

Some guidelines and tools for teaching agroecology and transitions as a mean to sustainability

Christian PELTIER

Bergerie nationale Rambouillet / UR-FoAP L'Institut Agro Dijon

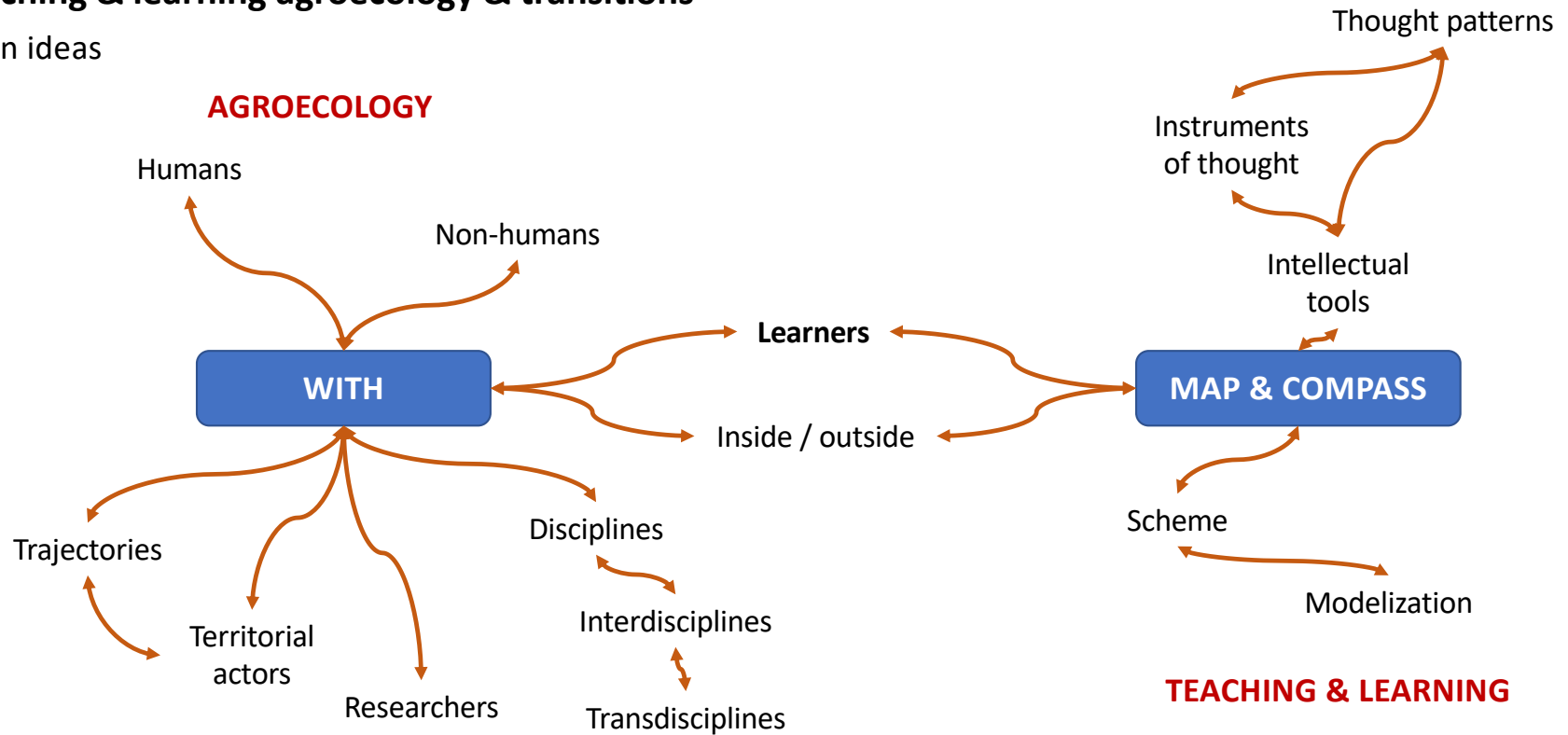
✉ christian.peltier@bergerie-nationale.fr / [Cpeltiered](https://twitter.com/Cpeltiered) / [Reportages EDD](https://www.youtube.com/channel/UC...) / [Didactics 4 Transitions](https://www.instagram.com/Didactics4Transitions)

