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From Implicit to Explicit: Enhancing Sustainability Education through Student Collaboration

As the climate emergency intensifies, civil engineers encounter a growing responsibility to deliver sustainable solutions. Higher education institutions play a vital role in equipping future engineers with the skills and perspectives necessary to face this challenge. This study examined the current integration of Education for Sustainable Development (ESD) into the civil engineering curriculum at the University of Leeds. It explored ways to enhance its implementation in practice.

The research combined a curriculum review of programme module descriptors with a student questionnaire and focus group. This allowed for an analysis of both the formal delivery of sustainability content and students' lived experiences engaging with it. Findings revealed that while sustainability themes are present, they are often implicit and disproportionately focused on environmental issues, with limited attention to social and economic aspects and minimal explicit links to the UN Sustainable Development Goals (SDGs). Students expressed confidence in their knowledge but found it challenging to identify where competencies had been developed or how to demonstrate them to employers.

Working collaboratively with students, the project devised strategies to improve the visibility and integration of sustainability skills. Key practice recommendations include embedding sustainability consistently across programmes rather than limiting it to isolated modules; making skills explicit in assessments and feedback so that students can recognise their progress; and surfacing competencies through digital tools like e-portfolios, providing students and employers with a clearer view of graduate capabilities. Strengthening collaboration with industry partners is also recommended to ensure that teaching reflects the wide range of sustainability challenges graduates will encounter. These insights are broadly applicable across engineering education, offering a pathway to bridge the gap between policy aspirations and student readiness for sustainable practice.