

2023-12-01

Special Issue - Editorial

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Recommended Citation

MacMahon, Cormac H.; Lemarchand, Philippe; Morales, Lucia; and Coetzer, Jon-Hans (2023) "Special Issue - Editorial," *Irish Journal of Academic Practice*: Vol. 11: Iss. 2, Article 1.

doi:<https://doi.org/10.21427/q6jb-6488>

Available at: <https://arrow.tudublin.ie/ijap/vol11/iss2/1>

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Education for Sustainable Development: Pedagogical Innovations Empowering Transformation towards a Resilient and Regenerative Future

Special Issue Editorial



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Abstract

The United Nations (UN) Sustainable Development Goals (SDGs) offer global leaders an opportunity to engage in a transformative process, which can help us move towards alternative socio-economic models, more in harmony with our environment. Yet, the challenges ahead are paramount. The UN's latest report examining progress provides a powerful call for action, highlighting the need to redouble efforts. Notably, the economic costs associated with the implementation of the UN 2030 agenda seem to have been largely neglected, compounded by a lack of leadership and vision from the international community in coordinating the required levels of investment. Consequently, there is a need to enhance the willingness of countries to collaborate on developing actionable plans, that could guide economies through a transition to a resilient and regenerative future. The 2030 agenda requires major compromises, as countries acknowledge the need for transformation, which, we argue, should start from the educational sector, where Higher Education Institutions have a vital role to play.

In this special issue, we reflect on the importance of Education for Sustainable Development, in particular on the educators' role in innovating change in their classrooms. Academics and researchers need to reconsider their pedagogical approaches as they contribute to forming our current and future leaders by instilling a sense of accountability for the sustainability agenda. Educational systems should be able to offer the required support to help learners develop the competencies and skills that drive critical thinking, collaborative and analytical questioning of

our current reality and how to articulate a more sustainable future for all. In this editorial, we summarise the key thematic areas and their interlinkages, identified in the various contributions to the special issue on Education for Sustainable Development.

Keywords: Curriculum, Education for Sustainable Development, Global Citizenship, Inclusive Education, Innovation, Pedagogy, SDGs, Transformation

Introduction

The United Nations (UN) Sustainable Development Goals (SDGs) envision a future of social justice and economic prosperity within environmental limits, with education as a catalyst for transformation. Education for Sustainable Development (ESD) is premised on learning being repurposed from one with a primarily economic focus to one encompassing global citizenship, social responsibility and environmental stewardship. SDG 4.7 mandates higher education institutions to prepare graduates for this renewed purpose and is measured by the extent to which ESD is mainstreamed in higher education. In line with this repurposing, we issued a call for original research articles, reviews, commentaries, and reflections for a special issue of the Irish Journal of Academic Practice (IJAP) at Technological University Dublin and in collaboration with the United Nations Institute for Training and Research (UNITAR). The special issue was aimed at capturing pedagogical innovations, underpinning institutional strategy and capacity building across higher education, which are contributing to SDG 4.7. The importance of the United Nations 2030 Agenda, and the need to examine how education can drive change, require active research contributions that help us assess the opportunities and challenges associated with implementing the SDGs. The call sought articles that share lessons learned from emergent practices in ESD as well as contrasting views on the future direction of academic scholarship and professional practice across the disciplines in this field. The importance of pedagogy as a driver of change, which enables the transformation of education, is vital as we are facing fast-evolving socio-economic and environmental systems defined by their complexity and uncertain nature. Learning, teaching, and research environments require insights from the pedagogical field to help educators define their roles and facilitate an inquiry process that examines to what extent existing practices support students in becoming self-directed and autonomous learners who take responsibility and accountability for their learning process. We argue for the need to offer a learner-centred experience that embraces the value of connecting research activities driven by learning and teaching practices, that are research-informed, and that are vital as we seek to equip our learners with the skills and competencies that support the transition from Industry 4.0 to 5.0. Hence, the special issue encompassed a range of thematic areas listed in Table 1.

