



## **Climate change education and emotions**

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### ***Presentation abstract***

Education for Sustainable Development (ESD) is an important component of the UN recommended Sustainable Development Goals (SDGs). The higher education sector in the UK is committed to developing skills, awareness, and knowledge that makes a positive contribution to sustainability efforts.

While numerous studies focus on embedding ESD into the curriculum (Leal Filho, 2015; Navrouzoglou et al., 2024; Wall et al., 2024), there is a lack of research on the effect of ESD on students' emotional responses to climate change. Concerns around climate anxiety, particularly among young people, are growing (Hickman et al., 2021; Ogunbode et al., 2022; van Valkengoed et al., 2023). Therefore, it is crucial to design an ESD approach that has a positive impact on students, while fostering resilience and action without feeling overwhelmed or hopeless.

We conducted a study to investigate the ESD approach of an undergraduate Environmental Economics course and its impact on students' emotional responses to climate change. It explored students' thoughts, feelings, and experiences in engaging with climate change, as well as their perspectives on the effectiveness of educational programmes.

This study offers valuable insights for higher education programme leaders and educators, advocating for an educational approach that begins by creating feelings of hope as a

foundational step of ESD. This is followed by building awareness and, ultimately, empowering students to take meaningful action. By establishing a progression from hope to awareness to action, this approach can inspire positive engagement, provide young people with the tools to create sustainable solutions, and build their resilience to navigate the challenges of an uncertain future. Our poster outlines the rationale behind our research and design, along with the results of students' responses.

**Keywords:** education for sustainable development; sustainable development goals; emotional literacies.

### ***Community response***

This poster's positioning of ESD, as a constructive vehicle for hope and positivity, was appreciated for its valiance and ambition in contesting often enduring and overt media discourses of negativity and overwhelm in agency (or lack of agency) within conversations on climate change. Whilst embedding the aims and intentions of the SDGs within curricula and co-/extracurricular activities has been a tried-and-tested approach for many within the LD community to encourage students to reflect on a sense of global citizenship, perhaps the inclusion has often been aligned with the learning outcomes of a particular assessment, or the merits of engaging with a specific developmental initiative. In focusing on supporting students' emotional responses to significant volumes of information on climate change, potentially assumed responsibilities, and in helping them to find ways to relationally understand how they might affect action, this poster considered some of the practicalities associated with embedding ESD principles in learning and teaching, as well as highlighting the importance of scaffolding support for students' own sustainable responses.

An observer within the poster session considered the hope – awareness – action continuum suggested by the approach reflected on as an emancipatory gift to educators, in addition to the criticality, self-determination, and appreciative perspective it offered to learners. The observer commented that:

To frame an educational intervention in terms of hope is hugely powerful.

Freire's book *Pedagogy of hope* (1994) is framed in terms of overcoming oppression, but the idea of being brave enough to imagine an alternative world and how that can be enabled within pedagogy will be truly transformative (Lopez, 2022). We can use this approach to give our students a chance to question, critique, and dream, to take what they're learning and apply it in pursuit of creating something better. Surely there is no greater gift we can offer as educators?

### **Next steps and additional questions**

Reflecting on the comments at the poster presentation as well as in the community responses, we feel that this project can progress positively. We will embed the hope – awareness – empowerment – action continuum as suggested in the community response, but we are inspired to think a little more about adding detail and clarity to the continuum. We will be engaging more deeply with the work by Freire (1994) and Lopez (2022). An audience member, Joy Igiebor (University of Birkbeck) gave some valuable feedback during the presentation about the importance of hope and what our work can add to wellbeing and a healthier learning community. It was heartening to receive such a positive response from several audience members regarding this work. As anxiety about so many aspects of life grip our students (and us), it is important to consider how can education be a catalyst for hope, paving way to finding meaningful solutions and personal fulfilment.

### ***Authors' reflection***

Thank you to the conference audience, for your comments and suggestions. We appreciate the engagement of our wonderful students, without whom this project could not have progressed. The experiences and comments of our past students were instrumental in motivating us to embark upon this research. This project has been so fulfilling and a continuing journey for us as educators. We will continue to explore this in the coming academic year to get more data and insights.

Climate change is a source of growing emotional and psychological stress, particularly among young adults. Our study explores how climate change education can shape these emotions and empower students. We focused on an honours course, Environmental Economics, and surveyed students before and after the course. Although not many students responded, we were able to get an insight into what we want to explore.

In the poster that we presented, we showed that students who were directly affected by climate change reported more negative emotions while others were more hopeful. We were encouraged by the positive impact of pedagogic changes in the course, such as integration of inspiring stories, structured knowledge development, and engagement with the authentic projects. By the end of the course, the level of empowerment, optimism, and shared responsibility increased. While students felt powerless due to political inaction, the course helped increase a sense of agency and willingness to act.

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## ***References***

Freire, P. (1994) *Pedagogy of hope: reliving pedagogy of the oppressed*. Edited by A.M.A Freire and P. Freire. New York: Continuum.

Hickman, C., Marks, E., Pihkala, P., Clayton, S., Lewandowski, R.E., Mayall, E.E., Wray, B., Mellor, C. et al. (2021) 'Climate anxiety in children and young people and their beliefs about government responses to climate change: a global survey', *The Lancet Planetary Health*, 5(12), pp.863-873. Available at: [https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196\(21\)00278-3/fulltext](https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(21)00278-3/fulltext) (Accessed: 10 August 2024).

Leal Filho, W. (ed.) (2015) 'Education for sustainable development in higher education: reviewing needs', in *Transformative approaches to sustainable development at*

*universities*. World Sustainability Series. London: Springer Cham, pp.3-12. Available at: [https://doi.org/10.1007/978-3-319-08837-2\\_1](https://doi.org/10.1007/978-3-319-08837-2_1)

Lopez, P.J. (2022) 'For a pedagogy of hope: imagining worlds otherwise', *Journal of Geography in Higher Education*, 47(5), pp.792-804. Available at: <https://doi.org/10.1080/03098265.2022.2155803>

Navrouzoglou, P., Kushwah, L. and Selvaretnam, G. (2024) 'Using a group podcast and policy brief in an economics undergraduate course to enhance sustainability literacy, communication and teamwork skills', in T. Wall, L. Viera Trevisan, W. Leal Filho, and A. Shore (eds) *Sustainability in business education, research and practices*. World Sustainability Series. Switzerland: Springer Cham, pp.41-62. Available at: [https://doi.org/10.1007/978-3-031-55996-9\\_4](https://doi.org/10.1007/978-3-031-55996-9_4)

Ogunbode, C.A., Doran, R., Hanss, D., Ojala, M., Salmela-Aro, K., van den Broek, K.L., Bhullar, N., Aquino, S.D. et al. (2022) 'Climate anxiety, wellbeing, and pro-environmental action: correlates of negative emotional responses to climate change in 32 countries', *Journal of Environmental Psychology*, 84, 101887. Available at: <https://doi.org/10.1016/j.jenvp.2022.101887>

United Nations (n.d.) *Sustainable Development Goals*. Available at: <https://www.un.org/en/exhibits/page/sustainable-development-goals> (Accessed: 14 August 2024).

van Valkengoed, A.M., Steg, L. and de Jonge, P. (2023) 'Climate anxiety: a research agenda inspired by emotion research', *Emotion Review*, 15(4), pp.258-262. Available at: <https://doi.org/10.1177/17540739231193752>

Wall, T., Viera Trevisan, L., Leal Filho, W. and Shore, A. (eds) (2024) *Sustainability in business education, research and practices*. World Sustainability Series. Switzerland: Springer Cham

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