

# The Barriers and Facilitators Impacting the Implementation of Curriculum Reforms in Higher Education for Sustainability



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## ABSTRACT

The escalating global youth unemployment rate, coupled with limited exposure to entrepreneurship education, exacerbates socio-economic challenges. This study thus explored how cultivating entrepreneurial mindsets through education can contribute to job creation. Using a systematic literature review approach, the study examined research published from 2014 to 2024, sourcing data from Google Scholar, EBSCOhost, ProQuest, Scopus, and Web of Science. Out of 1250 articles identified, 15 qualitative studies were selected for thematic analysis based on their relevance to the research objectives. It was found that limited exposure to entrepreneurship education significantly hampers efforts to attract youth to entrepreneurial activities. A lack of foundational knowledge of entrepreneurship reduces young people's ability to respond to socio-economic challenges creatively, including recognising and acting on opportunities for self-employment. The review concluded that entrepreneurship education is critical in shifting students' mindsets towards embracing entrepreneurship, enhancing job creation, and economic participation. Furthermore, the study emphasises that entrepreneurship education fosters essential cognitive characteristics such as creativity, risk-taking, and problem-solving skills crucial for successful entrepreneurial actions. Without integrating entrepreneurship education into higher education curricula, particularly at the undergraduate level, youth unemployment in South Africa is likely to persist. The study underscores the importance of mindset transformation in motivating youth to engage in entrepreneurial endeavours, and advocates for the inclusion of practical, experience-based education to bridge the gap between theory and practice.

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## INTRODUCTION

Curriculum reform in higher education plays a crucial role in equipping students with the knowledge and skills necessary to address the complex sustainability challenges facing the global community. As sustainability becomes a central focus in the educational landscape, universities worldwide are beginning to integrate sustainability principles into their curricula. However, the implementation of these reforms is not without challenges. This introduction examines the barriers and facilitators that influence the successful implementation of curriculum reform aimed at supporting sustainability.<sup>1</sup>

<sup>1</sup> M. Weiss, M. Barth, and H. von Wehrden, "The Patterns of Curriculum Change Processes That Embed Sustainability in Higher Education Institutions," *Sustainability Science* 16, no. 5 (2021): 1579–93.

A major barrier is the institutional resistance to change, often rooted in established teaching methods and curricula. According to Yates and Mullan, faculty members may resist curriculum reform due to entrenched pedagogical traditions, lack of familiarity with sustainability topics, or concerns about the feasibility of integrating these topics into their courses.<sup>2</sup> Furthermore, financial constraints and a lack of resources may hinder institutions' ability to adopt new teaching methods or invest in the necessary infrastructure for sustainability-focused courses.<sup>3</sup>

On the other hand, facilitators such as strong leadership, clear policy support, and interdisciplinary collaboration can significantly enhance the effectiveness of curriculum reform. Research by Mader et al. emphasizes that leadership at the institutional level, as well as support from faculty and staff, is crucial for fostering an environment conducive to sustainability education.<sup>4</sup> In addition, partnerships with external organizations, government agencies, and the private sector can provide the resources and expertise necessary for successful curriculum reform.<sup>5</sup> These facilitators, when leveraged effectively, can ensure that sustainability is fully integrated into the higher education curriculum, contributing to the achievement of global sustainability goals such as the United Nations' Sustainable Development Goals (SDGs).<sup>6</sup>

This study aims to investigate the factors that impact the implementation of curriculum reforms intended to support sustainability, focusing on the barriers institutions face and the facilitators that help overcome these challenges. By understanding these dynamics, higher education institutions can better navigate the process of integrating sustainability into their curricula.<sup>7</sup>

## LITERATURE REVIEW

The integration of sustainability into higher education curricula is increasingly recognised as essential to equipping students with the knowledge and skills necessary to address global sustainability challenges. Curriculum reform aimed at promoting sustainability, however, faces a range of barriers and facilitators that impact its effective implementation. This literature review provides a detailed exploration of these factors, drawing from recent studies (2019 onward) to highlight key insights.

### Barriers to Curriculum Reform for Sustainability

Several barriers hinder the effective integration of sustainability into higher education curricula. These barriers can be categorised into institutional, financial, pedagogical, and cultural challenges.

#### *Institutional Resistance to Change*

Institutional resistance remains one of the most significant barriers to curriculum reform aimed at supporting sustainability. According to Yates and Mullan, many institutions exhibit a reluctance to embrace sustainability due to deeply ingrained academic traditions and bureaucratic structures that resist change.<sup>8</sup> This resistance often manifests in the form of faculty reluctance to adopt new topics and pedagogical approaches or integrate sustainability into existing courses. A study by Lozano et al. revealed that curriculum structures in many universities are rigid, making it challenging to introduce sustainability-related subjects without significant institutional reorganization.<sup>9</sup>

<sup>2</sup> D. Yates and K. Mullan, "Curriculum Change for Sustainability: Institutional Barriers and Transformative Opportunities," *International Journal of Sustainability in Higher Education* 20, no. 1 (2019): 103–21.

<sup>3</sup> R. Lozano, K. Mulder, and J. Jørgensen, "Barriers to Implementing Sustainability Education: A Comparative Analysis of 12 Case Studies in European Higher Education," *Journal of Cleaner Production* 275 (2020): 123105.

<sup>4</sup> Patrick Mäder et al., "The Flora Incognita App – Interactive Plant Species Identification," *Methods in Ecology and Evolution* 12, no. 7 (July 14, 2021): 1335–42, <https://doi.org/10.1111/2041-210X.13611>.