 <https://www.idref.fr/076156311>



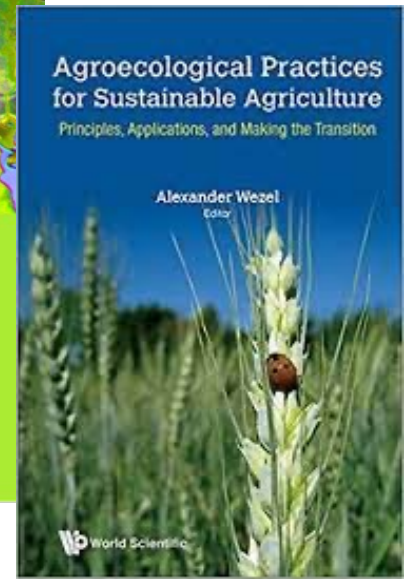
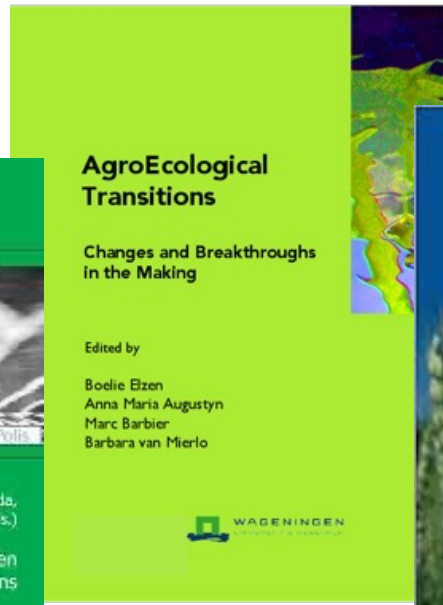
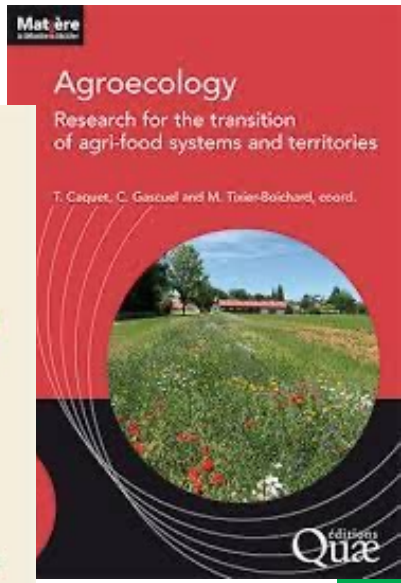
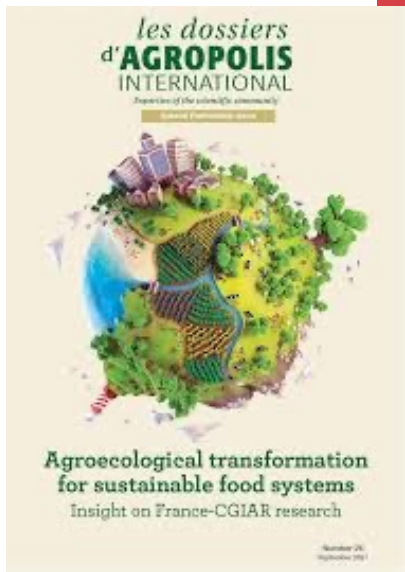
Teaching & learning agroecology & transitions

