GreenCampus Audit: Link to learning

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Summary

In 2015, an audit of modules taught revealed that NUIG offered 196 modules relating to environment and/or sustainability (Rau and Stewart 2015). As part of the NUIG Green Campus application, a second audit reviewed the curriculum since 2015. Staff, undergraduate and postgraduate students collaborated to identify key terms to search the online curriculum. This exercise demonstrated that, NUI Galway has increased its modules that raise awareness of environment, nature and sustainability to 231. These *green* modules are distributed across the seven colleges of NUI Galway with the College of Science offering the largest number of modules (109) followed by the College of Arts, Social Sciences and Celtic Studies. To obtain a more detailed account of the delivery of green modules at NUI Galway, this data was broken down further into the number of modules offered at an undergraduate or postgraduate level. First year environmental science students and staff searched for the module descriptions, indicative content and learning outcomes, and collated that information, where provided on the online curriculum management system. A high proportion of modules across most of the colleges have no associated information available online, apart from the College of Engineering. The College of Engineering is to be commended for this. Overall, most relevant modules are taught at undergraduate level. This study shows that sustainability is taught across disciplines in all colleges. With one change to the online module management system it would be possible to evaluate more precisely the depth and extent of sustainability education. The authors recommend that a similar exercise take place in 2019 as updates to the online system can be made to ensure the additional information is provided.

Introduction

""Sustainability Literacy" is the knowledge, skills and mindsets that allow individuals to become deeply committed to building a sustainable future and assisting in making informed and effective decisions to this end".

Source: https://sustainabledevelopment.un.org/sdinaction/hesi/literacy

At a global level, HEIs play an important role in integrating UN SDGs through teaching, research and leadership (HESI 2017). HEI staff and students have the potential to drive delivery of UN SDGs (HESI 2017). To advance the sustainable development agenda, HEIs can demonstrate sustainability in what

they do, how they do it and how they share this knowledge. Firstly, they must be a **green campus.** They must raise awareness of sustainable development across all disciplines through their research and teaching. They must connect with local sustainability efforts, and with international networks.

SDG4 is of particular interest for the Foundation for Environmental Education in Europe (FEEE), which awards a green flag to eco schools and universities throughout Europe that have successfully implemented a green action plan. In Ireland, An Taisce, (National Trust for Ireland) awards the GreenCampus flag, on behalf of the Foundation for Environmental Education in Europe.

In November 2017, NUI Galway launched its Sustainability Strategy. This sets out how NUI Galway aims to be one of the greenest, healthiest and smartest universities worldwide, utilising the LIVE LEARN LEAD model. A key action of the **Sustainability Strategy** is to apply for and be awarded the GreenCampus Flag by An Taisce.

A previous study catalogued the scope and scale of environmental and sustainability education at NUIG, using both undergraduate and postgraduate prospectuses. This set the baseline at almost 200 modules (Rau & Stewart 2015). The aim of this short study was to review the baseline, and determine the breadth and depth of sustainability related teaching currently across all the disciplines within the university. The academic curriculum at NUI Galway is now managed online through the AKARI system, which at a minimum, provides details about the course and module title, course and subject level. In many cases, it also provides details on the delivery of modules, including indicative content, learning outcomes, and assignments. Within the last two years, new courses and modules have come on stream, but modules and staff have retired.

Given this level of change and the proposal to apply for a green flag, the aim of this update was to review and assess the current level of green or environmental modules taught at NUI Galway.

Methodology

The information from the baseline study was stored in an excel sheet. As there are almost 8000 approved modules contained within the online curriculum management system, three phases were undertaken to ascertain the teaching of sustainability.

1. Adrienne Keane from Information Systems and Solutions & Caitriona Carlin (CC) investigated the online module manager to see whether new courses had been created since 2015
2. Francis Sheridan, Sean Keane contacted Henrike Rau and Jamie Goggins and came up with search terms based on the initial report. From a further meeting with Caitriona Carlin, the students identified 20 key words related to sustainability
3. 1EV, CC further broadened this to 49 stem searches which were applied to all active and approved modules.

Phase 1: AK & CC confirmed that new courses and modules had been created since the first report on sustainability education was compiled.

