12th WEEC
CONNECTING PEOPLE
CREATING TOMORROW
29 JAN - 02 FEB, 2024 | ABU DHABI

Bridging theory and practice through Transdisciplinary Learning Labs to build sustainability competencies in higher education

Insights from the TRANSECTS project in Canada, South Africa and Germany

Presented by Prof Eureta Rosenberg, Rhodes University, South Africa E.Rosenberg@ru.ac.za

Table of Contents

01

Why TD?

Why take a transdisciplinary approach to Teaching, Learning and Research?

Why Transdisciplinary

Research, Teaching and Learning?

Responding to complex environmental sustainability issues; we draw on **different disciplines** (e.g. from the sciences and the social sciences, e.g. Ecology, Biochemistry, Economics and Education) – InterDisciplinarity – **and beyond disciplines**, e.g. traditional & indigenous knowledge, practitioner & experiential knowledge. Graduates need 'TD' competencies in the workplace - Beyond "teamwork" and "inter-personal" skills: technical, relational & transformational competencies.

See Rosenberg, E., Lotz-Sisitka, H.B. and Ramsarup, P. (2018), "The green economy learning assessment South Africa: Lessons for higher education, skills and work-based learning", *Higher Education, Skills and Work-Based Learning*, Vol. 8 No. 3, pp. 243-258. https://doi.org/10.1108/HESWBL-03-2018-0041

Complex Social-Ecological Issues → **Need Wider Knowledge** → **& Graduate Competencies**

S-E issues are complex, multi-facetted, can be hard to solve - 'wicked'

Disciplinary and scientific knowledge is important, but not enough

To address complex problems, graduates must be able to work with & across different knowledge systems

If these are the competencies we need …

Technical competencies

Relational competencies

Transformational competences

How do educators produce them?

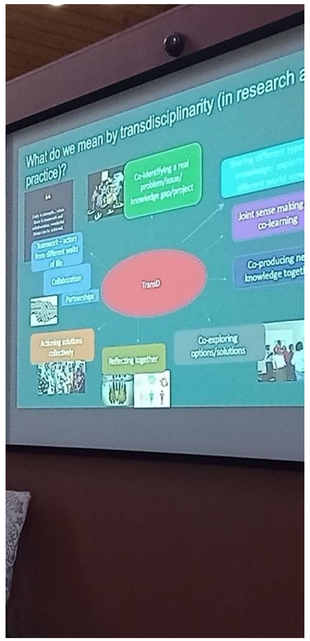
02

The Case Study

TRANSECTS Transdisciplinary International Learning Labs in Germany 2022-2023

The TRANSECTS Programme & Learning Labs

A 6-year programme (2021 – 2027) | Canada, SA & Germany | Universities & Biosphere Reserves



New Courses, Micro-Credentials

Programme Institutes (mini-conferences)

Transdisciplinary International Learning Labs (TILLS)

