



“Toetsing” in transdisciplinaire leeromgevingen

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Een beetje over mij



FORMATIEF EN
PROGRAMMATISCH



BOUNDARY CROSSING



CHALLENGE BASED
LEARNING



ONTWERPPRINCIPES
TRANSDISCIPLINAIR LEREN
(NRO GROTE VRAGEN)

Waar ga ik
het over
hebben?



WAARTOE?



WAT?



HOE?

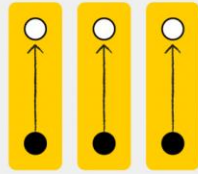
Voordat ik
begin



WIE HEB IK IN DE ZAAL?

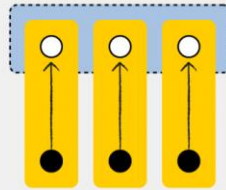
Transdisciplinaire leeromgevingen

- Goal, shared knowledge
- Discipline
- ⊙ Stakeholder participants
- Academic knowledge
- Conventional knowledge
- Thematic umbrella



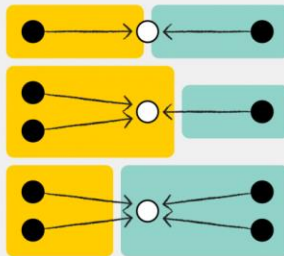
DISCIPLINARY

- Within one academic discipline
- Disciplinary goal setting
- Develops new disciplinary knowledge



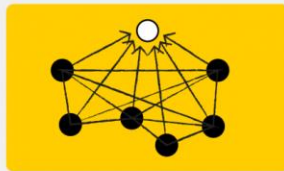
MULTIDISCIPLINARY

- Multiple disciplines
- Multiple disciplinary goals set under one thematic umbrella



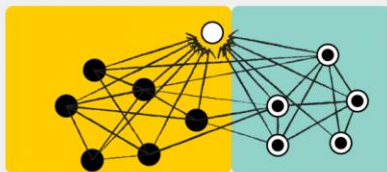
PARTICIPATORY

- Academic and non academic participants
- Knowledge exchange without integration



INTERDISCIPLINARY

- Crosses disciplinary boundaries
- Develops integrated knowledge
- Draws from and contributes to 'interdisciplines'



TRANSDISCIPLINARY

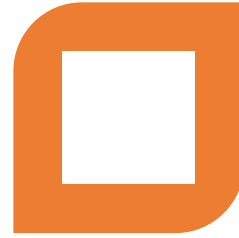
- Crosses disciplinary and sectorial boundaries
- Common goal setting
- Develops integrated knowledge for science and society
- Draws from and contributes to 'interdisciplines'

DUURZAME ONTWIKKELINGS DOELSTELLINGEN

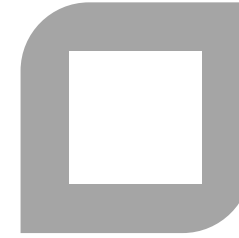


Schematic representation of transdisciplinary research. Adapted from Morton et al. (2015), originally from Tress et al. (2005). Retrieved from [UU website](http://uu.nl)

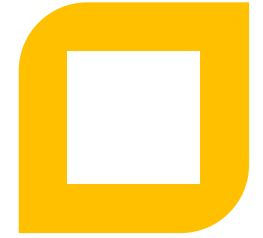
Transdisciplinaire leeromgevingen vragen....



