



Sustainability Integration in Indian Design Education: A Critical Comparative Analysis in the Context of the UN SDGs

krishna nagori, Dr. payal mehta
Department of Design GLS university

Abstract- This paper presents a critical comparative analysis of sustainability integration within design education curricula across prominent Indian institutions. Using the framework of the United Nations Sustainable Development Goals (SDGs), it investigates how Indian design academia aligns with global sustainability education mandates. Drawing upon curricular analysis, pedagogical review, and available institutional data, the study identifies significant strengths such as indigenous knowledge systems, interdisciplinary pedagogies, and community engagement, while simultaneously noting key gaps such as the lack of explicit SDG mapping, weak sustainability assessment mechanisms, and limited cross-sectoral collaboration. The study proposes a comprehensive set of recommendations to embed sustainability outcomes deeply into Indian design education. Drawing on current academic literature and global sustainability pedagogies, the paper aims to serve as both diagnostic and prescriptive for policy-makers, educators, and researchers in sustainability and design studies.

Keywords- Sustainability integration, design education, Indian institutions, curriculum analysis, Sustainable Development Goals (SDGs), sustainability education, Indian design academia, global mandates, pedagogical review, indigenous knowledge systems, interdisciplinary learning, community engagement, SDG mapping, sustainability assessment, cross-sector collaboration, curriculum development, policy recommendations, sustainable design, academic research, educational reform, innovation, environmental responsibility, higher education, future-focused learning.

I. Introduction

Design education is increasingly recognized as a powerful vehicle for addressing sustainability concerns in the 21st century. Globally, design schools are being called upon to specifically respond to the United Nations Sustainable Development Goals (UN SDGs) through curriculum reform, interdisciplinary research, and industry-community engagement (UNESCO, 2017; Wals, 2014). In India, a rapidly growing and culturally rich design education sector stands poised to influence sustainable practices across industrial, urban, and rural domains.

However, there exists limited empirical research that systematically examines the extent to which sustainability is meaningfully embedded within the curricula of Indian design institutions. This gap persists despite extensive scholarly and policy attention to sustainability integration in global higher education systems (Sterling, 2001; Barth & Rieckmann, 2012).

This study aims to address this gap through a comparative curricular and institutional analysis of six Indian design institutions using a custom SDG-alignment assessment framework. The paper investigates pedagogical approaches, curriculum content, community engagement strategies, and industry partnerships, all through the lens of the most relevant SDGs (4, 11, 12, 13, and 17).

II. Literature Review: Global Trends and Theoretical Frameworks

Global discourse on sustainability in education has expanded significantly, moving from environmental awareness to transformative pedagogy aimed at developing systemic thinking and lifelong learning capacities (Sterling, 2001; Leal Filho et al., 2018). In the context of design education, ESD (Education for Sustainable Development) principles demand a reconceptualization of the curriculum to include:

- Transdisciplinary approaches (Rieckmann, 2012)
- Systems thinking and socio-technical literacy (Ceschin & Gaziulusoy, 2016)



- Integration of indigenous and local knowledge systems (Wals & Corcoran, 2006)

UNESCO's roadmap (2017) and the Global Action Programme (GAP) provide a policy-level framework emphasizing that education must not only teach environmental literacy but also foster social innovation and cultural sensitivity to local contexts.

Despite global advances, the integration of SDGs into design education remains fragmented, especially in developing and postcolonial contexts such as India. Studies (Vaish, 2016; Ranjan, 2025) note that while Indian institutions display intent and values aligned with sustainability, explicit curriculum design, assessment mechanisms, and SDG articulation are often absent.

III. Methodology

This study adopts a comparative case study methodology, using publicly available curricula, institutional publications, and program outlines from six leading Indian design institutions:

- Lok Jagruti Kendra University (LJ University)
- Nirma University – Institute of Design
- Anant National University
- CEPT University
- National Institute of Fashion Technology (NIFT)
- National Institute of Design (NID)

A qualitative coding framework based on UN SDGs was used to classify and assess the presence of sustainability-related content, teaching methods, assessment design, community integration, and institutional strategy. Furthermore, recent research literature and reports were cross-referenced to validate institutional claims and triangulate findings.