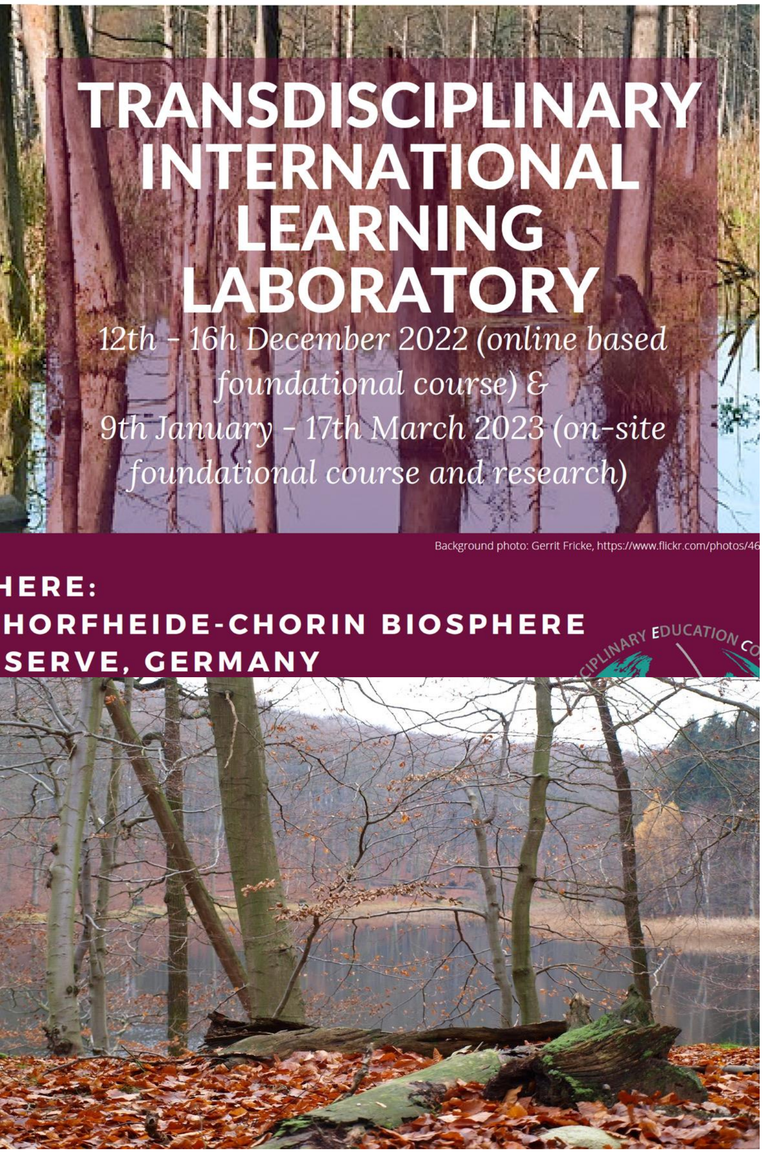
Student & Practitioner Networks & Resource Platforms

12th WEEC CONNECTING PEOPLE CREATING TOMORROW | هيئة البيئة - أبوظبي Environment Agency - ABU DHABI | World Environmental Education Congress Network

weec2024.org

The Learning Lab as a teaching approach for EE and ESD: (E.g. Holmberg & Holmén; Rosenberg, Lotz-Sisitka & Ramsarup)

- Active, experiential learning - collaborative
- Involves stakeholder identification and engagement
- Multi-facetted analysis of issues
- Shared framing of problem
- Solutions-oriented learning
- Drawing on multiple knowledge systems – disciplines & more