In some respects, these thematic areas, some might argue, encompass a broad and loosely defined knowledge base. Yet, as is evident from Bianchi et al. (2022) listing of sustainability competencies, Education for Sustainable Development (ESD) is as much

defined by its set of underpinning values as it is by any disciplinary knowledge. In many respects, the epistemological basis for sustainability is still forming. The sustainability sciences are evolving rapidly, from the first inclinations that burning fossil fuels cause global warming (Arrhenius,1896) to the latest understanding of the socio-ecological challenges we face in keeping the Earth system within a safe operating space, whilst pursuing a more equitable distribution of natural resources in a balanced approach between economic and business activities and enabling a sustainable regeneration process (Rammelt et al., 2023). This rapid evolution in knowledge is happening to such an extent that understanding appears to unfold in real-time. Furthermore, it is essential to acknowledge that the Sustainability agenda is not limited to the green energy transition. The UN Nations 2030 Agenda provides a holistic compass, which, whilst being very ambitious and subject to significant implementation constraints, offers guidelines on the need to take action towards the development of more inclusive and diverse socio-economic models where the differences between the Global North and the Global South need to be acknowledged.

Table 1: Thematic Areas of Call for Papers

Theme	Description
TH ₁	pedagogical innovations for SDG 4.7
TH ₂	embedding equality, diversity and inclusion for learner success
TH ₃	sustainability strategy in higher education – what does it look like, and how is it manifested in our emerging education models?
TH ₄	programmatic transformation - approaches to embedding the SDGs in the curriculum, authentic assessment for sustainable development
TH ₅	authentic assessment for sustainable development
TH ₆	building capacity - competencies for, professional development of, and communities of practice amongst educators for sustainability
TH ₇	emergent sectoral and disciplinary issues in ESD
TH ₈	mobilising young people - promoting behavioural change, activism and responsible citizenship through education experiences
TH ₉	integrating circular principles in higher education and its implications for curriculum design, pedagogy, resource allocation and organising.
TH ₁₀	framing sustainability as super wicked problems and interdisciplinary approaches to solving complex sustainability challenges.
TH ₁₁	sustainability reporting and disclosures ~ navigating the complex sustainability intelligence landscape in higher education.

Contributions to this Call

There were over 35 article submissions by 61 authors from 8 countries in response to the original call. Although not all themes were covered by submissions, broadly construed there was good thematic coverage in the submissions, which emphasised programmatic transformation, pedagogical innovation, and capacity building (Figure 1). Indeed, the priorities of these submissions reflect the ESD emerging policy framework at institutional, community, national and international levels (e.g. Government of Ireland, 2022; TU Dublin, 2019; USDSN, 2017, 2020).