Main ideas



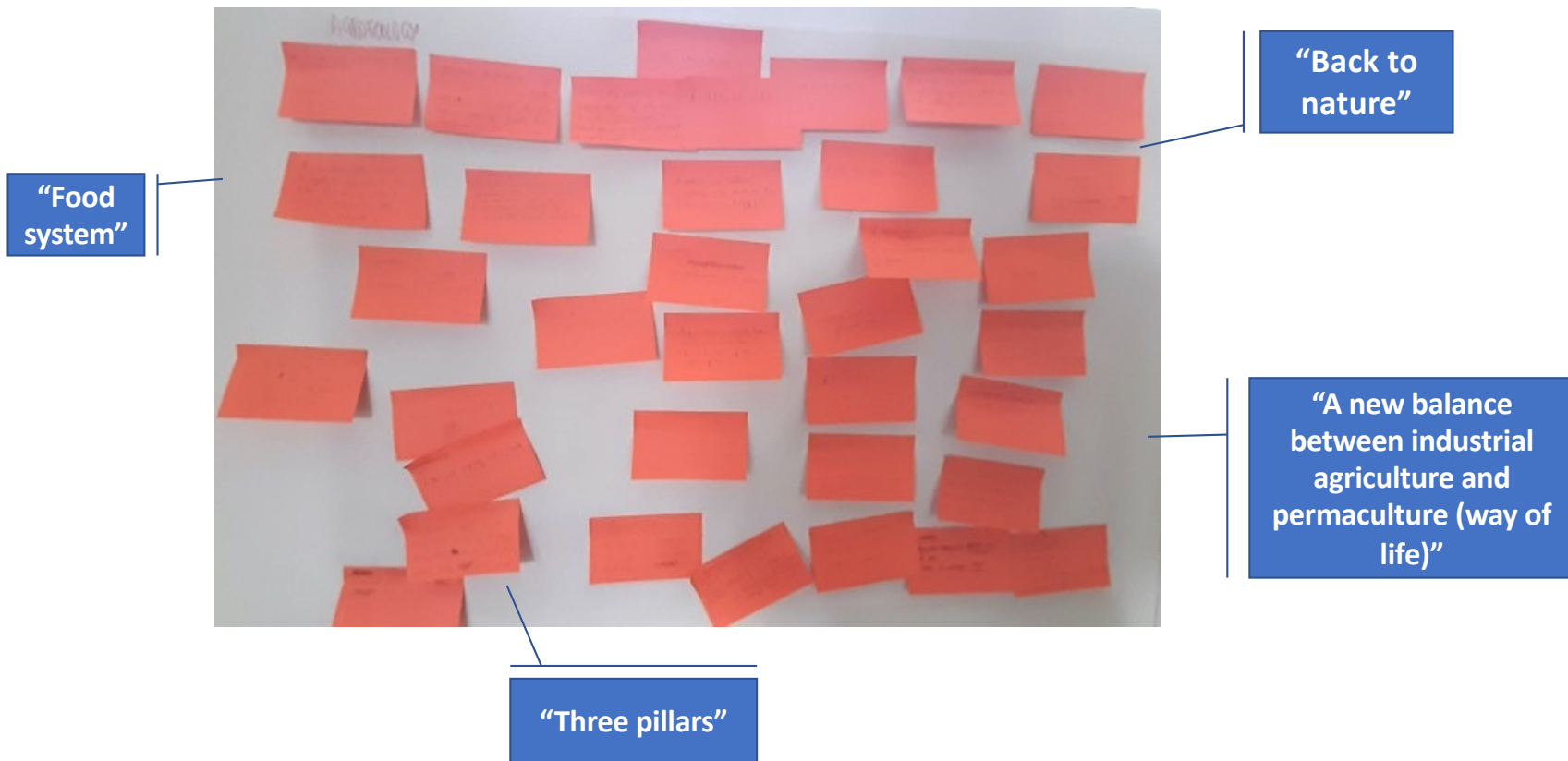
What to teach ? And how ?