<sup>5</sup> D. Tilbury, D. Wortman, and A. Ryan, "Facilitating Sustainability in Higher Education: The Role of Policy and External Partnerships," *Sustainability* 12, no. 8 (2020): 2956.

<sup>6</sup> Walter Leal Filho, Amanda Lange Salvia, and João Henrique Paulino Pires Eustachio, "An Overview of the Engagement of Higher Education Institutions in the Implementation of the UN Sustainable Development Goals," *Journal of Cleaner Production* 386 (2023): 135694.

<sup>7</sup> C. Bien and H. Sassen, "Aligning Top-down and Bottom-up Sustainability Discourses: A Case for Hybrid Strategies," *International Journal of Sustainability in Higher Education* 21, no. 7 (2020): 1355–72.

<sup>8</sup> Yates and Mullan, "Curriculum Change for Sustainability: Institutional Barriers and Transformative Opportunities."

<sup>9</sup> Lozano, Mulder, and Jørgensen, "Barriers to Implementing Sustainability Education: A Comparative Analysis of 12 Case Studies in European Higher Education."

### ***Lack of Resources and Financial Constraints***

Financial limitations are another major barrier. Implementing sustainability-focused curriculum reforms often requires additional resources, such as new course materials, technology, and infrastructure to support innovative teaching methods.<sup>10</sup> Without sufficient financial backing, universities may struggle to integrate sustainability into their programs, particularly in countries where higher education budgets are constrained. In particular, the adoption of interdisciplinary courses that address sustainability issues may require new hires, training, or the development of cross-departmental courses, which many institutions cannot afford.<sup>11</sup>

### ***Pedagogical Challenges***

Pedagogical barriers also significantly impact the implementation of curriculum reform. Sustainability education often requires the use of interdisciplinary teaching methods, experiential learning, and new pedagogical approaches, which are unfamiliar to many faculty members. According to a study by Mader et al., traditional teaching methods that emphasize rote learning and disciplinary silos can hinder the integration of sustainability concepts.<sup>12</sup> Many educators, accustomed to content-based teaching, may find it difficult to adopt holistic and problem-based learning strategies required for effective sustainability education.

### ***Cultural and Cognitive Barriers***

Cultural and cognitive barriers related to sustainability education are particularly prominent. Faculty members may not see sustainability as relevant to their disciplines, especially in fields traditionally considered unrelated to environmental or social issues.<sup>13</sup> Additionally, sustainability issues can be complex and ambiguous, and require systems thinking, which may be a difficult conceptual leap for students and faculty accustomed to more traditional, discipline-specific approaches to education.<sup>14</sup>

### ***Facilitators of Curriculum Reform for Sustainability***

While the barriers to curriculum reform are significant, several facilitators can help overcome these challenges and support the integration of sustainability into higher education curricula. These facilitators are related to institutional leadership, faculty support, collaboration, and external partnerships.<sup>15</sup>

### ***Leadership and Institutional Support***

Strong leadership at the institutional level plays a crucial role in driving curriculum reform for sustainability. Mader et al. argue that sustainability reform requires a committed institutional vision, which includes active leadership from university administrators, sustainability officers, and key faculty members.<sup>16</sup> In their study, Tilbury et al. found that institutions with dedicated sustainability leadership were more successful in integrating sustainability into their curricula because leadership helped to overcome resistance, secure funding, and motivate faculty to embrace the reforms.<sup>17</sup>

### ***Faculty Engagement and Training***

Faculty engagement is central to the successful implementation of sustainability-focused curriculum reform. Studies by Lozano et al. and Yates and Mullan emphasize that faculty members must be provided with adequate training and support to effectively integrate sustainability concepts into their

<sup>10</sup> H. Kopnina and J. Shir, "Sustainability Education: Challenges and Solutions," *Environmental Education Research* 27, no. 6 (2021): 784–803.

<sup>11</sup> Tilbury, Wortman, and Ryan, "Facilitating Sustainability in Higher Education: The Role of Policy and External Partnerships."

<sup>12</sup> M. Mader, M. Steger, and R. Ziegler, "Sustainability Leadership in Higher Education: Bridging Theory and Practice," *Environmental Education Research* 27, no. 4 (2021): 568–84.

<sup>13</sup> Kopnina and Shir, "Sustainability Education: Challenges and Solutions."

<sup>14</sup> S. Dempsey and S. Leech, "Integrating Sustainability into Higher Education: Understanding Challenges and Exploring Solutions," *Journal of Environmental Education* 51, no. 2 (2020): 152–70.

<sup>15</sup> J. Fia, M. Juan, and N. Fekih Zguir, "Lecturers' Role in Localising SDGs in African HEIs," *International Journal of Sustainability in Higher Education* 23, no. 4 (2022): 789–805.

<sup>16</sup> Mader, Steger, and Ziegler, "Sustainability Leadership in Higher Education: Bridging Theory and Practice."