IV. Comparative Analysis

Sustainability in Curriculum Content

While all institutions include sustainability-related units, explicit linkage to SDGs is often unstructured or implied. For instance:

- Nirma University offers modules on technology and sustainability integration through interdisciplinary courses and live community projects but lacks a clear SDG coding or sustainability assessment rubric.
- Anant National University leverages the “DesignX” framework with an emphasis on contemporary socio-environmental challenges but does not publicly document SDG-oriented mapping.
- NID integrates traditional craft practices with sustainable methods—a model lauded in the literature (Ranjan, 2025)—but sustainability is handled more as a thematic perspective rather than a clear pedagogical objective.

Pedagogical Approaches and Industry Collaboration

The dominant pedagogical modes—project-based learning, studio work, and design thinking—are conducive to sustainability integration. NIFT's industry alignment with sustainable textiles and CEPT's urban sustainability studios stand out for their clearer industry-academic linkages.

However, interdisciplinary and cross-sectoral collaboration, advocated by global best practices (Leal Filho et al., 2018), are still underdeveloped across most institutions.



Community and Ecosystem Engagement

Community immersion projects—particularly at LJ University and Anant University—address local sustainability problems, echoing calls for culturally embedded sustainability education (Wals & Corcoran, 2006). Yet, these initiatives lack robust impact measurement models tied to SDG targets.

V. Gaps Identified

Area	Observed Gap	Suggested Intervention
SDG-Mapping	Absence of SDG framework in course structuring	Mandated SDG-linked modules and project alignment
Sustainability Assessment	No sustainability-focused assessment frameworks	Portfolio assessment; lifecycle analysis tasks
Industry Collaboration	Limited to Fashion/Textiles sector	Expand into product design, architecture, and systems innovation
Research Output	Lack of sustainability-focused publications and research projects	Faculty development grants; student-led SDG publication awards
Curriculum Integration	Sustainability often treated as an elective or minor theme	Sustainability as a core design principle embedded in all studios

VI. Recommendations

Based on curricular analysis and global benchmarks, the following are recommended:

- Curriculum Innovation: Integrate SDG-driven learning outcomes and assessments across all levels of design education.
- Faculty Development: Implement workshops and certificate courses in sustainability pedagogy for design educators.
- Assessment Metrics: Develop SDG-linked sustainability impact assessment frameworks for design studios.
- Industry-Academia Partnerships: Foster collaborative projects with sustainable design firms, NGOs, and crafts sectors.
- Community-Based Learning: Institutionalize community immersion as a pedagogical method for co-design and participatory innovation.

VII. Conclusion

The findings highlight that Indian design education is increasingly aware of its responsibility toward sustainability but needs strategic curricular reform to align fully with the UN SDG framework. Leveraging traditional knowledge systems, interdisciplinary pedagogies, and community-centered design, Indian institutions can emerge as global leaders in sustainability-oriented creative education—if systematic curriculum innovation and policy-level support are enacted.

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Recommended Journals for Submission (ABDC-Ranked)

Depending on your emphasis (design, sustainability, or education management), consider the following ABDC-ranked journals:

Journal Name	ABDC Rank	Focus Area	Link
Journal of Cleaner Production	A	Sustainability, design systems, SDG implementation	https://www.journals.elsevier.com/journal-of-cleaner-production
International Journal of Sustainability in Higher Education	A	Education for Sustainable Development	https://www.emerald.com/insight/publication/issn/1467-6370



Journal Name	ABDC Rank	Focus Area	Link
Design Studies	A*	Design research, product systems, curricula	https://www.journals.elsevier.com/design-studies
Journal of Education for Business	B	Pedagogy, curriculum design, and education reforms	https://www.tandfonline.com/journals/vjeb20
Management of Environmental Quality	B	Environmental education, institutional sustainability practices	https://www.emerald.com/insight/publication/issn/1477-7835

Final Notes for Submission Preparation:

- Adhere to APA 7th edition for citations and references.
- Include a formal ethics statement if primary data or interviews are added later.
- Where possible, use institutional access to journals for more accurate curriculum materials or reach out to university departments for confirmation of sustainability modules.
- Consider adding a data appendix or logic model in your submission to show how curricular content maps to SDG outcomes.

Would you like help tailoring a cover letter and submission format specific to one of the journals?