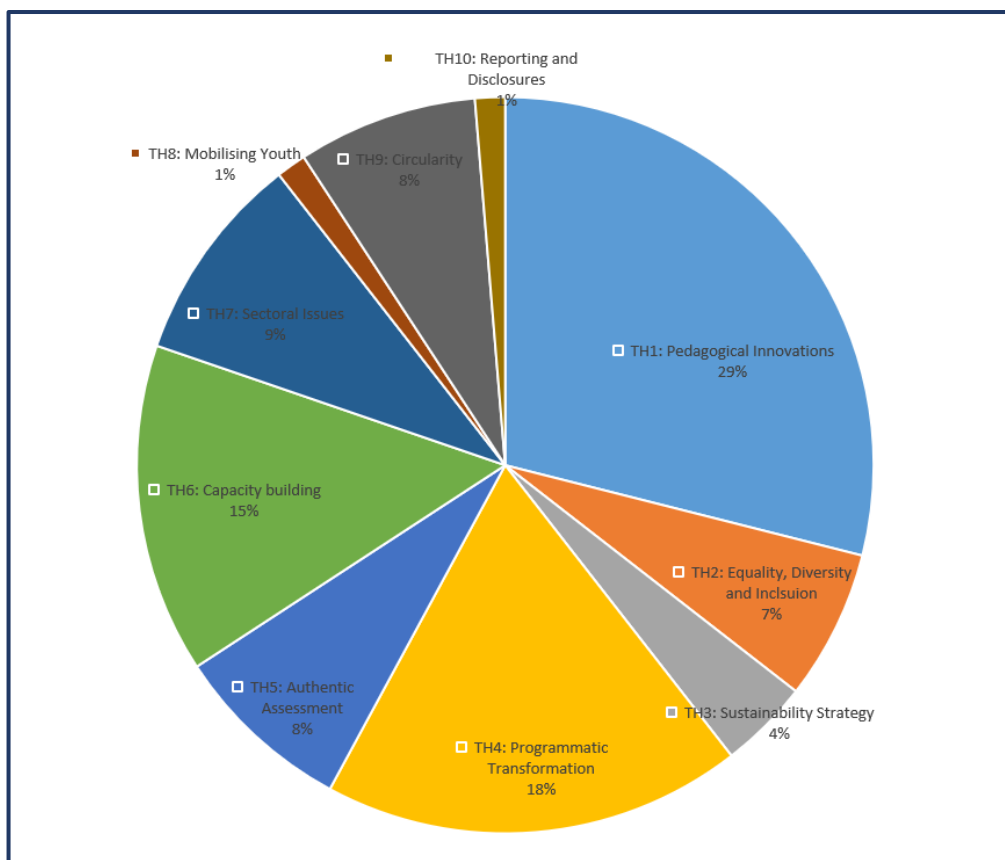


Figure 1: Thematic Alignment by Submission

As with all IJAP editions, our peer review process was designed to ensure a sufficient level of scrutiny merited by the level of scholarship and academic integrity required of the journal. We are, therefore, very appreciative of the efforts of all reviewers in providing constructive feedback, including *Una Beagon*, *Fionnuala Darby*, *Adrienne Fleming*, *Olivia Freeman*, *Yvonne Galligan*, *Kevin Mellon*, *Roisin Murphy*, *Trevor Prendergast*, *Miriam O'Donoghue* and *Philip Owende*. A total of 11 articles were accepted for this first volume, with a second volume expected later in 2024.

Education for Sustainable Development - Critical Insights

The latest report released by the United Nations Department of Economic and Social Affairs – Statistics Division in July 2023 (UN, 2023) reveals a stark reality about global progress to achieve the 17 goals and 169 targets. The growing impact of climate change has significantly challenged the sustainability agenda; the war in Ukraine, compounded by weaker outlooks for the global economy due to lagging effects derived from the Global Health Crisis, has impacted desired progress. The words of the incumbent United Nations Secretary-General summarise the delicate situation, and they underline the urgency for action,

"Unless we act now, the 2030 Agenda will become an epitaph for a world that might have been" António Guterres – UN Secretary-General (UN Website, 2023).

The progress chart for the sustainable development goals, as presented in Figure 2 below, provides an overview of global progress associated with the 17 SDGs and their 169 targets as outlined by the 2030 Agenda for Sustainable Development. The outcomes from the report reveal that only 15 percent of the assessable targets are on track to be achieved as per the 2030 deadline. Almost half of the targets are showing moderate progress with significant deviations from the desired trajectory. Furthermore, 37 percent of the targets are experiencing a lack of progress and, in some instances, facing a challenging situation as they have regressed below the 2015-based line.

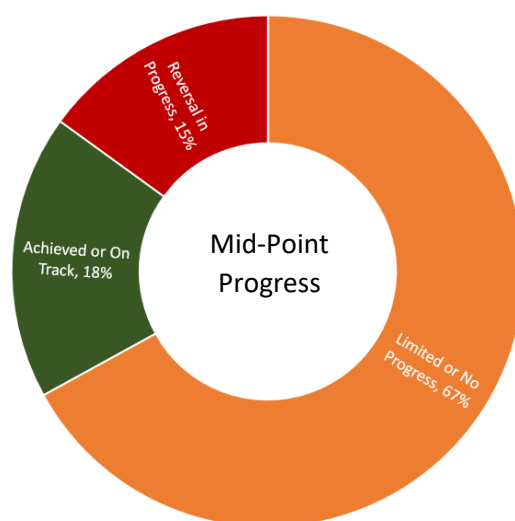


Figure 2: SDGs Progress.