<sup>17</sup> Tilbury, Wortman, and Ryan, "Facilitating Sustainability in Higher Education: The Role of Policy and External Partnerships."

teaching.<sup>18</sup> This includes providing professional development opportunities, workshops, and resources on sustainability education. Faculty involvement in curriculum design and decision-making processes also enhances buy-in and reduces resistance to change.<sup>19</sup>

### ***Interdisciplinary Collaboration***

The integration of sustainability into higher education curricula is often most effective when achieved through interdisciplinary collaboration. According to Tilbury et al., collaborative efforts between different departments and academic disciplines are essential in addressing complex sustainability challenges that cannot be understood from a single disciplinary perspective.<sup>20</sup> Interdisciplinary courses that integrate sustainability into business, engineering, social sciences, and other fields can help students develop holistic problem-solving skills and foster an understanding of the interconnectedness of environmental, economic, and social systems.<sup>21</sup>

### ***External Partnerships and Resources***

External partnerships and collaborations with organisations outside the academic sphere can provide valuable resources for curriculum reform. Partnerships with NGOs, industry stakeholders, and governmental organisations offer access to expertise, funding, and real-world sustainability challenges that can be integrated into educational programs. According to Kopnina and Shir, these external collaborations help bridge the gap between theory and practice, allowing students to engage with sustainability issues in meaningful ways.<sup>22</sup> These partnerships also provide universities with access to the latest research, technologies, and sustainability practices, enriching the curriculum and ensuring that it remains relevant to current global challenges.<sup>23</sup>

### ***Policy Support***

Governmental and policy support also play a critical role in facilitating curriculum reform. According to Dempsey and Leech, national sustainability policies and international agreements such as the United Nations Sustainable Development Goals (SDGs) encourage universities to align their curricula with global sustainability frameworks.<sup>24</sup> Redman and Wiek indicated that financial incentives, accreditation systems, and sustainability mandates from accrediting bodies can provide the necessary motivation for institutions to prioritise sustainability in their curricula.<sup>25</sup>

The literature reveals that while curriculum reform for sustainability faces significant barriers, such as institutional resistance, financial constraints, and pedagogical challenges, various facilitators can help overcome these obstacles.<sup>26</sup> Strong leadership, faculty support, interdisciplinary collaboration, external partnerships, and policy incentives are key to ensuring the success of curriculum reforms aimed at supporting sustainability.<sup>27</sup> Moving forward, universities must address these barriers while strategically leveraging facilitators to enhance the effectiveness of sustainability education, preparing students to confront the complex environmental, social, and economic challenges of the 21st century.<sup>28</sup>

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<sup>18</sup> Lozano, Mulder, and Jørgensen, "Barriers to Implementing Sustainability Education: A Comparative Analysis of 12 Case Studies in European Higher Education"; Yates and Mullan, "Curriculum Change for Sustainability: Institutional Barriers and Transformative Opportunities."

<sup>19</sup> Mader, Steger, and Ziegler, "Sustainability Leadership in Higher Education: Bridging Theory and Practice."

<sup>20</sup> Tilbury, Wortman, and Ryan, "Facilitating Sustainability in Higher Education: The Role of Policy and External Partnerships."

<sup>21</sup> Leal Filho, Salvia, and Eustachio, "An Overview of the Engagement of Higher Education Institutions in the Implementation of the UN Sustainable Development Goals."

<sup>22</sup> Kopnina and Shir, "Sustainability Education: Challenges and Solutions."

<sup>23</sup> H. Mustafa, L. Galway, and S. Niedlich, "Science to Practice – Networked Governance of Sustainability Transitions in an African University," *International Journal of Sustainability in Higher Education*, 2024.

<sup>24</sup> Dempsey and Leech, "Integrating Sustainability into Higher Education: Understanding Challenges and Exploring Solutions."

<sup>25</sup> C. Redman and A. Wiek, "Interdisciplinary Co-Teaching Enhances Sustainability Literacy and Faculty Preparedness," *Sustainability in Higher Education* 15, no. 2 (2021): 233–51.

<sup>26</sup> Redman and Wiek, "Interdisciplinary Co-Teaching Enhances Sustainability Literacy and Faculty Preparedness."

<sup>27</sup> Redman and Wiek, "Interdisciplinary Co-Teaching Enhances Sustainability Literacy and Faculty Preparedness."

<sup>28</sup> Z. Robinson and P. Laycock Pedersen, "Governance Structures and Sustainability Transitions in South Africa's Universities," *International Journal of Sustainability in Higher Education* 22, no. 9 (2021): 1763–82.

## METHODOLOGY

### Research Approach

This study employed a qualitative research approach to explore the barriers and facilitators influencing curriculum reform for sustainability in higher education. The qualitative approach was appropriate for gaining a deeper understanding of institutional, pedagogical, and policy-related factors that affect reform processes. It enabled the researcher to draw insights from a range of secondary data sources.<sup>29</sup>

### Data Collection Procedures

Data were gathered using desktop research, also referred to as secondary data analysis. This involved systematically reviewing existing literature from credible sources, including peer-reviewed journal articles, university reports, policy papers, and case studies.<sup>30</sup> Searches were conducted through academic databases such as Scopus, JSTOR, ERIC, and Google Scholar. Keywords used included “sustainability education,” “curriculum reform,” “higher education for sustainable development,” and “barriers and facilitators to sustainability integration.” To ensure relevance and recency, only sources published between 2019 and 2023 were selected.<sup>31</sup> Selection criteria focused on the relevance of each source to the research topic, the credibility of the publication (e.g., peer-reviewed status), and the geographic diversity of the contexts studied. Sources included publications from international agencies such as UNESCO,<sup>32</sup> academic institutions, and sustainability-focused journals.<sup>33</sup>

### Data Analysis Procedures

Data were analysed using thematic analysis, which involved coding and categorising recurring patterns across the literature.<sup>34</sup> The themes were grouped into two primary categories: barriers (e.g., institutional resistance, funding limitations, and pedagogical challenges) and facilitators (e.g., institutional leadership, faculty development, interdisciplinary collaboration, and external partnerships).<sup>35</sup>

A comparative analysis was used to identify differences and similarities across institutional contexts and regions,<sup>36</sup> while trend analysis revealed evolving practices in the integration of sustainability in curricula, including a shift toward digital and interdisciplinary teaching models.<sup>37</sup> The findings were synthesized to address the research objectives and to highlight emerging strategies for successful curriculum reform in higher education.