Transdisciplinary International Learning Labs in the TRANSECTS programme

2022 & 2023

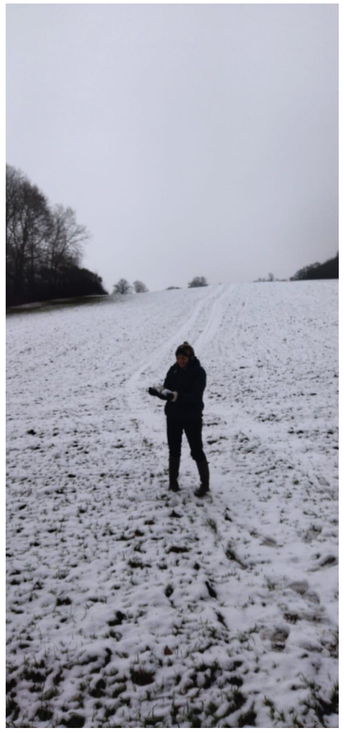
Germany

2025 & 2027

South Africa

2024 & 2026

Canada



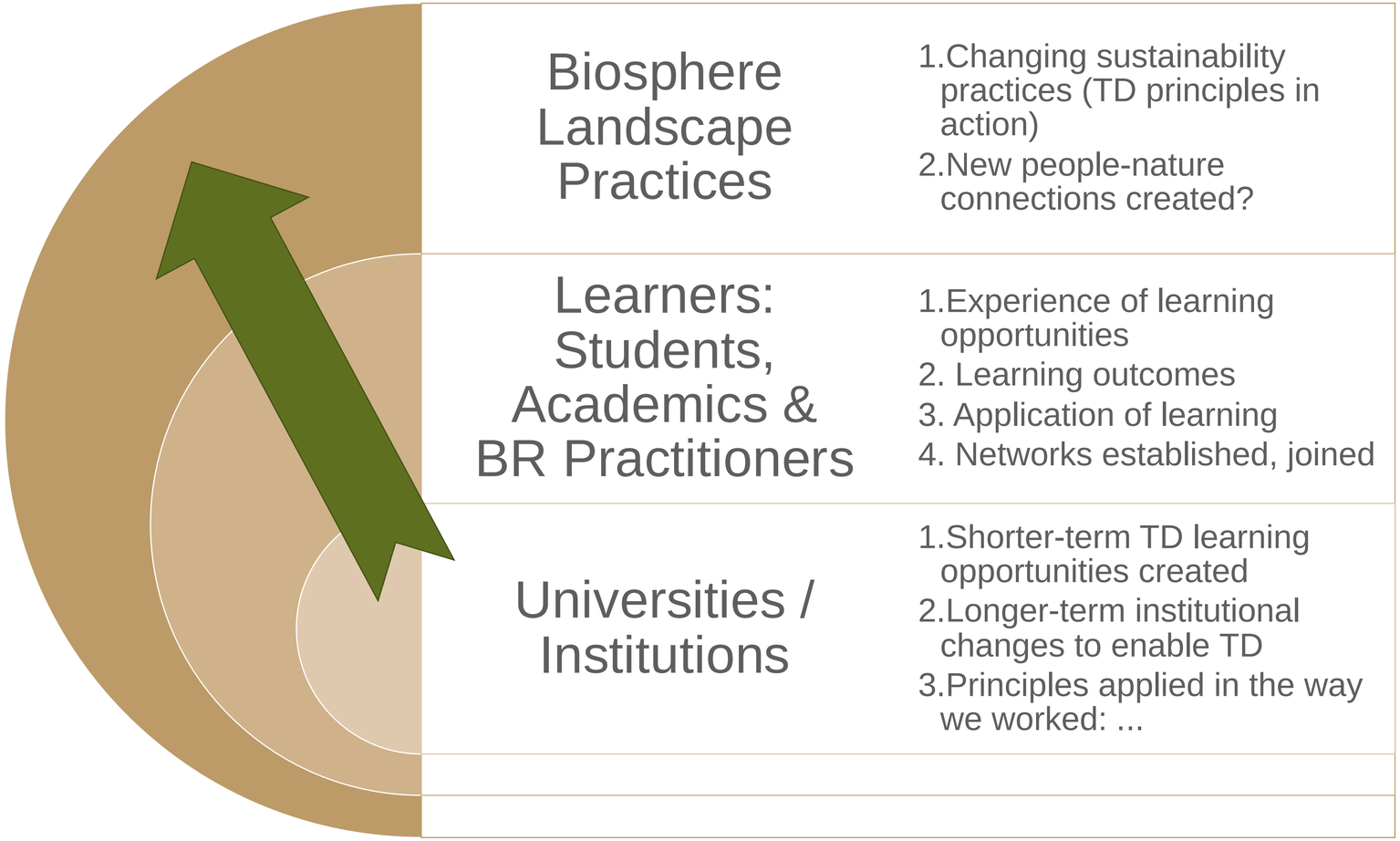
weec2024.org

TRANSECTS Programme's Theory of Change

+ What we evaluated, and how: Questionnaires; Focus groups with students; Interviews with mentors

3 Change domains & the pathway between them …

& how we are tracking change (M&E):



03

Findings

What have we learned thus far through Evaluation?

Findings from TILL Evaluations:

Students

- Students learned a lot
- Would recommend it to others –
- With some changes:
- Relationship with Biosphere Reserve was not clear
- Problem to research was not clear
- Inter-cultural learning was hard but worthwhile
- Living and work conditions were tough
- A deeper understanding of transdisciplinary developed – including that the TILL itself was not always approached with TD principles in mind

Mentors

- Mentors also learned a lot
- Were not clear on the problem to be researched
- Roles of Biosphere Reserve management was not clear
- Role of mentors was not always clear
- Would recommend it to others –
- With some changes!

Programme Convenors

- Through reflection on the emerging data we concluded that –
- Curriculum and course development across different contexts is complex
- Requires much more communication and
- Clarification of different pedagogical approaches
- For example, how a Learning Lab is different from a Field School
- We cannot assume a shared understand of transdisciplinarity principles in action (theory into practice)

How does a Learning Lab differ from a Field School?