Source: Adapted from United Nations Statistic Division (2023)

Furthermore, the 2023 United Nations Report on the Sustainable Development Goals shows that more than half of the world is already behind. Worryingly, progress in achieving more than 67 percent of the targets is weak and insufficient. More than 15 percent have stalled or regressed, including key targets on climate action, addressing poverty rates and eliminating hunger. The report highlights the need for multilateral cooperation, investment, and support, as we seek to identify mechanisms that contribute to developing and implementing a realistic plan. Within the outlined context, we seek to briefly reflect on how our educational system can contribute to addressing the lack of firm actions and how our educators need to take an active role in enabling and supporting change. In line with Kamphambale et al. (2024, p.1), education can act as a significant disruptor as it can help us understand the failure of existing economic models and the lack of alignment with our contemporary society's needs. This is changing slowly with the emergence of new models for economic development and the provision of sustainable finance. However, the unequal access to natural resources and the need for transformations of our economic, social and educational systems are highlighted and discussed by Rodrigues da Rocha et al. (2024), as the economic dimension to the sustainability agenda needs to be critically considered. The importance of cultural transformation and the critical role that Technological Universities can play as drivers of change was discussed by Peev et al. (2024). The authors examined educational frameworks and connected them to the future of European education. They argue that alternative pedagogies require A New Educational Model (ANEM) where novel approaches to learning, teaching and assessment should be considered. The authors emphasised the need for novel pedagogies that drive change as we "*think human first.*" The first three papers on the special issue provide critical insight into the need to connect our economic, social, and environmental systems with educational processes that help our higher education institutions drive change. The remaining papers on the special issue focus on students and enabling teaching and learning environments that support sustainability literacy and the development of associated skills and competencies.

The importance of learning environments and how they can nurture sustainability skills and attitudes is discussed by Gallagher & Murphy (2024), Tribello et al. (2024) and Gottsche et al. (2024). Designing and implementing lifelong sustainability education is highlighted by Gallagher & Murphy (2024) as they provide recommendations and offer insights on how HEIs can engage in sustainability education initiatives. The need to

empower lecturers and students through the integration of constructive, community-engaged pedagogies and their sustainability dimension was explored by Tribello et al. (2024). The authors argue for the need to redesign the curriculum and embed the UNSDGs through Community Engaged Research Learning (CERL) as they argue that this approach fosters dialogue and diversity and is enormously rewarding. Environmental initiatives were examined by Gottsche et al. (2024, p.1) provided an analysis of the environmental attitudes of undergraduate construction management students. The researchers highlighted the lack of formal processes to identify the impact of environmental initiatives on students. Embedding sustainability in food degrees was considered by Dunne et al. (2024) as the authors elaborated on a case study assessing the integration of sustainability competencies at TU Dublin's School of Food Science and Environmental Health. The authors elaborated on the need to integrate sustainability as part of the educational portfolio that should be informed by industry, publications and policy frameworks that contribute to identifying the best learning framework to create a model that develops sustainability competencies in food degrees. The need to foster student engagement and how learning environments supported by games can encourage active and collaborative learning processes was studied by Rawe et al. (2024). The authors provided insights that help better understand how sustainability literacy can be incorporated into undergraduate chemistry programmes by sharing their experiences and resources on implementing and replicating their case study.

The significance of authentic assessment as part of embedding sustainability literacy and technology skills in Tourism education was discussed by Stewart and Gorman (2024). The case study provides an exciting insight into how technology needs to be considered as part of sustainable developmental goals, recognising that the labour market desires tech-savvy graduates and that links to the demands of Industry 4.0 and 5.0. The importance of integrating the Sustainable Development Goals as part of undergraduate STEM programmes was studied by O'Leary & McDonnell (2024), demonstrating that students might be able to enhance their awareness and understanding of global issues while developing employability skills derived from a better understanding of the needs experienced by the Global South. The special issue concludes with a literature review conducted by McAvinia (2024). She assesses learning spaces in Higher Education and the importance of understanding them in the light of pedagogical, technological, political, ecological, and social changes that have impacted higher education over the past three

decades (McAvinia, 2024, p.1). The author's core findings point to the need for multiple, smaller, and more flexible learning spaces that underline the necessity for changes in educational frameworks, as we take time to reflect on learners' needs and the importance of acknowledging the diversity of our students and required learning supports.