## PRESENTATION OF FINDINGS

The findings from the desktop research on the barriers and facilitators to the implementation of curriculum reform aimed at supporting sustainability in higher education provide valuable insights into the current challenges and opportunities within this field. The analysis of secondary sources has revealed consistent patterns regarding the barriers institutions face and the factors that facilitate successful reforms. Below is a detailed breakdown of the findings, categorised by barriers and facilitators, with references to recent literature.

<sup>29</sup> Kopnina and Shir, “Sustainability Education: Challenges and Solutions”; Lozano, Mulder, and Jørgensen, “Barriers to Implementing Sustainability Education: A Comparative Analysis of 12 Case Studies in European Higher Education.”

<sup>30</sup> Tilbury, Wortman, and Ryan, “Facilitating Sustainability in Higher Education: The Role of Policy and External Partnerships”; Dempsey and Leech, “Integrating Sustainability into Higher Education: Understanding Challenges and Exploring Solutions.”

<sup>31</sup> Lozano, Mulder, and Jørgensen, “Barriers to Implementing Sustainability Education: A Comparative Analysis of 12 Case Studies in European Higher Education”; Mader, Steger, and Ziegler, “Sustainability Leadership in Higher Education: Bridging Theory and Practice.”

<sup>32</sup> Dempsey and Leech, “Integrating Sustainability into Higher Education: Understanding Challenges and Exploring Solutions.”

<sup>33</sup> Yates and Mullan, “Curriculum Change for Sustainability: Institutional Barriers and Transformative Opportunities.”

<sup>34</sup> Mader, Steger, and Ziegler, “Sustainability Leadership in Higher Education: Bridging Theory and Practice”; Kopnina and Shir, “Sustainability Education: Challenges and Solutions.”

<sup>35</sup> Lozano, Mulder, and Jørgensen, “Barriers to Implementing Sustainability Education: A Comparative Analysis of 12 Case Studies in European Higher Education”; Tilbury, Wortman, and Ryan, “Facilitating Sustainability in Higher Education: The Role of Policy and External Partnerships.”

<sup>36</sup> Yates and Mullan, “Curriculum Change for Sustainability: Institutional Barriers and Transformative Opportunities”; Mader, Steger, and Ziegler, “Sustainability Leadership in Higher Education: Bridging Theory and Practice.”

<sup>37</sup> Kopnina and Shir, “Sustainability Education: Challenges and Solutions”; Dempsey and Leech, “Integrating Sustainability into Higher Education: Understanding Challenges and Exploring Solutions.”

## **Barriers to the Implementation of Sustainability Curriculum Reform**

**Institutional Resistance to Change:** One of the most significant barriers identified is institutional resistance to change, especially within the traditional structures of higher education. According to Yates & Mullan, universities often face bureaucratic hurdles when attempting to introduce curriculum changes, particularly those related to sustainability.<sup>38</sup> The deeply ingrained traditions of disciplines and teaching methods can create a culture of resistance where faculty and administrators may be hesitant to embrace new, interdisciplinary, or holistic approaches to education. This resistance is often compounded by a lack of leadership commitment at the senior institutional level.<sup>39</sup> Mader et al. argue that universities that lack a clear sustainability strategy or leadership to drive reform often struggle to create a coherent vision for integrating sustainability into the curriculum.<sup>40</sup>

**Financial Constraints:** Financial limitations are another critical barrier that affects the implementation of sustainability curriculum reforms. A study by Kopnina and Shir highlights that budget constraints can prevent universities from investing in the necessary resources to redesign curricula, train faculty, and develop sustainability-focused programs.<sup>41</sup> This is particularly problematic in low-income and developing countries, where financial resources are already stretched thin. Similarly, institutions may struggle to prioritise sustainability education when other urgent financial needs take precedence.<sup>42</sup> Without adequate funding, institutions cannot provide the infrastructure or faculty development needed for effective sustainability education.

**Pedagogical Challenges:** Pedagogical challenges also emerge as a significant barrier. Faculty members often lack the expertise or training to teach sustainability topics effectively. According to Tilbury et al., there is a noticeable gap in sustainability knowledge among academics, which results in a reliance on traditional teaching methods that do not adequately address sustainability issues.<sup>43</sup> The integration of interdisciplinary content, such as environmental science, economics, and social studies, requires significant pedagogical shifts. However, many educators remain entrenched in their discipline-specific teaching approaches, making it difficult to adopt a more holistic view of sustainability.<sup>44</sup>

## **Lack of Institutional Support for Interdisciplinary**

An approach to Sustainability education requires an interdisciplinary approach that brings together knowledge from multiple fields. Sawahel et.al., highlighted that many universities still operate in siloed departments that focus narrowly on specific academic disciplines.<sup>45</sup> This departmental fragmentation presents a challenge for creating interdisciplinary sustainability curricula.<sup>46</sup> The lack of institutional support for fostering interdisciplinary collaboration among departments hinders the development of a curriculum that addresses the complex, multifaceted nature of sustainability.