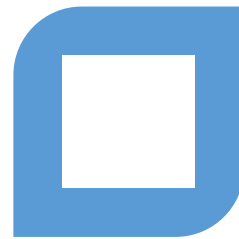
MINDER
DOCENTCONTROLE TBV
CREATIVITEIT



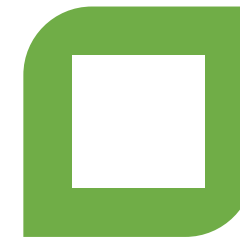
ACTIEVE PARTICIPATIE EN
CO-CREATIE



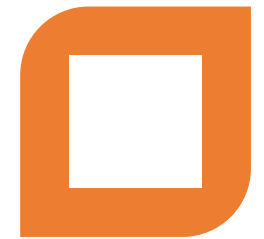
OMARMEN VAN
FOUTEN VAN ALLE
LERENDEN



COLLECTIEVE
VERANTWOORDELIJKHEID



REFLECTIVE PRACTICE



FEEDBACK
GELETTERDHEID

Geen
standaardisatie
mogelijk

Verandering
gedurende
proces

Geen duidelijke
vraag en
oplossing

Ook docenten
weten niet het
antwoord

Uitdagingen voor toetsing

Verschillende
disciplines
nodig

Mensen met
verschillend
startpunt,
verschillende
inbreng

Kennis,
vaardigheden en
attitude
noodzakelijk



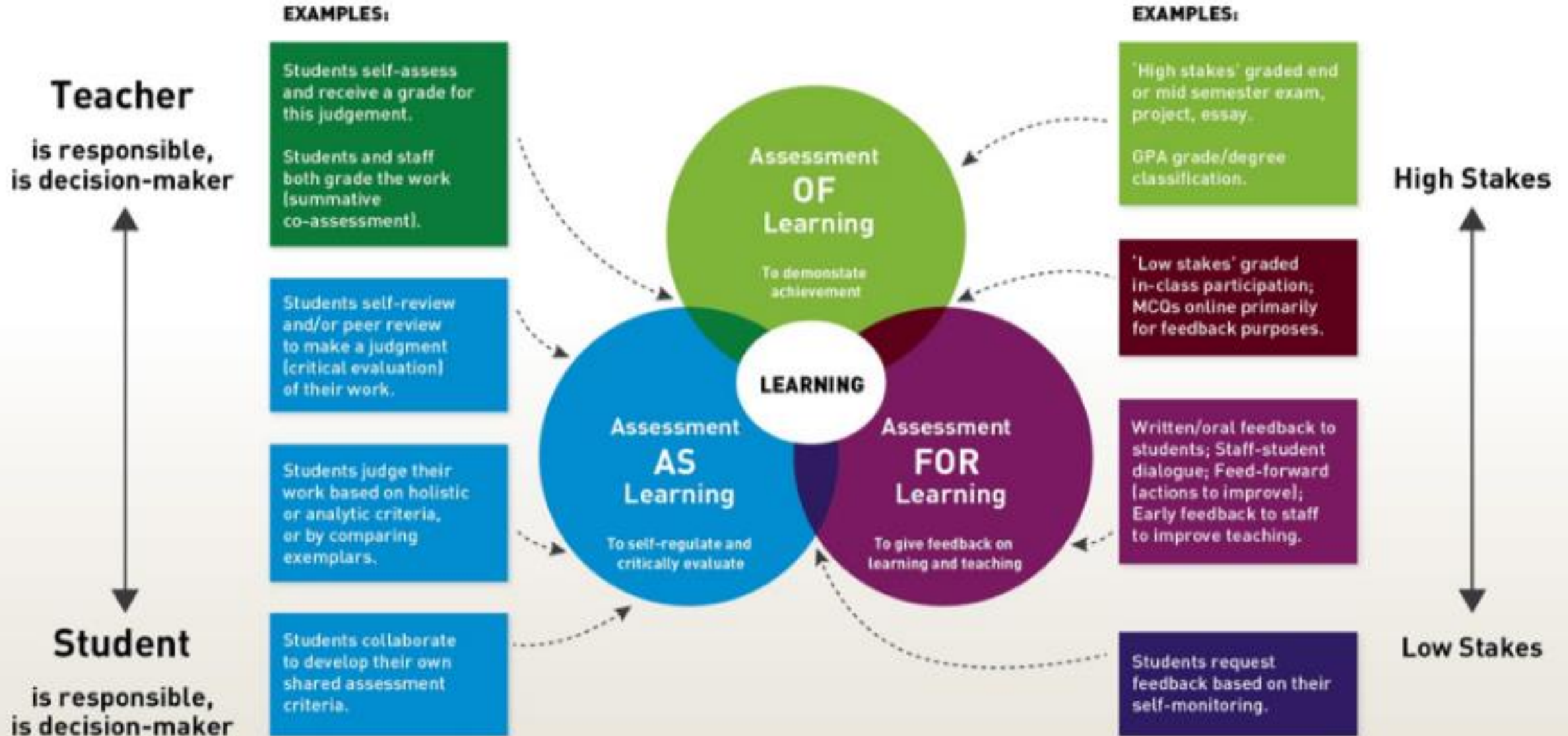
Waar toe?