Reflection and Acknowledgement - The Irish Journal of Academic Practice (IJAP)

The journal's first issue was published in 2011, seeking to provide a friendly and supportive space for academics, early career researchers, and students who contribute to the development of academia and its practices. Since its establishment, it has published circa 140 articles by authors worldwide; the journal has offered invaluable support to many early-stage educational researchers in developing their academic writing skills and more importantly offering a space that nurtures critical thinking and good research practices that are supported by a dedicated editorial team that provides significant support and guidelines through the development of research contributions and papers. IJAP articles are published under a Creative Commons Attribution Non-Commercial Share Alike license. With no paywall, articles can be accessed openly and anonymously. We suspect that the editors did not arrive at a title for the journal by accident either, with much of its scholarship rooted in classroom practices. We are particularly grateful to the editors of the journal, *Roisin Donnelly*, *Claire McAvinia* and *Kevin O'Rourke*, for allowing IJAP to be the vehicle for disseminating the scholarship of this particular call, which was motivated, to a large extent, by the enormous energy in learning, teaching and assessment practices evident in pivoting the education provision towards a higher purpose, enshrined in SDG 4.7. Likewise, we are also grateful for the collaborative arrangements and leadership of Technological University Dublin (TU Dublin) and the United Nations Institute for Training and Research (UNITAR) in supporting this enterprise. Both institutions have embraced the SDGs in their strategic orientations and, as evidenced in contributions to this call, mobilised their educators and learners to respond to the transformational challenges. This special issue sought to reflect on the need for educational systems and practices that support sustainable development by taking a closer look at the needs of our global society and communities, where we argue on the importance of educational frameworks that support pedagogical innovations as a way forward to empower our students/learners, researchers and academics that contribute to an effective and efficient educational transformation that embraces a proactive approach to towards a resilient, regenerative and more equitable future.

References

- Arrhenius, S. (1896). XXXI. On the influence of carbonic acid in the air upon the temperature of the ground. *The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science*, 41(251), 237-276.
- Bianchi, G., Pisiotis, U., & Cabrera Giraldez, M. (2022). *GreenComp: The European sustainability competence framework* (No. JRC128040). Joint Research Centre (Seville site).
- Dunne, J.L, Barry-Ryan, C., & MacMahon, C.H. (2024). Embedding sustainability in food degrees: A Case-study of service-learning as a signature pedagogy for developing food sustainability competencies. *Irish Journal of Academic Practice*, 11(2), 8. Available at: <https://arrow.tudublin.ie/ijap/vol11/iss2/8>
- Gallagher, S. & Murphy, P. (2024). Implementing inter-institutional lifelong sustainability education: The UNI-ECO e-learning case study. *Irish Journal of Academic Practice*, 11(2), 5. Available at: <https://arrow.tudublin.ie/ijap/vol11/iss2/5>
- Gottsche, J., Kelly, M. & Mc Grath, M. (2024). An Analysis of the Environmental Attitudes of Undergraduate Construction Management Students using the New Ecological Paradigm Scale. *Irish Journal of Academic Practice* 11(2), 7. Available at: <https://arrow.tudublin.ie/ijap/vol11/iss2/7>
- Government of Ireland (2023). *ESD to 2030: Second National Strategy on Education for Sustainable Development*. Available online at: <https://www.gov.ie/en/publication/02952d-national-strategy-on-education-for-sustainable-development-in-irelan/> (Accessed 23 January 2024)
- Kamphambale, D., Morales, L., MacMahon, C. H., & Coetzer, J. H. (2024). A Critical Reflection on the Importance of Education for Sustainable Development. *Irish Journal of Academic Practice*, 11(2), 2. Available at: <https://arrow.tudublin.ie/ijap/vol11/iss2/2>
- McAvinia, C. (2024). From Flagship to Flotilla? Findings from a Review of Literature on Learning Spaces in Higher Education, and Education for Sustainable Development. *Irish Journal of Academic Practice*, 11(2), 12. Available at: <https://arrow.tudublin.ie/ijap/vol11/iss2/12>
- O'Leary, C., & McDonnell, C. M. (2024). Embedding Development Education and International Service-Learning in Undergraduate STEM Programmes to Address Sustainable Development Goal Target 4.7. *Irish Journal of Academic Practice*, 11(2), 11. Available at: <https://arrow.tudublin.ie/ijap/vol11/iss2/11>
- Peev, Ivaylo; Coetzer, Jon-Hans; Barkoczi, Nadia; Stefan, Iulia; Todorov, Todor; Flynn, Patrick; Marian, Claudia; Munteanu, Sonia; Pop, Lia; and Morales, Lucia (2024) "Circular Pedagogy to Support Technological Universities Cultural Transformation," *Irish Journal of Academic Practice*: Vol. 11: Iss. 2, Article 4.