AGROECOLOGY & TRANSITIONS



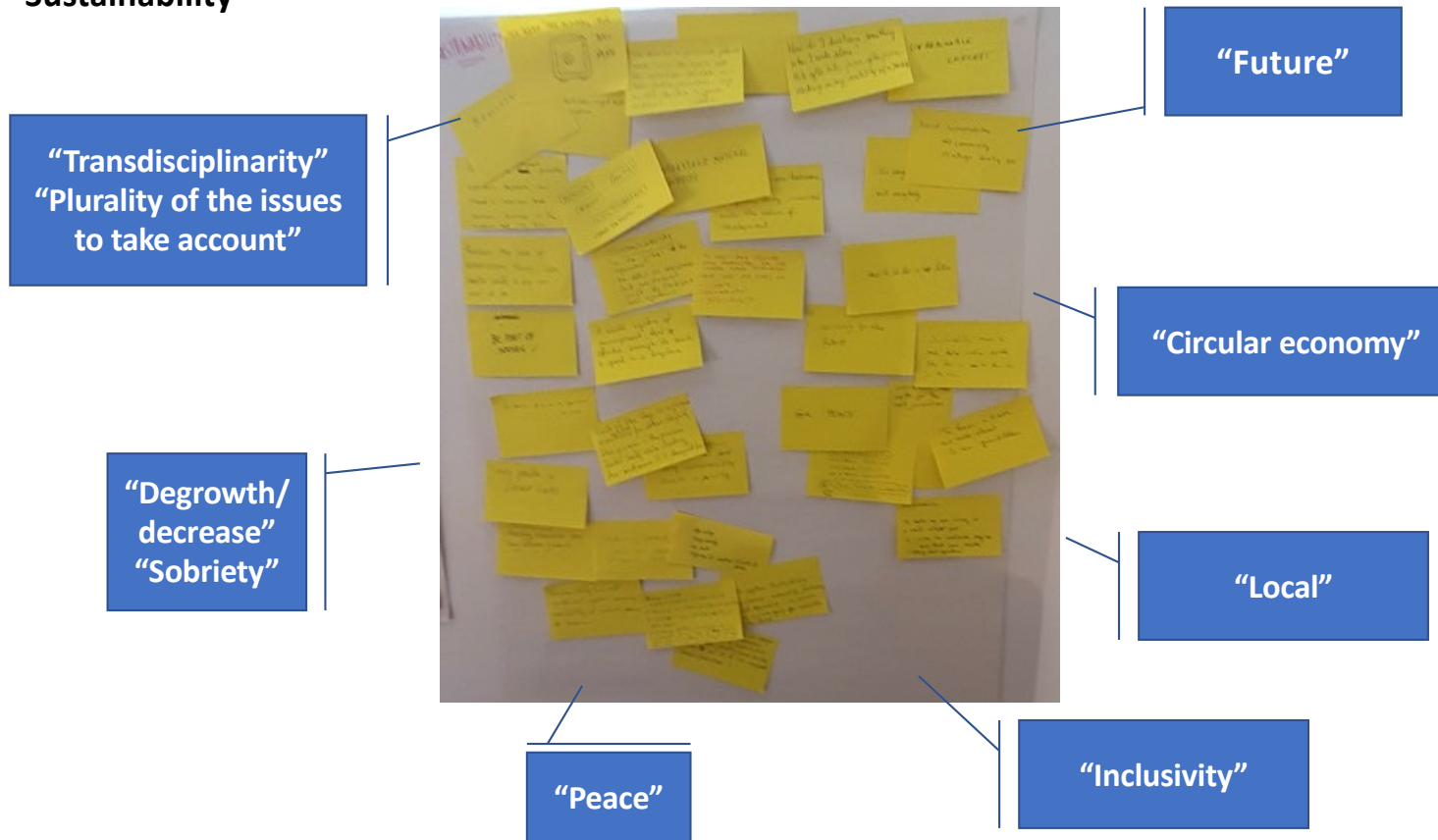
Your representations (yesterday morning)