Phase 2: The Akari system was searched for the active and approved modules in NUI Galway linked to the environment, nature and sustainability. A small group of staff and students agreed twenty search terms that provided an overall representation of green courses in NUI Galway. Search terms such as agriculture, climate change and energy were classified as being linked to the environment

while search terms such as invasive, flora and fauna were classified as being linked to nature. The modules found from these search terms were then broken down into the various colleges to reflect the distribution of modules. (Note that the university currently comprises seven colleges (College of Arts, Social Sciences and Celtic Studies, College of Medicine, Nursing and Health Science, College of Business, Public Policy & Law, College of Engineering & Informatics, College of Science, Adult Learning and Professional Development and The Burren College of Art)). This information was displayed in a series of pie charts.

Phase 3: 1EV in conjunction with Gesche Kindermann and Caitriona Carlin completed a brainstorming event to extend the search beyond the existing 20 terms from the second phase. A further 29 terms were included. For phase 3, terms were restricted to stem searches to include all possible derivatives of a particular search term. Forty nine stem searches were carried out: protect*, preserv*, sustainab*, partnership, habitat*, species, pollut*, survey*, human, interaction, connect*, management, communication, resources, species, global warming, exploration, ecofriendly, responding, understand, social, develop, directive, energy, ecosystem, animal, plant, nature, horticulture, air, water, earth, ocean, marine, renewable, climate, law, agri, geolog*, hydrolog*, psycholog*, biochem*, microbi*, geograph*, zoolog*, botan*, ecolog*, forestry, environment* The terms were initially allocated to the students, and quality was controlled by a member of staff who undertook the same searches. As module titles potentially could comprise a number of search terms, the selected modules were reviewed to remove duplicates. Modules were assigned first to undergraduate and postgraduate levels. Indicative content, Learning Outcomes and Module descriptions were reviewed where provided to provide a more detailed assessment of the extent of sustainability education delivered at NUI Galway. The information provided was summarised according to the level of sustainability related content.

Results

There are almost 7500 active modules approved on Akari. Unfortunately, not all active modules provide detailed content, so some modules could not be assessed beyond the title or the expert opinion of the reviewers. Overall, 231 modules were considered to have a link to learning on green campus themes (see figures 1 and 2), most within College of Science (109), and within Arts, the School of Geography teaches the second highest number of modules (46), and College of Engineering is next with 36 modules. However, an interesting result is the spread across all colleges.
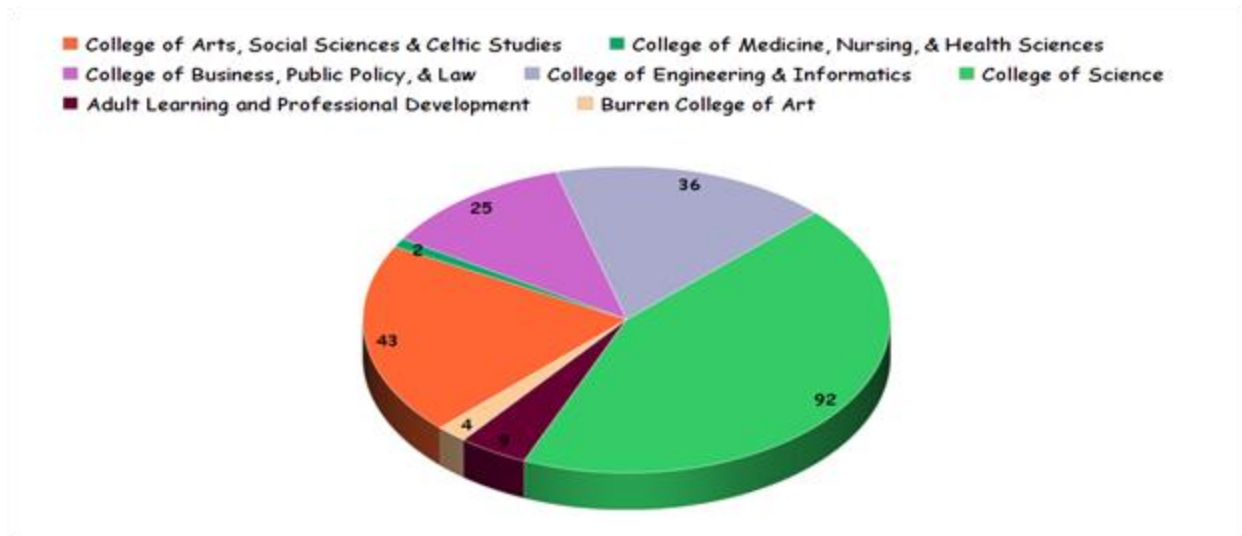
Figure 1 Distribution of modules focused on environment and sustainability according to the seven colleges
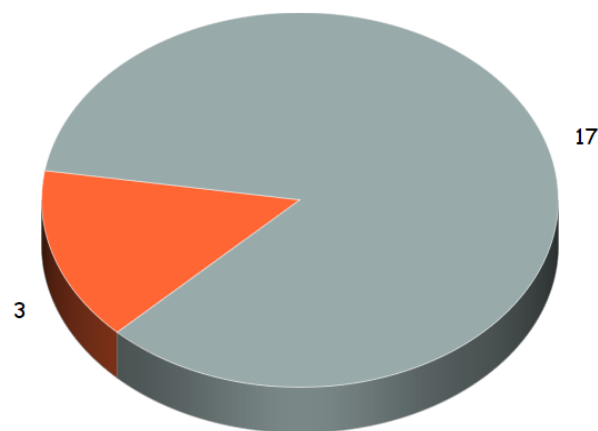