Welk leerproces willen we stimuleren?

*Assessment is belangrijkste factor die
leren/leerproces stuurt*

(Schellekens et al. 2021)

SUMMATIVE



FORMATIVE

De verschillende doelen
balanceren om “goed
leren” te ondersteunen

Scoping review of
Schellekens et al.,(2021)

The following assessment OF/FOR/AS learning table is a compilation of from a wide variety of resources that goes a bit further than simple definitions (Chappuis et al., 2012; Fenwick & Parsons, 2009; McNamee & Chen, 2005; Rowe, 2012; Schraw, 2001; Sparks, 1999):

Assessment	Of Learning	For Learning	As Learning
Type	Summative	Formative	Formative
What	Teachers determine the progress or application of knowledge or skills against a standard.	Teachers and peers check progress and learning to help learners to determine how to improve.	Learner takes responsibility for their own learning and asks questions about their learning and the learning process and explores how to improve.
Who	Teacher	Teacher & Peers	Learner & Peers
How	Formal assessments used to collect evidence of student progress and may be used for achievement grading on grades.	Involves formal and informal assessment activities as part of learning and to inform the planning of future learning.	Learners use formal and informal feedback and self-assessment to help understand the next steps in learning.
When	Periodic report	Ongoing feedback	Continual reflection
Why	Ranking and reporting	Improve learning	Deeper learning and learning how to learn
Emphasis	Scoring, grades, and competition	Feedback, support, and collaboration	Collaboration, reflection, and self-evaluation



Waar toe? Leren van wie?

Consulting transdisciplinarity

Vs

Participatory transdisciplinarity

(Mobjörk, 2010)

Wie zijn de lerende partij(en) en wat betekent dat voor onderwijs, leren en beoordelen? (Ajjawi et al., 2022)



Waartoe?

Moet en kan iedereen hetzelfde niveau, op dezelfde manier, zelfde moment bereiken?

- Sustainable assessment (Boud & Soler, 2016)
- Assessment for distinctiveness (St. Jorre & Oliver, 2018)
- Assessment for inclusion (Tai et al., 2021)



WAT?

Holistisch beeld van de bekwaamheid van de student als professional

Competenties

- Sustainability competenties (Redmen et al., 2021)
- Interdisciplinaire / transdisciplinaire competenties (Cox, 2021; Fam et al., 2016)
- ‘adaptive expertise’ / ‘adaptive performance’ (Pelgrim et al., 2022)
- Feedback literacy (Phillips & Schmohl, 2023)



WAT?