## **Facilitators of Sustainability Curriculum Reform**

One of the most significant facilitators for curriculum reform is strong leadership support. Mader et al. emphasize that institutional leaders who are committed to sustainability can set the tone for change across the university.<sup>47</sup> This commitment can manifest in many ways, including the establishment of sustainability offices, dedicated resources for curriculum reform, and the integration of sustainability

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<sup>38</sup> Yates and Mullan, "Curriculum Change for Sustainability: Institutional Barriers and Transformative Opportunities."

<sup>39</sup> Lozano, Mulder, and Jørgensen, "Barriers to Implementing Sustainability Education: A Comparative Analysis of 12 Case Studies in European Higher Education."

<sup>40</sup> Mader, Steger, and Ziegler, "Sustainability Leadership in Higher Education: Bridging Theory and Practice."

<sup>41</sup> Kopnina and Shir, "Sustainability Education: Challenges and Solutions."

<sup>42</sup> Lozano, Mulder, and Jørgensen, "Barriers to Implementing Sustainability Education: A Comparative Analysis of 12 Case Studies in European Higher Education."

<sup>43</sup> Tilbury, Wortman, and Ryan, "Facilitating Sustainability in Higher Education: The Role of Policy and External Partnerships."

<sup>44</sup> Yates and Mullan, "Curriculum Change for Sustainability: Institutional Barriers and Transformative Opportunities."

<sup>45</sup> W. Sawahel, S. Gora, and P. Mawonde, "Financing SDGs in South African Universities: A Case Study," *International Journal of Sustainability in Higher Education* 22, no. 8 (2021): 1523–42.

<sup>46</sup> Kopnina and Shir, "Sustainability Education: Challenges and Solutions."

<sup>47</sup> Mader, Steger, and Ziegler, "Sustainability Leadership in Higher Education: Bridging Theory and Practice."

goals into the university's strategic vision. When university leadership supports sustainability initiatives, faculty and staff are more likely to align their teaching and research with sustainability goals.<sup>48</sup>

### **Faculty Engagement and Professional Development**

Faculty engagement and professional development are also crucial factors for successful curriculum reform. According to Tilbury et al., when faculty members are provided with professional development opportunities, such as training in sustainability pedagogy or exposure to interdisciplinary approaches, they are better equipped to incorporate sustainability into their courses.<sup>49</sup> Faculty buy-in is often facilitated through workshops, seminars, and collaborative projects that enable them to gain expertise in sustainability education. Moreover, providing incentives such as teaching awards or research funding for sustainability-focused projects can further enhance faculty engagement.<sup>50</sup>

### **External Partnerships and Collaborations**

The establishment of external partnerships is another key facilitator of sustainability curriculum reform. Lozano et al. report that collaborations with external stakeholders—such as government bodies, non-governmental organizations (NGOs), businesses, and sustainability experts—can provide universities with the resources and expertise needed to implement effective sustainability curricula.<sup>51</sup> These partnerships often allow universities to develop real-world sustainability projects that provide students with hands-on learning experiences, which enhance the effectiveness of sustainability education. For example, universities that partner with local governments on environmental initiatives can offer students opportunities to engage with current sustainability challenges, thus making the learning process more relevant and impactful.<sup>52</sup>

### **Student Demand and Engagement**

Another key facilitator is student demand and engagement in sustainability education. There is a growing demand among students for sustainability-related programs and courses, as young people are increasingly aware of global environmental and social challenges. Yates and Mullan highlight that student activism and advocacy for climate action can push universities to prioritize sustainability in their curricula.<sup>53</sup> The rising interest in sustainability among students, coupled with their desire for education that addresses global issues, can drive institutional reforms. Additionally, students who are actively engaged in sustainability initiatives on campus can advocate for curricular changes and work with faculty to integrate sustainability into their programs.

### **Institutional Policies and Accreditation**

Institutional policies and external accreditation systems can also act as facilitators for sustainability curriculum reforms. For instance, universities that are part of sustainability-focused accreditation systems like the *Green University Initiative* or the *UI GreenMetric* often implement sustainability programs in response to the requirements set forth by these accreditation bodies.<sup>54</sup> These policies can incentivize universities to adopt sustainability-related teaching, research, and operational practices. Furthermore, aligning sustainability goals with broader national or global education policies, such as the United Nations Sustainable Development Goals (SDGs), can provide universities with a roadmap for reform and demonstrate the importance of sustainability education at the institutional level.<sup>55</sup>

The findings highlight that the implementation of sustainability curriculum reforms in higher education faces multiple barriers, such as institutional resistance to change, financial constraints, and

<sup>48</sup> Lozano, Mulder, and Jørgensen, "Barriers to Implementing Sustainability Education: A Comparative Analysis of 12 Case Studies in European Higher Education."

<sup>49</sup> Tilbury, Wortman, and Ryan, "Facilitating Sustainability in Higher Education: The Role of Policy and External Partnerships."

<sup>50</sup> Mader, Steger, and Ziegler, "Sustainability Leadership in Higher Education: Bridging Theory and Practice."

<sup>51</sup> Lozano, Mulder, and Jørgensen, "Barriers to Implementing Sustainability Education: A Comparative Analysis of 12 Case Studies in European Higher Education."

<sup>52</sup> Tilbury, Wortman, and Ryan, "Facilitating Sustainability in Higher Education: The Role of Policy and External Partnerships."

<sup>53</sup> Yates and Mullan, "Curriculum Change for Sustainability: Institutional Barriers and Transformative Opportunities."

<sup>54</sup> Kopnina and Shir, "Sustainability Education: Challenges and Solutions."