- Peev, I., Coetzer, J-H., Baskoczi, N., Stefan, I, Todorov, T., Flynn, P., Marian, C., Munteanu, A., Pop, L., & Morales, L. (2024). Circular Pedagogy to Support Technological Universities Cultural Transformation. *Irish Journal of Academic Practice*, 11(2), 4. Available at: <https://arrow.tudublin.ie/ijap/vol11/iss2/4>
- Rammelt, C. F., Gupta, J., Liverman, D., Scholtens, J., Ciobanu, D., Abrams, J. F., ... & Zimm, C. (2023). Impacts of meeting minimum access on critical earth systems amidst the Great Inequality. *Nature Sustainability*, 6(2), 212-221.
- Rawe, S. L., McGillicuddy, E. J., McDermott, S. D., Fennelly, M., & Behan, P. (2024). Fostering Student Engagement with the United Nations Sustainable Development Goals using an Escape Room. *Irish Journal of Academic Practice*, 11(2), 9. Available at: <https://arrow.tudublin.ie/ijap/vol11/iss2/9>
- Rodrigues da Rocha, O., Kamphambale, D., Coetzer, J-H., MacMahon, C. H., & Morales, L. (2024). Education for Sustainability–Are we Forgetting the Economic Dimension?. *Irish Journal of Academic Practice*, 11(2), 3. Available at: <https://arrow.tudublin.ie/ijap/vol11/iss2/3>
- Stewart, J., & Gorman, C. (2024). Authentic Assessment and Embedding Sustainable Literacy and Technology Skills in Tourism Education. *Irish Journal of Academic Practice*, 11(2), 10. Available at: <https://arrow.tudublin.ie/ijap/vol11/iss2/10>
- Tribello, G. A., Bates, C., & McGowan, C. (2024). Empowering lecturers and students with constructivist, community-engaged pedagogies to support sustainable development goals. *Irish Journal of Academic Practice*, 11(2), 6. Available at: <https://arrow.tudublin.ie/ijap/vol11/iss2/6>
- TU Dublin (2019). *Realising Infinite Possibilities. Strategic Intent 2030*. Technological University Dublin. Available online at: <https://www.tudublin.ie/media/website/explore/about-the-university/equality-and-diversity/TU-Dublin-Strategic-Intent-2030.pdf> (Accessed 23 January 2024)
- UN (2023) The Sustainable Development Goals report. Special edition. Available online at: <https://unstats.un.org/sdgs/report/2023/The-Sustainable-Development-Goals-Report-2023.pdf>
- UNSDN. (2017). Getting Started with the SDGs in Universities: A Guide for Universities, Higher Education Institutions and the Academic Sector. SDSN Australia / Pacific. Available online at: <https://resources.unsdnsn.org/getting-started-with-the-sdgs-in-universities> (Accessed 23 January 2024)
- UNSDSN (2020). Accelerating Education for the SDGs in Universities: A Guide for Universities, Colleges, and Tertiary and Higher Education Institutions. SDSN Australia / Pacific

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