Processen die er altijd zijn

- Boundary Crossing (Gulikers & Oonk, 2019)
- System Thinking (Grohs et al., 2018)
- Entrepreneurial process (Baggen et al., 2021)

Professionele identiteit(sontwikkeling) (Ajjawi et al., 2020; Nieminen & Yang, 2023)

Persoonlijke leerdoelen en leerverrassingen (Baggen et al., 2021; Scardamalia et al., 2012)

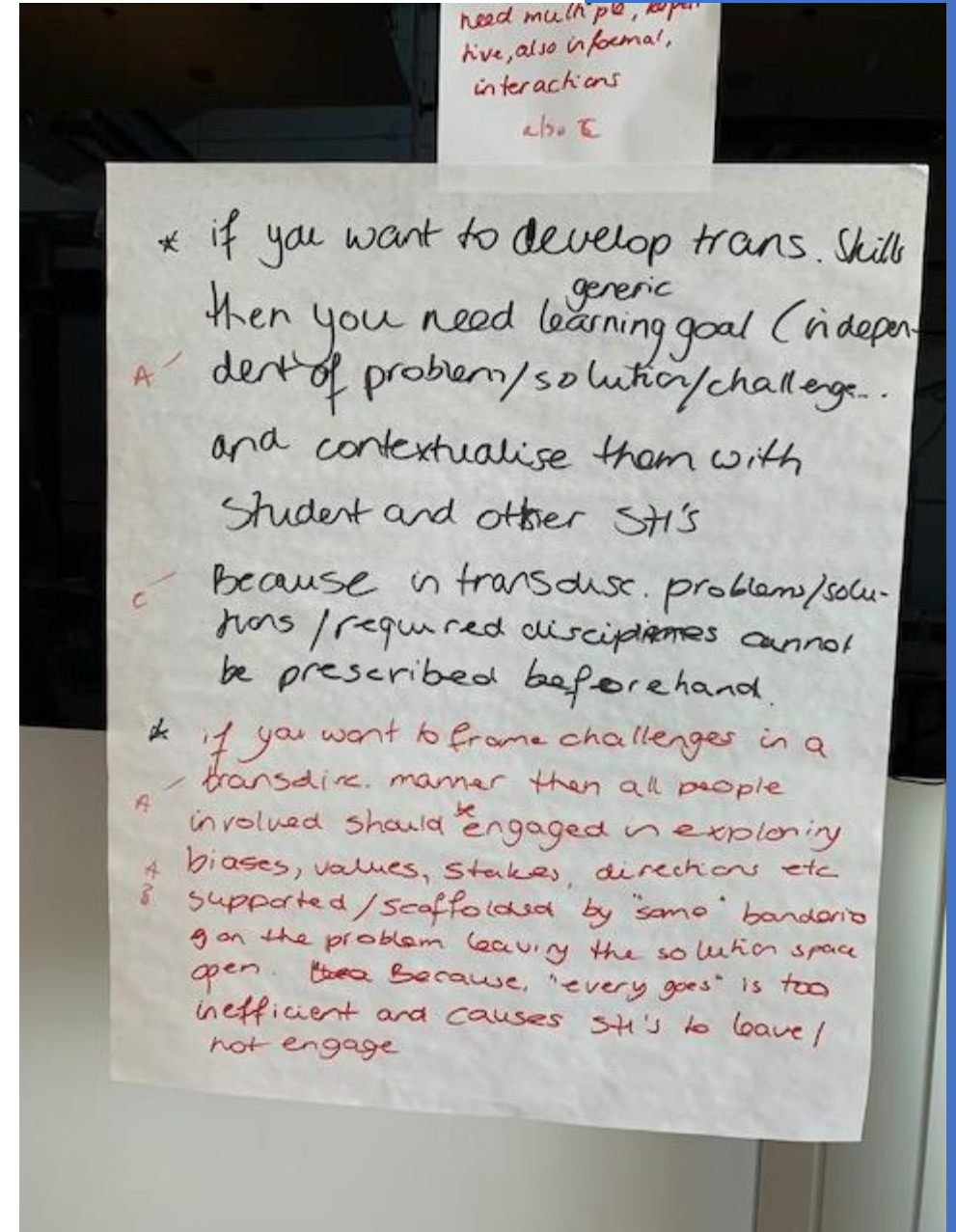


"Over the years, I got a bit lost in what I wanted in life. The Shaping Responsible Futures programme helped me to get a deep insight into my own personality in relation to others. I now have a clear idea of what I personally want to develop and what kind of role I like to fulfil in teamwork."