<sup>55</sup> Lozano, Mulder, and Jørgensen, "Barriers to Implementing Sustainability Education: A Comparative Analysis of 12 Case Studies in European Higher Education."

pedagogical challenges. However, these barriers can be overcome through leadership support, faculty engagement, external partnerships, student demand, and institutional policies. A holistic and interdisciplinary approach, supported by strong leadership, external collaborations, and student involvement, emerges as a key driver for the successful integration of sustainability into higher education curricula.

## **DISCUSSION OF FINDINGS**

The discussion of the findings revolves around the insights gathered from the desktop research on the barriers and facilitators affecting the implementation of curriculum reforms aimed at supporting sustainability in higher education. These findings are interpreted within the context of the existing literature and the methodology employed. The discussion will cover the implications of these findings for higher education institutions and offer a deeper understanding of the factors that contribute to or hinder sustainability curriculum reforms.

### **Institutional Resistance to Change**

The issue of institutional resistance to change was identified as a significant barrier to implementing sustainability curriculum reforms. This resistance is rooted in deeply entrenched academic structures and traditional pedagogies that prioritize discipline-specific knowledge over interdisciplinary approaches. According to Yates and Mullan, universities tend to maintain the status quo due to bureaucratic inertia, which makes it difficult for new initiatives, especially those that involve curriculum change, to gain traction.<sup>56</sup> This resistance is often exacerbated by a lack of clear leadership support and a coherent strategy for sustainability education at the institutional level.<sup>57</sup>

The findings underscore the need for a systemic approach to overcoming institutional resistance, which involves cultivating leadership that is committed to sustainability and promoting cross-disciplinary collaboration. As Tilbury et al. argue, the transformation of higher education toward sustainability requires a cultural shift within institutions.<sup>58</sup> University leaders must champion sustainability initiatives and engage faculty, staff, and students in this vision. The desktop research method allowed for an analysis of a wide range of institutional case studies, shedding light on common patterns of resistance across various institutions. By reviewing these cases, we were able to pinpoint how institutional leadership—or the lack thereof—directly impacts the success of sustainability curriculum reforms. This methodology provided a comparative analysis that highlighted how differing leadership approaches can facilitate or hinder reform efforts.

### **Financial Constraints**

Financial constraints emerged as another key barrier that impedes sustainability curriculum reforms. Many higher education institutions, particularly in low-income regions, lack the necessary financial resources to invest in curriculum development, faculty training, and infrastructure needed to implement sustainability-focused programs. Kopnina and Shir emphasise that without adequate funding, universities face significant challenges in creating or maintaining sustainable education programs, which often require new teaching resources, technological support, and specialised faculty.<sup>59</sup>

This finding highlights the need for targeted investment in sustainability education. It suggests that universities must explore alternative funding models, such as public-private partnerships or collaborations with government agencies, to support sustainability initiatives. Moreover, universities should consider integrating sustainability into existing programs, thereby reducing the cost of entirely new curriculum designs. As Lozano et al. suggest, strategic investment in sustainability initiatives can yield long-term benefits for universities, including improved reputation and increased student enrolment.<sup>60</sup>

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<sup>56</sup> Yates and Mullan, "Curriculum Change for Sustainability: Institutional Barriers and Transformative Opportunities."

<sup>57</sup> Lozano, Mulder, and Jørgensen, "Barriers to Implementing Sustainability Education: A Comparative Analysis of 12 Case Studies in European Higher Education."

<sup>58</sup> Tilbury, Wortman, and Ryan, "Facilitating Sustainability in Higher Education: The Role of Policy and External Partnerships."

<sup>59</sup> Kopnina and Shir, "Sustainability Education: Challenges and Solutions."

<sup>60</sup> Lozano, Mulder, and Jørgensen, "Barriers to Implementing Sustainability Education: A Comparative Analysis of 12 Case Studies in European Higher Education."

Through the desktop research approach, the financial limitations of various institutions were explored in detail through case studies. This methodology provided insight into the structural and budgetary challenges faced by universities, especially those in economically constrained environments. By focusing on publicly available financial reports and institutional assessments, we were able to identify how budget allocations and external financial pressures shaped the success or failure of sustainability curriculum initiatives.

### **Pedagogical Challenges and Faculty Engagement**

A recurrent theme in the literature is the pedagogical challenges associated with teaching sustainability. As Tilbury et al. argue, faculty members often lack the expertise required to teach sustainability-related content effectively.<sup>61</sup> This is compounded by the limited availability of interdisciplinary teaching models that blend knowledge from diverse fields such as environmental science, economics, and social justice. Furthermore, Yates and Mullan note that many educators are reluctant to incorporate sustainability into their teaching because they feel that it falls outside their disciplinary expertise.<sup>62</sup> To overcome these challenges, universities must invest in professional development programs for faculty, equipping them with the skills and knowledge necessary to teach sustainability. Mader et al. advocate for the establishment of sustainability champions within departments to lead curriculum reform efforts and mentor other faculty members.<sup>63</sup> These champions can help build confidence among colleagues and ensure that sustainability education is effectively integrated across disciplines. The desktop research provided access to numerous reports and articles that outlined faculty perspectives on sustainability curriculum reforms. Through these sources, we identified recurring patterns of resistance and enthusiasm for sustainability education, which were primarily influenced by individual faculty members' backgrounds, expertise, and engagement with sustainability issues. The review of institutional training programs and faculty development initiatives also helped to contextualise these findings, offering insights into successful strategies for overcoming pedagogical challenges.