Purpose

A Lab is space for innovation, using available resources to design a new solution to a multi-facetted (sustainability) issue, problem

A 'School' is a place for developing skills and learning what may already be known by others, about a particular place ('field')

Both are important learning spaces.

Field schools are a traditional teaching method in Geographical Sciences. Learning Labs are associated with Transdisciplinary teaching and learning.

Process

A Lab starts with ALL the stakeholders identifying the issue for which they want to develop a solution and refining the question(s)

A team or teams work in the Lab, using diverse methods and gathering different data sets that they then bring together to craft the solution

A field school uses tried and tested methods to find out about the bio-physical and sometimes other aspects of a place

Endpoint

Field school research is descriptive or descriptive-analytical; the purpose is achieved when data is collected and analysed; students know the place better and have honed their data collection skills

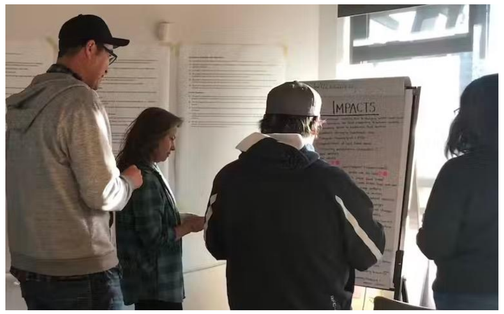
In a Lab the research-based solution is shared with stakeholders who would aim to implement it; further cycles of collaborative research to follow up on outcomes, may ensue. The approach to the research is developmental & trans-formative; there may be no clear endpoint

TRANSECTS — TRANSDISCIPLINARY EDUCATION COLLABORATION FOR TRANSFORMATIONS IN SUSTAINABILITY

NRF National Research Foundation Community of Practice

RHODES UNIVERSITY Where leaders learn

environmental LEARNING RESEARCH CENTRE



Field School vs Learning Lab – How do they differ?

Purpose

A Lab is space for innovation, using available resources to design a new solution to a multi-facetted (sustainability) issue, problem

A 'School' is a place for developing skills and learning what may already be known by others, about a particular place ('field')

Both are important learning spaces.

Field schools are a traditional teaching method in Geographical Sciences. Learning Labs are associated with Transdisciplinary teaching and learning.

Process

A Lab starts with ALL the stakeholders identifying the issue for which they want to develop a solution and refining the question(s)

A team or teams work in the Lab, using diverse methods and gathering different data sets that they then bring together to craft the solution

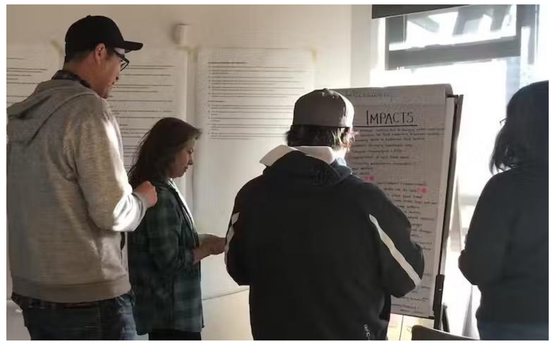
A field school uses tried and tested methods to find out about the bio-physical and sometimes other aspects of a place

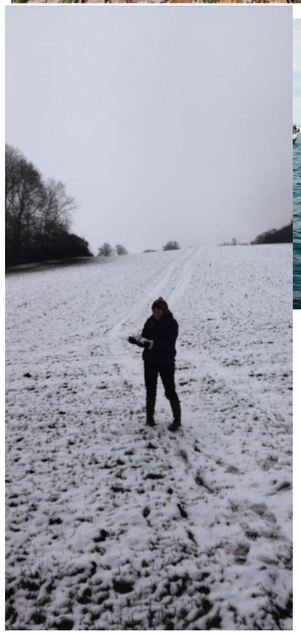
Endpoint

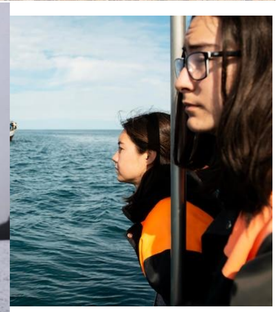
Field school research is descriptive or descriptive-analytical; the purpose is achieved when data is collected and analysed; students know the place better and have honed their data collection skills

In a Lab the research-based solution is shared with stakeholders who would aim to implement it; further cycles of collaborative research to follow up on outcomes, may ensue. The approach to the research is developmental & trans- formative; there may be no clear endpoint

Reminder - What we evaluated, and how: Questionnaires and Focus groups with students; Interviews with mentors







What is the difference?