WAT: Generiek vs specifiek

Met studenten generieke leeruitkomsten contextualiseren en hierbij input van professionals gebruiken. Betekenisvol maken voor hun leven na de opleiding (St Jorre & Oliver, 2018)

Met studenten (en andere stakeholders) een **neus voor kwaliteit** ontwikkelen (Sadler, 1989)





HOE?

- Redman (2021): veelal gebruik van self-reports
Recente variant: TROPOS (Cox, 2021)
- St Jorre & Oliver (2018): veelal (oneigenlijk?) gebruik van reflecties
- Mijn eigen praktijk (WUR): kan het anders dan met reflectieverslagen?
- Van Ravenswaaij et al (2020): the generic skills systematic



HOE? Anders kijken naar toets(kwaliteit)

- Alignment: WAARTOE + WAT → HOE
- Cijfer nodig?
- Leren van “programmatisch toetsen” → Rijkheid aan datapunten (Baartman, van Schilt-Mol, & Van der Vleuten, 2020)
- Variatie in bewijslast
- Studenten actieve rol in WAT en HOE

HOE: een voorbeeld

Boundary crossing@WUR

Comenius Leadership Project 2018-2022 ev.

“Bringing boundary crossing in the veins of Wageningen university”



Boundary Crossing Competence

- The ability to learn and work together across practices
- The ability to recognize, seek, appreciate, and utilize tensions to create opportunities
- to co-create new ideas and practices and to grow as professional

Types of boundaries

- Disciplinary
- Cultural
- Academic - society


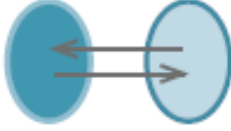

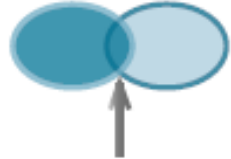


Dit zet je altijd in in
transdisciplinair leren!
(Vereijken, et al., 2022)

Boundary crossing theorie en leermechanismen (Akkerman & Bakker, 2011)

Dit zet je altijd in in
transdisciplinair leren!

BOX 1. VISUALISATIE EN INTERPRETATIE VAN DE VIER BOUNDARY CROSSING LEERMECHANISMEN IN DE CONTECT VAN SAMENWERKEN MET EXTERNE PARTIJEN (STAKEHOLDERS)

Visualisatie van leermechanisme	Doel van leermechanisme	Welk soort vragen stel je hier?
	Identificatie Verkrijgen van inzicht in de manier waarop verschillende praktijken zich van elkaar onderscheiden of elkaar aanvullen.	<ul style="list-style-type: none"> • Welke expertise heb ik? • Welke expertise mis ik in de context van het vraagstuk? • Wie zijn relevante stakeholders? • Wat is hun kennis, belang en perspectief? • Hoe verhouden zij zich tot elkaar?
	Coördinatie Samenwerking bij het oplossen van het probleem, maar gericht op efficiënt en naast elkaar functioneren (taken verdelen).	<ul style="list-style-type: none"> • Op welke manier kan ik de verschillende stakeholders benaderen en betrokken krijgen? • Hoe kunnen we effectief met elkaar communiceren en samenwerken? • Welke afspraken maken we met elkaar? • Wie kan ik waarvoor inzetten?
	Reflectie Leren door de ogen van de ander naar de eigen praktijk te kijken. Er vindt zowel een definiëring als een uitwisseling van perspectieven plaats gericht op wederzijdse betekenisverlening en het verbinden van verschillende kennis.	<ul style="list-style-type: none"> • Wat kunnen we leren van elkaar? • Hoe zorg ik dat andere stakeholders mijn perspectief begrijpen? • Wat kan ik leren van het perspectief van anderen?
	Transformatie Transformatie treedt op als nieuwe praktijken worden gevormd. Het eindresultaat had niet had kunnen ontstaan zonder daadwerkelijke samenwerking en integratie van verschillende perspectieven/wensen.	<ul style="list-style-type: none"> • Wat is mijn visie op de nieuwe praktijk? • Hoe kunnen we onze kennis, inzichten en perspectieven verbinden in een (innovatieve, maar realistische) oplossing? • Hoe maak ik anderen enthousiast voor die nieuwe praktijk? • Hoe zorg ik ervoor dat de nieuwe praktijk wordt opgepakt en er vervolgcacties op komen (duurzame nieuwe praktijk)?

