For: The Digital University and new learning technologies
(DU)

'A SPOC with a Twist: The Sustainability in Practice Certificate'
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This paper presents preliminary findings on how students perceived a newly developed online certificate at a large UK HEI, which was seen by the creators as inspirational and as meeting some of the expectations of current students. The holistic approach chosen encompasses various trends in the Higher Education Sector - digital inclusive learning, interdisciplinary thinking, problem based learning, real-world problem solving, collaborative working, students as co-creators of the curriculum and education for sustainable development.

There is emerging agreement that education for sustainable development needs to be embedded into HEIs in order to equip students with the skills and knowledge to address future challenges with regards to economic, social and environmental sustainability (QAA 2014). However it can be a challenge for universities to embed sustainability given the existing structure and the often lengthy process to change the curriculum (Ryan and Tilbury 2013). The Sustainability in Practice Certificate at our HEI offers the chance to give all students in the whole university (approx. 25, 000) simultaneous access to sustainability related knowledge without changing the core curriculum. It also fulfils the need of employers that our students can demonstrate the appropriate skills. A large survey with CEOs (Lacy et al 2010) identifies that 72% of CEOs state the failure of the education system as a key challenge for future sustainability and encourage universities to equip their students with better skills to solve current and future problems.

Several authors (Stibbe 2009; Courtice and Van der Kamp 2013; Molthan-Hill 2014) have indicated that subject-specific knowledge will not be sufficient to develop students who can deal with sustainability challenges appropriately. Stibbe (2009:10f) wrote the first 'Handbook of Sustainability Literacy' illustrating its different aspects and defining the term as follows:

> *"This book uses the term Sustainability Literacy to indicate the skills, attitudes, competencies, dispositions and values that are necessary for surviving and thriving in the declining conditions of the world in ways which slowdown that decline as far as possible. Gaining practical skills requires a form of learning which goes beyond memorising and repeating facts. It requires active learning, a broad term used to refer to self-reflection, self-directed enquiry, learning by doing, engagement with real life issues, and learning within communities of practice."*

These aspects could include topics such as 'Ecological Intelligence' (Sterling 2009), 'Commons Thinking (Kenrick 2009) and 'Systems Thinking', seen as a fundamental concept in

sustainability (Clayton and Radcliffe 1996; Meadows 2008; Robertson 2014). The different skill sets, the subject-specific knowledge and most of the sustainability literacy skills were integrated into the certificate.

Schoemaker (2008:120) criticises lecturers for liking to teach well-defined problems and frameworks without offering support in how to deal with the"messy ambiguities of the real world". Systems thinking encourages acceptance of the complexity of the world and suggests ways of dealing with the massive amounts of information and interconnectedness. Furthermore, Robinson (2009:131f) pointed out:

> *"It is essential that learners are introduced to 'real world' examples and case studies. This could involve, for example, engagement with local organisations and employers or their own institutions by conducting informal environmental audits for them or researching the activities of larger organisations to expose environmentally damaging practices and to identify paths for improvements."*

As outlined in the new guidance issued by the QAA (2014: 5) problem-based learning and real world problem solving can be closely linked to the skills, attributes and knowledge associated with "a future-facing outlook; learning to think about the consequences of actions, and how systems and societies can be adapted to ensure sustainable futures". In the certificate, students were asked to offer their solutions at several points and in the assessment. Students were made aware that we might wish to use some of their ideas and material as teaching resources in the future across the curriculum.

The certificate was designed in the style of a SPOC (Small Private Online Course) and was based entirely online. The assessment was centred on a video submission, where students had to demonstrate how their discipline is engaging with sustainability and food. In addition, we employed various digital pedagogies to keep the learning environment active and to facilitate skills such as critical thinking and communications. Digital artefacts such as videos, prezis, quizzes and discussion forums were the basis of the certificate learning activities and participants had to conduct their own online research.

The certificate was offered as an option in addition to their degree and about 3300 students chose to give it a try. Despite 2700 students finishing the first session, only 120 students submitted a video, the required assessment to gain the certificate. Many questions arise from this: What can we conclude from the students' feedback about how they view such education? Do they value learning about other disciplines? Do they value collaborative working and online learning? Do they care about sustainability? Did the chosen form of assessment - producing a video - or the content of the assessment meet students' expectations? Or did it result in some students disengaging? Many students suggested in session 4, excellent examples on how to solve real world problems around food and sustainability, how do they reflect on this experience? Do they think it will influence their future engagement in real-world problems?

These and other questions were posed in a questionnaire to all 3300 students, whether they completed the certificate or not; further investigated in two focus groups. 206 students responded, of which 21% received the certificate, the others dropped out at different points. Some claimed that they did not complete the certificate because of the assessment method. But overall, students were very positive and the majority of students, who did not finish the certificate, would like to be given the chance to do so in the next Academic Year. Many made concrete suggestions on how to improve the certificate, from design over applicability to their course to assessment task.

Conclusions drawn from the questionnaires and the focus groups will be summarised at the conference and ways forward will be indicated as to how to improve the certificate based on these insights.

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