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Innovative Approaches for Research Led Education: UCC's Green Campus Living Laboratory Programme

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Introduction

Ireland's National Strategy on Education for Sustainable Development (2014-2020), highlights the need to equip students with "the relevant knowledge (the 'what'), the key dispositions and skills (the 'how') and the values (the 'why')" to contribute to a more sustainable future (Department of Education and Skills, 2014). Delivering on this challenge requires embedding sustainability within both the formal and informal learning that occurs on campus (Hopkinson et al. 2008), while also integrating sustainability both within and across disciplines (Byrne et al., 2018).

UCC is a global leader in sustainability in higher education, being the first University in the world to be awarded a Green Flag from the Foundation for Environmental Education (Reidy et al, 2015). Sustainability at UCC is "student-led, research-informed, and practice-focused" that is, the programme takes an integrated approach and aims to utilise the collective student *agency* and research *capability* to deliver real and lasting change on the ground (Pelenc et al. 2015).

UCC's Academic Strategy, with sustainability and interdisciplinarity as key components of the new "Connected Curriculum", aims to "facilitate students to develop values, skills and aptitudes that promote civic participation, social inclusion, sustainability, digital fluency and impactful, global citizenship" (UCC, 2018). A key aim of delivering its Sustainability Strategy is that UCC would become a "Living Laboratory", where students, academics and practitioners work together, using the campus itself as a testbed for solutions to today's major societal challenges (UCC, 2016). A Living Laboratory project should aim to:

- Solve a real-life problem
- Be based on a partnership among key stakeholders, often crossing disciplinary and/or sectoral boundaries
- Trial and test ideas in real life settings
- Share data and findings generated openly (EAUC, 2017).

Methods

In December 2018, UCC Green Campus launched a "Living Laboratory" Programme call to fund research and Masters demonstrations "action-research" projects that addressed sustainability on campus. A fund of €88,000 was made available; the call was open to all staff of the university (research, academic and professional services) and collaboration with community groups was encouraged. Students were encouraged to submit applications, provided they had identified a suitable supervisor. In April 2019, 6 projects were awarded funding; the projects began in September 2019. The topics cover area as diverse as wellbeing, human-nature interactions and single-use plastic reduction.

Findings

The idea of a Living Laboratory is not new, however a centrally managed programme, that includes an academic qualification on completion, is not common. The approach taken in UCC was that the initiation and development of the programme should serve as a Living Laboratory project in itself; the learning from this process would be reflected upon, assessed, and shared. It is widely cited both within the literature and policy documents, that inter- and trans- disciplinarity are key components of Education for Sustainable Development. However, within the silo-ed nature of university systems, working across disciplinary boundaries presents significant challenges. To date, advances in this area are often ad hoc and occur in spite of the system as opposed to because of it. The "Living Laboratory" programme has provided a framework within which these types of projects can be supported and awarded. However, it was not without its challenges. These included:

- The assessment of transdisciplinary project proposals requires broad knowledge of all fields involved as well as a grasp of what will work in practice.
- Including professional services staff within the remit of the call was key to ensuring transdisciplinary, however it raised issues of how to allocate staff time to activities that would traditionally be seen as "voluntary".
- Differing durations of Masters projects within different schools e.g. within the Engineering Department a research Masters is 1-year in duration while within the Sociology Department they last 2-years. Determining the optimal duration of a projects that span both of these departments proved challenging.

Conclusions

UCC's Green Campus Programme has traditionally provided an informal learning opportunity for students to experience real-world solutions to sustainability. The "Living Laboratory" programme formalises this type of learning within the structures of the university. As such it provides a framework for inter- and transdisciplinary research to take place; it also gives the broader UCC community the *agency* to undertake Green Campus projects specific to their own *capability* (Pelenc et al. 2015). Conversely, it could be argued that the programme provides funding to selected groups to carry out projects that, until the initiation of this programme, were undertaken voluntarily and driven by "bottom-up" activism. The interplay between bottom-up and top-down processes in campus sustainability transitions is often seen as a "struggle" that needs to be carefully managed; however, it also provides a novel testing ground for similar struggles in broader society (Lombardi and Sonetti, 2017).

The impact of the programme on actual campus sustainability is yet to be determined. Recommendations for future iterations include:

- Establish an Academic Advisory Committee composed of members of each college in the University who are knowledgeable of subject areas and individual school procedures.
- Ensure the Advisory Committee also has membership from the student body. The student body should also be represented on the assessment panel.
- Engage with the University Civic Engagement Committee (or equivalent) to work towards official allocation of some staff time to "voluntary" projects.

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