

Supplementary Material A.

Table 1. Characteristics, objectives, and key findings of the studies included in the review.

Author(s), Year, and Journal	Objective	Main Conclusions
BARBIERI, J. C.; SILVA, D. (2011). <i>Revista de Administração Mackenzie. Sustainable Development and Environmental Education: A Common Path with Many Challenges</i>	To discuss the relationship between Environmental Education (EE) and Education for Sustainable Development (ESD), presenting their conceptual evolution and application in higher education.	EE and ESD are complementary approaches; Higher Education Institutions (HEIs) play a strategic role in training professionals committed to sustainability.
CAMPELLO, L. G. B.; SILVEIRA, V. O. (2016). <i>Revista de Direito Econômico e Socioambiental. Education for Sustainable Development (ESD) and the Greening of Universities</i>	To analyze the evolution of ESD in international declarations and discuss its implementation in universities.	ESD requires curricular and institutional changes, as well as the adoption of sustainable practices in university management.
CASAGRANDE JUNIOR, E. F.; AGUDELO, L. P. P. (2023). <i>Revista Internacional de Educação Superior. Education for Sustainable Development in Vulnerable Communities: A Case Study of an International Virtual Exchange Experience</i>	To present an international ESD experience focused on solving socio-environmental problems.	ESD strengthens collaborative, interdisciplinary solutions aligned with the Sustainable Development Goals (SDGs) in vulnerable communities.
CARNIATTO, I.; PEREIRA, V. A.; GONZALEZ, A. C. (2025). <i>Revista Brasileira de Educação Ambiental. Climate Environmental Education and Network Perspectives in Facing Challenges in Latin America and the Caribbean</i>	To present experiences of Climate Environmental Education networks in addressing the climate crisis.	Collaborative networks strengthen climate resilience and socio-environmental mobilization.
FLEIG, R.; NASCIMENTO, I. B.; MICHALISZYN, M. S. (2021). <i>Revista Gestão Universitária na América Latina (GUAL). Sustainable Development and Higher Education Institutions: A Challenge to Be Fulfilled</i>	To identify the implementation of sustainable development in universities across different countries.	The incorporation of sustainability occurs slowly and requires interdisciplinary approaches and institutional support.
HENCKE, C.; SILVA, R. L. F. (2022). <i>Revista Eletrônica do Mestrado em Educação Ambiental. Education for Sustainable Development vs. Environmental Education: Intersections from the Perspective of Major Science</i>	To critically analyze ESD through the concept of “royal science.”	ESD tends to reproduce normative models, whereas critical EE broadens emancipatory possibilities.
LEITE, C.; DOURADO, L. (2015). <i>Revista Electrónica de Enseñanza de las Ciencias. Environmental Education and Education for Sustainable Development in the Training of Education Graduates</i>	To evaluate the integration of EE and ESD into university education.	ESD contributes to preparing professionals capable of addressing complex socio-environmental problems.

LOUREIRO, C. F. B. (2016). Pesquisa em Educação Ambiental. The Said and the Unsaid in UNESCO's Decade of Education for Sustainable Development	To critically reflect on UNESCO's Decade of Education for Sustainable Development.	ESD presents potentialities but also conceptual and political limitations.
LOUREIRO, C. F. B.; PEREIRA, C. R.; PACHECO JÚNIOR, W. (2016). Revista de Ensino de Engenharia. Sustainability and Sustainable Development in Engineering Education	To discuss the education of engineers oriented toward sustainability.	Higher education should develop competencies to address socio-environmental and technological challenges.
NEPOMUCENO, A.; CARNIATTO, I. (2023). Sustainability. Correlations Between Climate Resilience in Family Farming and Sustainable Rural Development	To investigate relationships between climate resilience and sustainable rural development.	Adaptation strategies strengthen sustainability and resilience in rural communities.
PITANGA, A. F. (2016). Revista Brasileira de Educação Ambiental. Crisis of Modernity, Environmental Education, Education for Sustainable Development, and Green Chemistry Education	To discuss paradigms, conflicts, and convergences between EE and ESD.	Critical EE has greater transformative potential, whereas ESD remains linked to the sustainable development paradigm.
SANTANA, J. A. (2018). Educação Ambiental em Ação. Sustainable Development and Education: A Possible and Necessary Dialogue	To relate education and sustainable development.	Education is a fundamental condition for building sustainable societies.
SOUZA, C.; BENEVIDES, R. (2005). Revista Eletrônica do Mestrado em Educação Ambiental. Environmental Education for Sustainable Development and the Commitment of Universities	To analyze the commitment of HEIs to Environmental Education for Sustainable Development.	Universities play a central role in promoting sustainability but still face difficulties in implementing public policies.
SOUZA, A.; CASSANEGO JÚNIOR, V.; ZARDIN, F. (2019). Revista Gestão Universitária na América Latina (GUAL). Sustainability in the Institutional Development Plans of Higher Education Institutions	To identify the presence of sustainability in Institutional Development Plans.	Sustainability is present in institutional documents, but its implementation remains gradual.
SOUZA, D.; VENTURA, T. (2024). Revista de Administração Pública. Practices of Brazilian Federal Universities to Implement the Sustainable Development Goals	To identify actions aimed at implementing the SDGs in Brazilian federal universities.	Universities act mainly through management, governance, teaching, and research initiatives focused on the SDGs.
TOZATO, H. C. (2022). Revista Brasileira de Educação Ambiental. Critical Education for Sustainable Development in Higher Education	To reflect on the contribution of critical ESD to biodiversity conservation.	ESD should integrate scientific knowledge and traditional knowledge to promote sustainability.
AMARAL, A.; PEREIRA, L.; VIEIRA, M. (2026). Revista Brasileira de Gestão e Desenvolvimento Regional. Management of Education for Sustainable Development: A Study at the Federal Institute of São Paulo	To investigate the implementation of ESD at IFSP in alignment with SDG 4.	Several ESD initiatives exist, but greater institutional integration and coordination are still needed.
PALMA, L.; ALVES, N.; SILVA, T. (2013). Revista de Gestão Ambiental e Sustentabilidade. Education for Sustainability: Building Pathways at the Federal Institute of Education,	To identify how sustainability is addressed in IFRS programs.	The theme depends mainly on individual faculty initiatives and lacks an integrated institutional policy.

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FREITAS, M. (2004). Revista Ibero-Americana de Educação. Education for Sustainable Development and the Training of Educators/Teachers	To discuss teacher education for sustainable development.	Teacher education curricula should incorporate competencies related to sustainability.
VIEIRA, R.; VIEIRA, C.; MARQUES, A. (2021). Revista Portuguesa de Educação. Education for Sustainability: Between Life at School and the School of Life	To analyze perceptions and sustainability practices among different age groups.	Education directly influences the development of sustainable values and behaviors.
COSTIN, C. (2020). Estudos Avançados. Educating for a More Sustainable and Inclusive Future	To analyze basic education in light of the impacts of the pandemic, SDG 4 targets, and the Fourth Industrial Revolution.	Education must prepare future generations to face emerging challenges.

Source: Prepared by the authors (2026).