Title: *Developing the effectiveness of teams through trans-disciplinary approaches to addressing 'wicked problems'*

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Session Learning Outcomes

By the end of this session, delegates will be able to:
• relate and distinguish between transcdisciplinarity, multi- and inter-disciplinarity
• comprehend the philosophical basis for transdisciplinarity
• appreciate the relationships between chaos, complexity and emergence from a transdisciplinary perspective
• recognise that development of empathy, active listening and effective communication through dialogue are essential for transdisciplinary approaches to working in groups and teams
• employ practical strategies for developing skills in transdisciplinarity in groups and teams
• examine complex 'wicked problems' from different perspectives using a transdisciplinary approach in groups and teams
• operate more comfortably in a space of ambiguity and paradox in groups and teams

Session Outline

Key issues to be addressed are:
Transdisciplinarity, multidisciplinary and interdisciplinarity
Transdisciplinarity is an action oriented approach, based on a participatory worldview that transcends disciplinary boundaries for pragmatic solutions to societal (including educational) issues. It is distinct from inter- and multi-disciplinary perspectives in that it enables new insights to emerge through creative dialogue above and beyond the individual disciplines (Nicolescu, 2014).

Addressing 'wicked problems' using transdisciplinarity
Transdisciplinarity moves away from linear, reductionist and mechanistic modes of thought towards holistic modes that are ideal for tackling wicked problems (Brown et al., 2010). Wicked problems are complex and contain ambiguities, paradoxes and tensions within them and between stakeholders. Creative emergence of potential solutions can occur through developing effective relationships between individuals working together in transdisciplinary teams, which can be supported to develop abilities in empathy, active listening and effective communication through dialogue. Thus, transdisciplinarity is ideally suited to addressing

wicked problems emerging out of supercomplexity (Barnett, 2000) and could help contribute towards the development of the ecological university (Barnett, 2011).

Applications of Transdisciplinarity in Higher Education

In the context of the themes of the conference, this workshop is relevant to those working across disciplinary and administrative boundaries within universities to facilitate change in various areas. Universities are rich and complex organisations in which there are many wicked problems that academic staff have to regularly wrestle with together in groups or teams; e.g. policy and strategy development, course and programme design, student support systems etc. We have used transdisciplinary approaches in our own institution in a successful co-curricular pilot module with undergraduate students from various disciplines, giving them a broader perspective of global issues and developing graduate attributes and transferrable skills. We have also worked with transdisciplinary teams of academic staff developing undergraduate elective modules tackling; e.g. climate change, antibiotics, ageing and green transport.

Session Activities and Approximate Timings

Activity	Time
1. Brief Introduction to transdisciplinarity	10 min
2. Empathy, communication and active listening exercise: sharing meaningful learning experiences	10 min
3. Identify a potential transdisciplinary undergraduate module i. Introductions of individuals at each table (discipline, admin roles, skills etc) ii. Based on the disciplinary experience and skill sets of individuals at each table, identify a mutually agreeable title for an undergraduate module, which will engage students from different disciplines in addressing a 'wicked problem' of relevance to issues in society locally or globally using a transdisciplinary approach.	25 min
5. **Develop the transdisciplinary undergraduate module** i. Concept map the undergraduate module (flip chart sheets and coloured marker pens); identify learning approaches, activities, outcomes, type of assessment etc; ii. Identify key stakeholders you would have to convince within the university and in the community to make this module happen; work in groups to dialogue/role play stakeholders; recognise paradoxes and ambiguities which arise and result in impasse; facilitate thinking and communication processes to transcend issues and enable creative emergence of potential solutions.	25 min
6. Review of concept maps produced at each table i. Discussion of the process: challenges, opportunities, tensions. ii. Did the groups get to a truly transdisciplinary approach?	20mins

iii. How can this be approach be useful for tackling wicked problems in your institution?	

References

Barnett, R. (2000). University knowledge in an age of supercomplexity. *Higher Education, 40*(4), 409-422.

Barnett, R. (2011). The coming of the ecological university. Oxford Review of Education, 37, 439-455.

Brown V.A., Harris J.A., Russell J.Y. (2010). Tackling wicked problems through the transdisciplinary imagination. Earthscan Ltd, London, UK.

Nicolescu, B. (2014) Methodology of Transdisciplinarity, World Futures, 70(3-4), 186-199.