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Note

A Goldilocks approach to transdisciplinary learning: On fostering transformative experiences through transdisciplinary honour's courses.

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Introduction

In today's world, education is increasingly being called upon to do more. Beyond transmitting knowledge, we need to cultivate both capability and agency in learners to navigate the complexity and uncertainty of our time. When combining knowledge and capability in training, students become 'T-shaped' (Kueffer et al., 2012): people with deep expertise (vertical bar) and the ability to collaborate across fields with experts in other areas and apply their expertise in other domains than their own (horizontal bar). I follow professor Kueffer, his colleagues, and other researchers (e.g. Cornell et al., 2013) and argue that transdisciplinary courses in higher education can develop both knowledge and capability, address demands for societally robust knowledge production, and instigate transformative learning outcomes. However, we must be attentive to how we challenge students to maximise the learning potential.

Reflections

Pohl identified four general characteristics for transdisciplinary processes in research (2011). It is research concerned with (1) solving complex societal issues in (2) collaboration with non-researchers, and it aims to (3) seek out and (4) unify different perspectives into one understanding; Transdisciplinary learning in higher education courses replicate these characteristics: students are brought together in problem-, project-, or challenge-based formats to work on a complex, real-world, open-ended problem with societal partners to learn how to frame problems, explore, negotiate and align meaning with others, and iterate solutions in response to feedback and new information. Working like this on such problems confronts students with the real-world ambiguity that professionals, researchers, and

citizens face daily and encourages learning-by-doing (Ball, 1999). It allows for taking initiative and taking responsibility of your learning.

The learning potential of being immersed into a transdisciplinary research project within the safety of an educational environment deserves further investigation. For example, from my own experience of participating in a transdisciplinary innovation lab at KU Leuven (Sandler et al., 2024), I discovered how I can help shape real-world outcomes and I began to understand my strengths. Of course, honours education attracts a particular type of student who is motivated to learn beyond the standard curriculum. Yet, I had never considered myself to be one of them. Due to the smaller class sizes I found myself contributing more meaningfully and applying my disciplinary knowledge and skills and experimenting with new techniques and different tasks. I built a closer rapport with peers from other disciplines and educational levels and teachers. The combination of honours pedagogy (Wolfensberger, 2012) and the transdisciplinary innovation lab format where we worked together with peers and societal partners to tackle real-world complex problems instilled more capability, agency, and confidence.

Under the right circumstances, being immersed in a transdisciplinary research project and collaborating with others has transformative potential. The task of building transdisciplinary understanding by integrating differences across, between and beyond the perspectives in the student group requires a willingness to move beyond familiar frames of reference. Though navigating differences is not easy. It is natural to our human condition to react dismissively when something does not rhyme with our own perspective. A confrontation with new and/or disorienting experiences occasions interruption and it is how we react to that determines whether it becomes transformative or not (Mezirow, 1991).

This is where teachers can help by providing tools and prompts to unlock the transformative learning potential. In Mezirow's transformative learning theory (Mezirow, 1991) our way of understanding the world around us is called a meaning scheme. It can be transformed by disorienting experiences. For example, teachers could leverage boundary objects that highlight differences and cause disorientation. For example, by providing narrative materials such as quotes that challenge students with alternative experiences or interpretations (Nicholas, 2017). Through individual and group reflections these quotes are explored in a process of collaborative sense-making and a unified understanding sought out.

Socio-constructivist thinkers such as Vygotsky help to make us attentive of "the zone of proximal development" (Eun, 2017; Ness, 2020); a sort of 'Goldilocks principle' to teaching. Students must be challenged with something that is neither too familiar, nor too different. It has to be just right to stimulate learning. Socio-constructivist theory provides a useful lens to apply to teaching practices for transformative learning where the way a student "experiences, conceptualises and interacts with the world" (Hoggan, 2016: 71) is significantly transformed. Introducing too little difference with the student's perspectives leads only to confirmation of what is already known, while too much leads to refusal or denial. Neither seem desirable as the meaning scheme remains unchallenged in the end.

This holds true not only in classroom cases, but also to building a cross-European student community. International communities are great to share learning experiences across borders among like-minded people. It exposes students to diverse cultural perspectives and

educational traditions, expanding their worldview and deepening empathy. Working across languages, disciplines, and national contexts compels students to articulate ideas clearly, listen actively, and be flexible. Additionally, students gain a sense of belonging to something larger than themselves. Yet, it is important to consider how these experiences are carefully aligned and exhibit sufficient similarity; neither too much, nor too little, but just enough to enhance the learning.

Conclusions

From my personal experience, I am a strong supporter of the transformative potential in honours and transdisciplinary formats of education, particularly when this goes hand in hand with efforts to build international communities allowing students to share and discover experiences and insights. However, teachers must remain attentive to challenge students according to the Goldilocks approach: inducing students to question their meaning schemes just enough to expand their understanding.

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