Agroecology



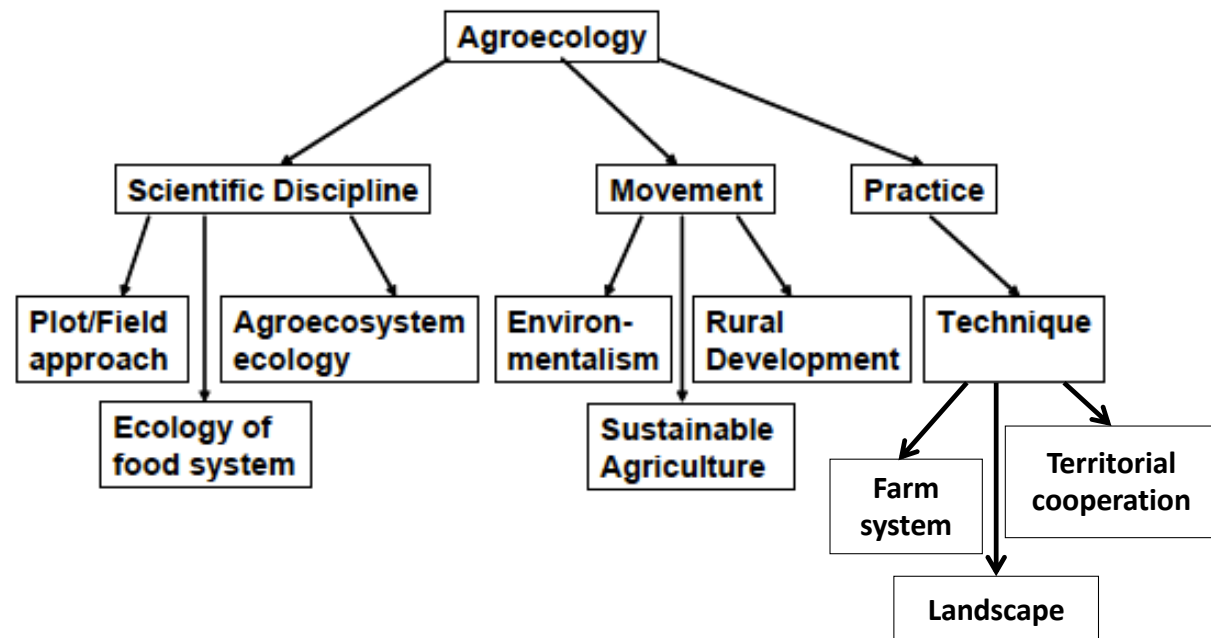
Your representations (yesterday morning)

Sustainability



Agroecology: a history

Three sources (from Wezel & al, 2009)



Links to videos

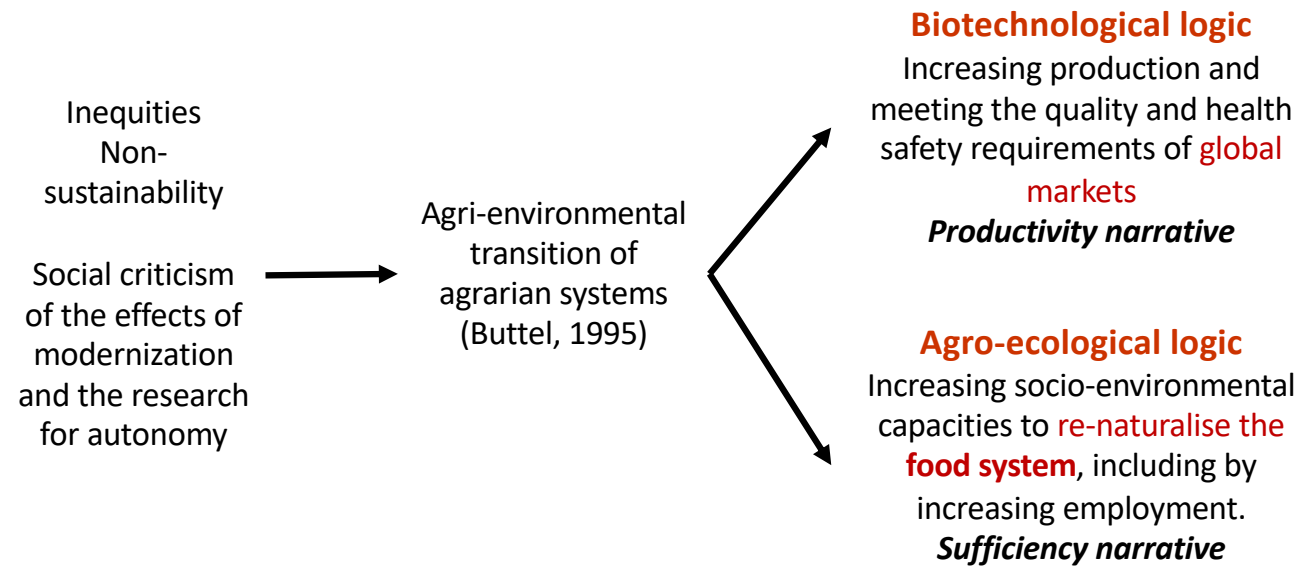
Léger F. : https://www.canal-tv/video/canal_uved/1_agroecologie_translation_ou_metamorphose.19781

