

Editorial Preface: Innovative Approaches in Education, Technology and Tourism for Sustainable Development

by the Guest Editors: Rui Alexandre Castanho, João Vidal Carvalho and António Abreu

Sustainable development is a key idea shaping global policies. However, putting it into practice is still an inconsistent exercise and often limited by separate sectors and dimensions. This Special Issue focuses on how education, technology, and tourism can work together to support sustainable development in a more unified regional and local way.

The articles in this collection respond to the idea that complex global issues, such as climate change, digital change, and social inequalities, cannot be solved by working as separate sectors. The United Nations (2015) in the 2030 Agenda for Sustainable Development stresses that reaching the Sustainable Development Goals (SDGs) needs joint efforts across policies, governments, and society. Nevertheless, there are ongoing gaps between plans and real action, especially in less central and fragmented regions.

This Special Issue takes a broad and interdisciplinary approach, collecting research on how education, technology, and tourism can work together to support sustainable development in different geographies. The core idea is that when these areas are coordinated, they can strengthen each other and make sustainability efforts more effective and easier to expand as well as replicate.

Many articles show how new digital tools like artificial intelligence (AI), the Internet of Things (IoT), and advanced data analytics can help make education and tourism more sustainable. In fact, these technologies improve monitoring, prediction, and decision-making, matching the goals in the European Commission's Digital Strategy (European Commission, 2020). However, the papers also point out that technology alone is not enough; but instead, success depends on the preparation of the institutions, the quality of governance, and people's digital skills.

Here, education is seen as more than just sharing knowledge. In fact, it is a critical catalyst for change. The articles about educational innovation highlight the importance of updating curricula, using digital learning, and teaching sustainability to encourage critical thinking and lasting behavior change. This matches UNESCO's (2020) view that education for sustainable development helps people and communities handle complex and uncertain situations.

In this Special Issue, tourism is viewed with a focus on sustainability, not just growth. The articles show that tourism can help develop regions, especially rural, remote, and culturally rich areas, if it is backed by coordinated planning and good governance. This supports OECD's (2021) findings that local policies and multi-level governance are important for balanced and inclusive regional development.

Contextually, a pivotal transversal dimension emerging from this Special Issue is the central role of governance and institutional coordination. Several contributions converge on the idea that the effectiveness of sustainability initiatives depends not only on technical design, but on the alignment between policies, stakeholders, and implementation mechanisms. In this regard, participatory and co-creation approaches are consistently highlighted as critical enablers, as they incorporate local knowledge, enhance legitimacy, and improve the overall effectiveness of interventions. Thereby, this convergence across diverse case studies and thematic perspectives reinforces the analytical depth of the Special Issue, enabling comparative insights and supporting the development of more robust and transferable knowledge frameworks.

Furthermore, this Special Issue is based on three international scientific events: ICITED'25, ICOTTS'25, and SD'25. These events provided spaces for discussion, validation, and sharing of research. This link makes the contributions more relevant and timelier, connects academic work with policy debates, and helps build a community across fields and regions.

Even with progress, the articles show that major challenges remain, especially with putting solutions into practice, scaling them up, and dealing with fragmented institutions. The "implementation deficit" is still a big problem in sustainable development, as the European Commission (2022) also tell us in its review of cohesion policy. Solving these needs not just new technology and education, but strong governance to keep efforts coordinated and aligned over time.

Therefore, with this Special Issue, a share of scientific results that may also add to the wider discussion about sustainable development is to be expected, providing a broad framework to help

both research and policymaking throughout, whilst bringing together views from education, technology, and tourism.

In summary, the articles in this collection show that sustainable development needs more than separate actions. It requires joined-up systems of knowledge, innovation, and governance. Connecting education, technology, and tourism, as discussed in this collection, offers a promising way to build stronger, more inclusive, and sustainable regions.

References

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