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Small steps together: a resource to support low-threshold interdisciplinary encounters in Higher Education

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Research Domains

Learning, teaching and assessment (LTA)

Abstract

How can academic developers support staff and students with interdisciplinary encounters and build students' self-efficacy to apply their disciplinary knowledge to important nexus problems? This paper provides a conceptual framework and practical resource to facilitate interdisciplinary encounters, so students may explore and experience cooperation across disciplines on problems which require a multi-stakeholder approach. The pressured institutional and socio-economic environment of teaching and learning in Higher Education conflicts with the aims to equip students to navigate the big problems of their generation. Education for Sustainability (EfS), for example, aims to prepare students to work across disciplines and settings, but learning such integrative behaviours is demanding for students and staff. Drawing on the concept of boundary objects, the literature on interdisciplinary teaching and learning and EfS scholarship, the paper discusses how Visual Abstracts of interdisciplinary research papers can facilitate the introduction of low-threshold encounters between students from different subjects within the curriculum.

Full paper

Education for Sustainability (EfS) aims to be transformative, preparing students to work across disciplines and settings, on problems with multiple interest holders (Vogel et al, 2023). These encounters are demanding for students, as they learn integrative behaviours to contribute their own knowledge and engage with others', synthesising new approaches. Designing and supporting this is no less demanding for educators. In today's pressured Higher Education climate, educational developers seek low-threshold approaches to avoid overwhelm and work with the grain of disciplinary cultures.This paper introduces a theoretically informed resource to promote encounters between students from different disciplines, based on visual abstracts of research articles relevant to sustainability and their respective learning outcomes (for example Wallen-Russell 2023).

Drawing on the literature on interdisciplinary teaching and learning, we focus on the competency of interdisciplinary knowledge integration (Horn et al. 2022). Fostering integrative behaviours in students requires that they connect each other's specific disciplinary interpretations of an issue to create a shared understanding. This presupposes creating encounters for students to engage in conversations beyond their degree subject and make sense of how their own budding expertise can be useful and complementary to others. Conceptualising students' epistemic stability and adaptability (Horn et al, 2022) helps with identifying when this encounter could be most fruitful, and how to scaffold it. As an explicit part of the curriculum, these encounters are relatively rare and HE's institutional structures disincentivise stakeholders to embrace interdisciplinary problem solving as a core graduate competency (Stentoft 2017). Nevertheless, considering the prioritisation of such competencies in the EfS literature (Vogel 2023) and the transformative changes enabled by collaboration between academics, students and education developers as well as inspired by successes of virtual exchange programmes, we present a hopeful case for small steps to scaffold students' capacities for interdisciplinary knowledge integration.

Drawing on Star's concept of boundary objects (2010), we identify qualities of these abstracts which bring a balance of focus and flexibility of perspective, stimulating students to apply and advance their own disciplinary learning while also interacting with others'. On this basis we highlight the potential of Visual Abstracts of research into nexus sustainability problems involving ecology, society and economics. Boundary objects can be conceptualised as artifacts (things, concepts, processes) that have interpretive flexibility. They are meaningful to different people in different disciplines with their different perspectives, but with a structure that is recognisable across those domains. They allow for well-structured use in one discipline and negotiated use between domains. Boundary objects fulfil a bridging function between the different disciplinary worlds with their different organising principles and activity systems. Boundary objects are a "nexus of perspectives" (Akkerman & Bakker, 2011). They help people collaborate and coordinate in the absence of a shared world view.

Based on these theoretical reflections, and rooted within their creative pedagogies, we designed a set of activities adaptable across subjects. Practically, the paper introduces a series of short activities that can be undertaken simultaneously in two modules of different subjects. The virtual abstract as a boundary object can help students recognize where they can employ their subject knowledge to contribute and where they need others' perspectives to reach a better understanding of a nexus problem. They get matched with students from another discipline to initiate a synchronous our asynchronous conversation or interview. They meet again within their home module group to reflect on their learning. Education developers can support educators with a library of abstracts, to support them with finding partner modules to collaborate and adapt the resource to the learning outcome of their module. The authors presented the prototype resource at the occasion of a series of workshops and refined the activities based on educator and student feedback.