Duru M. : <https://vimeo.com/89610025>

Griffon M. : <https://www.youtube.com/watch?v=Ry2BQUONkn0>

The "bipolar crystallization of agro-ecology in two great accounts »

(from Stassart & al, 2012)



Sustainable development ?

Sustainable development as an arrangement of the dominant economic model

Mechanical paradigm

Determined, universal progress

Optimal material growth

Market primacy

Techno-scientific dominance of exhaustible but **replaceable nature**

Technocratic management (designers / popularisers)

Sustainable development as a breach

Constructivist paradigm

To each society, its way of response

Equitable sharing of material wealth today and tomorrow

Market, State, contingent organizations

Partnership between humans and non-humans, hybrid objects

Articulation of the different scales, **subsidiarity**, **stakeholders** participation

Sustainability: different world views (Fleury)

	<i>Denial</i>	<i>Adaptation</i> <i>(weak sustainability)</i>	<i>Reconceptualization</i> <i>(strong sustainability)</i>
Relationship to nature	Scientific and technical mastery (technology) of nature Growth & preservation (compensation)	Reduce impacts Green Technologies	Partnership between humans and nature: reconciling ecosystem conservation and socio-economic development
Method of social management of problem	Technocratic management: separation design / popularization / execution, application	Stakeholders' consultation	Integrated, concerted and territorialized management: construction of problems by stakeholders

Transitions: the ESR model

(S.B. Hill, R.J. McRae, 1995)

Three levels of rupture and transition are distinguished from an initial "conventional" situation:

Efficiency: changes within a system aim to reduce the consumption and waste of scarce and costly resources. The objective is to **optimize the current functioning of the system**. Changes are therefore limited in scope and inexpensive (reasoning inputs).

Substitution: **some products or components of the system are replaced by others to allow less environmental impacts and/or better adaptation**. The objective is to operate the system in a similar way but by substituting some of its components for others. Changes are therefore more important and more complex to implement. Examples include replacing maize with feed sorghum for animal production or replacing insecticides with sexual confusion in arboriculture.

Reconceptualization: at this level, **the causes of problems are recognized and resolved through a system-wide transformation**. In this case, the aim is to rethink the entire functioning of the system in order to meet the new demands placed on it. The changes are logically much larger and take longer to implement. For example, this is a major change in field crop rotations.

Sustainability: different world views (Fleury)

	Denial	Adaptation (weak sustainability)	Reconceptualization (strong sustainability)
Relationship to nature	Scientific and technical mastery (technology) of nature Growth & preservation (compensation)	Reduce impacts Green Technologies	Partnership between humans and nature: reconciling ecosystem conservation and socio-economic development
Method of social management of problem	Technocratic management: separation design / popularization / execution, application	Stakeholders' consultation	Integrated, concerted and territorialized management: construction of problems by stakeholders

Efficiency
Substitution
Reconceptualization

Sustainability, agroecological transition & territories

(Lainé, Peltier, Fleury, Abel-Coindoz, Duru & al)