Figure 2: Other environmental/sustainability courses with an emphasis on nature

Discussion

This assessment has shown that sustainability is taught across all disciplines. Overall, College of Science, College of Arts, Social Sciences and Celtic Studies (School of Geography in particular) and College of Engineering deliver most sustainability related modules. Most of this is carried out at

undergraduate level. However, this assessment of 231 modules is likely to be incomplete as there is insufficient information provided about many modules online. Some colleges, such as College of Engineering have made more use of the online management system to display learning outcomes, as well as indicative content and module descriptions. In discussions with administrative staff and AKARI advisors, this can be changed when the online system is open for updates again, by ticking one button and saving the learning outcomes. Without this level of information, the evaluation is based on the title or other web-based information only. However, sustainable topics may be taught as a minor component of a broader module. As such, that information may not be reflected in the title. Students highlighted the need to highlight how the online system could be used to ensure that all relevant information was provided.

Students also discussed the fact that though some colleges appear to teach very little on sustainability, this might be negated by the fact that some modules are open to students from other disciplines. This has not been captured by this current exercise but once the AKARI system has been updated, it could be another method of cross-referring the level of sustainability teaching.

Students suggested that where there appeared to be a lack of sustainability related teaching, there may be opportunities within introductory modules to provide context relating to the Sustainable Development Goals in the first year of the course. Within final year modules, students suggested including a topic or workshop relating sustainability and specific professional practices.

Students also highlighted the fact that prior to carrying out this exercise, they were unaware of the level of sustainability related teaching undertaken across NUI Galway. In relation to NUI Galway's goal to be green, clean and smart, this is an opportunity that should not to be missed.

Recommendations

1. Meet with AKARI and College staff to promote awareness of the value of AKARI to provide detailed information regarding the extent of sustainability teaching
2. Repeat this exercise once AKARI is online again, to assess the depth and extent of information provided from the learning outcomes, etc.
3. Undertake an annual review of modules to capture changes in active/retired/new modules.
4. NUIG could promote the level of sustainability teaching undertaken at undergraduate and postgraduate level.
5. Liaise with college marketing staff to ensure CAO brochures and web based information is updated to raise awareness of the extent of environmental and sustainable teaching carried out at NUI Galway.

Conclusion

Overall, a high level of sustainability teaching takes place at NUI Galway. The extent of sustainability teaching varies throughout all colleges. However, a more detailed assessment of the breadth and extent would be possible with a minor change applied by all module owners making changes to their modules on the online management system. Sustainability education is relevant for all disciplines and should be promoted internally and externally in keeping with the Sustainability Strategy.

References

Rau, H & Stewart D (2015). NUI, Galway Green Campus Committee Course and Module Audit Report. School of Political Science and Sociology. NUI Galway.