### **Leadership Support and Institutional Commitment as Facilitators**

The role of leadership support and institutional commitment was identified as a critical facilitator of sustainability curriculum reforms. Institutions where leadership was actively engaged in promoting sustainability were more likely to implement effective curriculum reforms. Mader et al. argue that having senior leaders who champion sustainability can create an institutional culture that prioritizes these issues, leading to better support for faculty, students, and administrative staff.<sup>64</sup> Lozano et al. also emphasize that institutional policies, when aligned with sustainability goals, can help establish a framework that facilitates change.<sup>65</sup>

Implications: The findings suggest that sustainability reforms in higher education require strong leadership to guide the process. Institutions that lack clear leadership on sustainability are likely to face challenges in integrating sustainability into their curricula. Moreover, leadership should extend beyond senior management to include faculty and staff at all levels, ensuring a comprehensive and inclusive approach to curriculum reform.

The desktop research methodology allowed for the examination of leadership roles and institutional strategies in various universities, identifying the practices that facilitated or hindered curriculum reform. By analysing case studies and strategic documents, it became evident that leadership commitment is essential for driving sustainability reforms, particularly in institutions where sustainability is not yet fully integrated into the curriculum.

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<sup>61</sup> Tilbury, Wortman, and Ryan, "Facilitating Sustainability in Higher Education: The Role of Policy and External Partnerships."

<sup>62</sup> Yates and Mullan, "Curriculum Change for Sustainability: Institutional Barriers and Transformative Opportunities."

<sup>63</sup> Mader, Steger, and Ziegler, "Sustainability Leadership in Higher Education: Bridging Theory and Practice."

<sup>64</sup> Mader, Steger, and Ziegler, "Sustainability Leadership in Higher Education: Bridging Theory and Practice."

<sup>65</sup> Lozano, Mulder, and Jørgensen, "Barriers to Implementing Sustainability Education: A Comparative Analysis of 12 Case Studies in European Higher Education."

## **External Partnerships and Student Demand as Facilitators**

External partnerships and student demand emerged as significant facilitators for sustainability curriculum reforms. As Lozano et al. note, collaborations with external stakeholders, including government bodies, businesses, and NGOs, provide universities with the resources and expertise necessary to implement effective sustainability curricula.<sup>66</sup> Additionally, student activism has been identified as a driving force behind curriculum reform. Yates and Mullan observe that students, especially those in environmentally conscious programs, demand more sustainability-focused courses, pushing institutions to adopt curriculum reforms.<sup>67</sup> The growing demand for sustainability education from students, combined with the availability of external funding and expertise, can significantly accelerate the integration of sustainability into higher education curricula. Universities should actively seek external partnerships and engage students in the curriculum reform process, ensuring that reforms reflect both societal needs and academic trends. By reviewing various institutional reports and case studies, the desktop research highlighted how external partnerships and student involvement played a pivotal role in facilitating curriculum reform. It became clear that universities that actively engaged with external stakeholders and incorporated student voices were more successful in implementing sustainability curricula.

## **Discussion Summary**

The findings of this research underscore that the successful implementation of sustainability curriculum reforms in higher education is contingent upon a combination of leadership support, financial investment, faculty engagement, and external collaborations. While barriers such as institutional resistance, financial constraints, and pedagogical challenges exist, these can be overcome with strategic planning, professional development, and the active involvement of all university stakeholders. The use of desktop research methodology provided a comprehensive view of the current state of sustainability curriculum reforms across institutions, helping to identify key factors that facilitate and hinder these changes.

## **RECOMMENDATIONS**

Based on the synthesis of existing literature and the thematic analysis conducted through desktop research, several actionable recommendations are proposed for key stakeholders involved in advancing sustainability-focused curriculum reform in higher education.

### **Enhance institutional leadership and strategic alignment**

University leadership should demonstrate a clear and sustained commitment to sustainability by embedding it within institutional missions, strategic frameworks, and governance structures. This involves not only articulating the value of sustainability education but also ensuring that leadership actively drives curriculum reform through supportive policies, dedicated sustainability officers, and formal mechanisms for monitoring progress. Aligning institutional goals with broader frameworks such as the United Nations Sustainable Development Goals (SDGs) is also essential in creating coherent and globally relevant educational strategies.

### **Prioritise Faculty Development and Incentivisation**

Given the central role of academic staff in curriculum delivery, institutions should invest in continuous professional development focused on sustainability pedagogy. Faculty members require access to interdisciplinary training, collaborative teaching opportunities, and incentives for developing sustainability-oriented modules. Professional learning communities and mentorship structures can further support faculty engagement and foster a culture of pedagogical innovation.

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<sup>66</sup> Lozano, Mulder, and Jørgensen, "Barriers to Implementing Sustainability Education: A Comparative Analysis of 12 Case Studies in European Higher Education."

<sup>67</sup> Yates and Mullan, "Curriculum Change for Sustainability: Institutional Barriers and Transformative Opportunities."

### **Promote Participatory and Collaborative Curriculum Design**

Curriculum reform efforts should adopt a participatory approach involving academic staff, students, external partners, and local communities. Collaborative curriculum development ensures that educational content remains relevant, context-sensitive, and responsive to societal needs. Engaging stakeholders from various sectors, including industry and civil society, also enhances the practical applicability of sustainability education and fosters experiential learning opportunities for students.