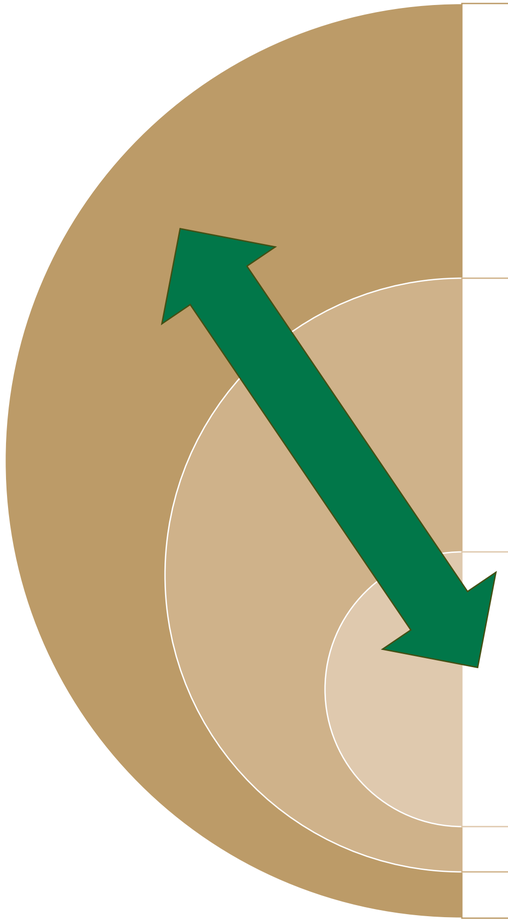
Field School vs Learning Lab

As the university-based academics designing and offering the TILLS, we had to adjust our understanding of TILLS; *and* our process of developing the TILLS together across disciplines

This then also required an adjustment to our Theory of Change, which will guide our future evaluations (and TILL development – from how we *plan* it, to how we *accommodate* the students)

Revising TRANSECTS Programme's Theory of Change

Adjusted on the basis of evaluation findings: change pathways in both directions



Biosphere Landscape Practices	1.Changing sustainability practices 2. New people-nature connections created
Learners: Students, Academics & Practitioners	1. Experience of learning opportunities 2. Learning outcomes achieved 3. Application of learning 4. Networks established, joined
Universities / Institutions	1. Shorter-term TD learning opportunities created 2. Longer-term institutional changes to enable TD 3. Principles applied in the way we worked

Acknowledgements

1. Environmental Agency Abu Dhabi
2. World Environmental Education Congress Secretariat
3. TRANSECTS: Transdisciplinary Education Collaborations for Transformations in Sustainability (led by University of Saskatchewan, Canada; Rhodes University, South Africa & HNE Eberswalde University for Sustainable Development, Germany)
4. Prof Maureen Reed | Wendy James | Prof James Robson | Marlis Merry | Dr Jessica Cockburn | Dr Duduzile Ngwenya | Prof Heike Walk | Jana Gengelbach | Biosphere Reserve Partners
5. Rhodes University Environmental Learning Centre (ELRC)

12th WEEC
CONNECTING PEOPLE
CREATING TOMORROW
29 JAN - 02 FEB, 2024 | ABU DHABI

environmental
learning research centre

RHODES UNIVERSITY
Where leaders learn

Thank You! *Shukram*! Baie Dankie! *enKosi*!

12th WEEC
CONNECTING PEOPLE
CREATING TOMORROW

هيئة البيئة - أبوظبي
Environment Agency - ABU DHABI

World Environmental
Education Congress
Network

weec2024.org