertwine. This blurring of boundaries between digital and physical space opens new directions for research on how HEIs can cultivate global sustainability leadership in a networked, digital world. However, it is crucial to acknowledge that transformational learning is an interactive, long-term process embedded in institutional structures, social practices, and diverse individual perspectives. Incorporating sustainability into campus management requires holistic, ambitious, and integrative leadership (Avisar et al., 2018; Boström et al., 2018). Given pressing sustainability challenges, the need for further research on effective tactics for sustainability leadership education remains ongoing and essential.

Using MOOCs to enhance organizational transformation in the era of information overload also comes with limitations. The Campus Sustainability MOOC is one among many courses in the vast body of available educational materials, and MOOCs often struggle to engage learners, leading to considerably high dropout rates (Wang et al., 2019). This also complicates the evaluation of success and impact, as measurable course completion does not necessarily equate to the potential inspiration, empowerment, or selective adaptation of the provided tools. This article was

written immediately after the launch of the Campus Sustainability MOOC; therefore, an analysis of the course's popularity or feedback is not yet available. However, this timing highlights the importance of communication and outreach in promoting the MOOC. Here again, the accessibility and openness of the MOOC format are highly beneficial, as it enables the course to be shared through global networks, reaching learners in partner organizations and beyond. Thus, developing effective methods for tracking, evaluating, and understanding the dissemination, accumulation, and impact of sustainability leadership education remains a crucial future task.

It has been argued that leadership should be assessed as an organizational rather than individual quality (Avisar et al., 2018; Spillane et al., 2004). Thus, sustainability in HEIs requires not only individual leadership development but also transformative organizational learning (Trevisan et al., 2024). The United Nations' Education for Sustainable Development roadmap (UNESCO, 2020) recognizes this challenge and calls for transforming educational environments and building the capacities of educators. Therefore, by adopting this campus sustainability MOOC or developing their own in close collaboration with their institutions, HEIs can use MOOCs as scalable tools to generate impact and relevance in promoting holistic sustainability agency and education. This would allow the MOOC to be integrated into a broader ecosystem of campus sustainability, fostering further development into hybrid learning experiences or concrete initiatives.

The sustainability leadership capacities developed in the MOOC resonate, for example, with Kotter's (1996) eight-step model for change management, which includes awareness-building, collaboration, vision and strategy creation, communication and empowerment, piloting and achieving early wins, and scaling and institutionalizing sustainability leadership. Thus, integrating sustainability leadership education and whole-of-society campus sustainability with existing frameworks of organizational change management presents a promising area for future research and development. This could contribute to a more robust understanding of sustainability leadership in HEIs. Conversely, HEIs' sustainability leadership in the context of campus sustainability can provide valuable insights for organizational change management frameworks, particularly in relation to distributed and interactive leadership.

Lastly, the notion of leadership is inherently connected to power. While open tools such as MOOCs

can provide inclusive education, and while the Campus Sustainability MOOC broadens sustainability debates beyond climate themes and amplifies the perspectives and practices of HEIs in the Global South, power and politics continue to influence campus sustainability and HEIs' sustainability agency. It is therefore essential to acknowledge underlying trends in educational institutionalism, just transformation, and the objectives of funding bodies and supporters, as these factors shape and direct sustainability outcomes (Breen, 2010). Hence, alongside positive empowerment and capacity-building, it is crucial to develop a deeper critical awareness of local and global power dynamics in sustainability.

Conclusion

While we academics conduct research on sustainability and educate future sustainability leaders, this article reminds us that we do so in our organizational contexts. Organizations, including HEIs, are not only major sources of nature and climate impact but also significant actors in sustainability work (Wittneben et al., 2012). Therefore, as suggested in this article, embedding sustainability leadership in the context of campus sustainability as an integrative framework binds together both the HEIs' organizational context and individual agency within it. Despite their limitations, the educational format of MOOCs can serve as one practical and scalable tool to support alignment of learning and action, which extends sustainability impact beyond individual learners to institutional agency and organizational transformation. Thus, sustainability leadership in HEIs is about developing and implementing, as well as leading and transforming. And the leadership that HEIs develop and implement is transformational and sustainable. And through this developing, sustaining, implementing, and transforming, HEIs, too, can lead in innovation and sustainability.

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