Boundary crossing rubric



Article

Towards a Rubric for Stimulating and Evaluating Sustainable Learning

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Table 2. Boundary crossing rubric: a tool to support inter- and transdisciplinary learning in sustainability education.

	D The Student..	C The Student..	B The Student..	A The Student..
Identification 1: Identify one's own expertise and one's own limitations	does not explicate which expertise (s)he possesses and which expertise might be missing to execute the project successfully	explicates his/her own expertise in terms of knowledge, skills and network that can contribute to the project	previous cell + identifies his/her own limitations regarding expertise needed to execute the project.	relates his/her own expertise to that of the other members of the project team and maps what kind of expertise is missing to execute the project successfully
Identification 2: Identify other perspectives relevant for the project and problem at hand	does not actively explore other perspectives	shows awareness of various perspectives, but does not explicitly address these different perspectives in the light of the project	identifies people, including their interests, perspectives, expertise and mutual relations, relevant for executing the project	previous cell + the student explicates for which aspects of the project he/she needs other people and plans actions to contact these other people
Coordination 1: Contact other people	takes no action to contact other people or takes action, but only because it is a requirement of the course	contacts a few other people close to the problem and easy to address (e.g., given by the teachers). prefers to contact external people in a digital way	develops active and face to face contact with relevant other people	initiates and organises collaborative meetings with relevant other people with the intention to collaboratively share ideas, develop new ideas and tune own ideas
Coordination 2: Collaborate purposefully with other people	does not actively and purposefully collaborate with other people or is merely frustrated by the challenges that emerge in this collaboration	carries out activities to discuss a few other perspectives, closely related to his/her own background	aims at purposeful collaborations with various relevant people to the project. Discovers and/or contributes to developing a boundary object (BO) relevant for people involved to facilitate collaboration for executing the project	previous cell + uses the BO actively to accommodate multi-, inter- or transdisciplinary collaboration, and checks whether everybody contributes to the project. If not, (s)he takes action
Perspective-making and learning from each other 1: (Re)consider perspectives	considers the project purely from his/her own perspective and interest	shows limited openness to other perspectives relevant for the project and/or, considers the input from other perspectives mainly for his/her own benefit (i.e., what can I use from you?)	actively explicates and/or discusses various perspectives relevant for the project and searches for ways to combine perspectives (i.e., how can the different perspectives contribute to and strengthen the project)	previous cell + explicates how other perspectives influenced his/her own perspective on the project
Perspective-making and learning from each other 2: Learn from other people	merely aims to complete the project, not to learn from other people (i.e., shows no learning attitude at all)	reflects on own learning process and development specifically and can explicate these	explicitly shows the willingness to learn from other people during the project	actively searches for ways to learn from others and purposefully develop him/herself
Perspective-making and learning from each other 3: Stimulate others to learn (general)	shows no action in stimulating other people to learn from each other	reflects with team members on each other's role, contribution and development during the project, but does not actively transfer the results into improved performance of other people during the projects	initiates reflective actions between people involved in the project aimed at learning from the project (both process and content-wise)	previous cell + actively encourages other people's learning in light of the project

Dus:

Benutten van
kansen en
stimuleren van
transdisciplinair
leren vraagt
heroverwegingen
in toetsing



WAARTOE?



WAT?



HOE?

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