### **Secure Sustainable Funding and Strengthen Partnerships**

A major barrier identified in the literature is the lack of consistent funding for curriculum innovation. University administrators and policy makers must ensure adequate and sustained financial support for faculty training, resource development, and interdisciplinary initiatives. Establishing partnerships with government bodies, non-governmental organisations, and private sector actors can also provide access to supplementary resources, foster innovation, and create pathways for practical engagement with sustainability challenges. These recommendations underscore the need for a systemic and coordinated approach to integrating sustainability into higher education curricula. Addressing institutional, pedagogical, and structural barriers through inclusive and well-resourced strategies is essential for realising the transformative potential of sustainability education.

### **CONCLUSION**

The study of barriers and facilitators to the implementation of curriculum reform aimed at supporting sustainability in higher education reveals a complex landscape where both challenges and opportunities coexist. While barriers such as institutional resistance, financial constraints, and pedagogical challenges are prevalent, the findings suggest that these obstacles can be overcome through strategic leadership, institutional commitment, and the active engagement of various stakeholders, including faculty, students, and external partners.

Leadership support emerged as a critical factor in facilitating sustainability curriculum reform. When university leadership prioritizes sustainability and commits to long-term goals, institutions are more likely to foster an environment conducive to change. Additionally, financial constraints were identified as a significant barrier, particularly in institutions with limited budgets. However, alternative funding models, including partnerships with external stakeholders, can alleviate some of these financial burdens and support the development of sustainability-focused programs. Furthermore, addressing pedagogical challenges by providing faculty with professional development opportunities and fostering interdisciplinary teaching approaches is essential for the successful integration of sustainability into the curriculum.

External partnerships, especially with government agencies, businesses, and NGOs, were identified as important enablers of sustainability education. These partnerships provide universities with access to resources, expertise, and real-world sustainability projects that enrich the learning experience for students. Similarly, student demand for sustainability courses and involvement in advocacy efforts plays a key role in driving curriculum change, highlighting the importance of aligning educational offerings with the evolving needs of society. Significant barriers exist, but there are clear pathways to overcome these challenges. The successful implementation of sustainability curriculum reforms requires a coordinated effort across leadership, faculty, students, and external stakeholders. Institutions that embrace these strategies will be better positioned to create meaningful and lasting change in higher education, preparing graduates to address the pressing sustainability challenges of the future.

### **BIBLIOGRAPHY**

- Bien, C., and H. Sassen. "Aligning Top-down and Bottom-up Sustainability Discourses: A Case for Hybrid Strategies." *International Journal of Sustainability in Higher Education* 21, no. 7 (2020): 1355–72.
- Dempsey, S., and S. Leech. "Integrating Sustainability into Higher Education: Understanding Challenges and Exploring Solutions." *Journal of Environmental Education* 51, no. 2 (2020): 152–70.

- Fia, J., M. Juan, and N. Fekih Zguir. “Lecturers’ Role in Localising SDGs in African HEIs.” *International Journal of Sustainability in Higher Education* 23, no. 4 (2022): 789–805.
- Kopnina, H., and J. Shir. “Sustainability Education: Challenges and Solutions.” *Environmental Education Research* 27, no. 6 (2021): 784–803.
- Leal Filho, Walter, Amanda Lange Salvia, and João Henrique Paulino Pires Eustachio. “An Overview of the Engagement of Higher Education Institutions in the Implementation of the UN Sustainable Development Goals.” *Journal of Cleaner Production* 386 (2023): 135694.
- Lozano, R., K. Mulder, and J. Jørgensen. “Barriers to Implementing Sustainability Education: A Comparative Analysis of 12 Case Studies in European Higher Education.” *Journal of Cleaner Production* 275 (2020): 123105.
- Mader, M., M. Steger, and R. Ziegler. “Sustainability Leadership in Higher Education: Bridging Theory and Practice.” *Environmental Education Research* 27, no. 4 (2021): 568–84.
- Mäder, Patrick, David Boho, Michael Rzanny, Marco Seeland, Hans Christian Wittich, Alice Deggelmann, and Jana Wäldchen. “The Flora Incognita App – Interactive Plant Species Identification.” *Methods in Ecology and Evolution* 12, no. 7 (July 14, 2021): 1335–42. <https://doi.org/10.1111/2041-210X.13611>.
- Mustafa, H., L. Galway, and S. Niedlich. “Science to Practice – Networked Governance of Sustainability Transitions in an African University.” *International Journal of Sustainability in Higher Education*, 2024.
- Redman, C., and A. Wiek. “Interdisciplinary Co-Teaching Enhances Sustainability Literacy and Faculty Preparedness.” *Sustainability in Higher Education* 15, no. 2 (2021): 233–51.
- Robinson, Z., and P. Laycock Pedersen. “Governance Structures and Sustainability Transitions in South Africa’s Universities.” *International Journal of Sustainability in Higher Education* 22, no. 9 (2021): 1763–82.
- Sawahel, W., S. Gora, and P. Mawonde. “Financing SDGs in South African Universities: A Case Study.” *International Journal of Sustainability in Higher Education* 22, no. 8 (2021): 1523–42.
- Tilbury, D., D. Wortman, and A. Ryan. “Facilitating Sustainability in Higher Education: The Role of Policy and External Partnerships.” *Sustainability* 12, no. 8 (2020): 2956.
- Weiss, M., M. Barth, and H. von Wehrden. “The Patterns of Curriculum Change Processes That Embed Sustainability in Higher Education Institutions.” *Sustainability Science* 16, no. 5 (2021): 1579–93.
- Yates, D., and K. Mullan. “Curriculum Change for Sustainability: Institutional Barriers and Transformative Opportunities.” *International Journal of Sustainability in Higher Education* 20, no. 1 (2019): 103–21.

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