Sustainable development as an arrangement of the dominant economic model	Sustainable development as a breach
"weak sustainability"	"strong sustainability"
Weak ecological modernization ("translation")	Deep ecological modernization ("metamorphosis")
<p>Technologies replace natural resources</p> <ul style="list-style-type: none"> - improving the efficiency of inputs - reduction of environmental effects (science and technology) - main interest in production 	<p>Respect for the limits of nature and ecosystem balances</p> <ul style="list-style-type: none"> - substitution of chemical inputs by the valorisation of ecological services - interactions between practices and biodiversity (a factor of production) - main interest in food systems
<p>Agricultural systems juxtaposed forms of agriculture</p>	<p>Territorial agro-ecological systems coordinated, articulated forms of agriculture</p>
<i>EFFICIENCY</i>	<i>RECONCEPTUALIZATION</i>

SUBSTITUTION

TEACHING & LEARNING AGROECOLOGY & TRANSITIONS



Avec la transition agroécologique, il s'agit de passer d'une agriculture industrielle à une agriculture durable, qui prend en compte l'impact de l'agriculture sur l'environnement, le bien-être des agriculteurs et des consommateurs, et la résilience des territoires. Cette transition nécessite de nouvelles compétences et de nouveaux outils de formation.



Les abeilles jouent un rôle essentiel dans la production et la reproduction des végétaux. Elles sont donc indispensables à la sécurité alimentaire mondiale. Cependant, leur population est en déclin rapide en raison de la perte de leur habitat, de l'usage de pesticides et de la pollution lumineuse.



Coordonné par
Sylvain Collin et
Muriel Vidal

Agromérie | educagri



ENSEIGNER À PRODUIRE AUTREMENT
GUIDE PAK ET POUR LES REFERENTS



AGROECOLOGIE | AGRICULTURE | ÉDUCATION | ENVIRONNEMENT



Intelligence collective pour des transitions écologiques au service de notre alimentation et de la santé globale

analyses et actualités
Le blocus étudiant 2021 de Grignon (78) et le projet de 2022
« Une belle histoire », une action collective écologique et pionnière ?
Difficultés de transmission des exploitations agricoles : les facteurs psychosociaux sont largement sous-estimés
La transmission des savoir-faire dans les fermes herbagères

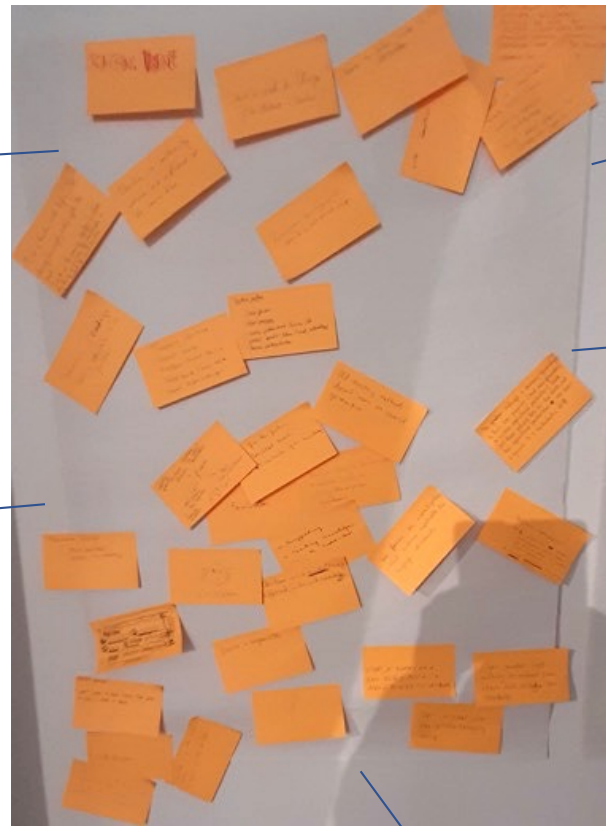
GREP

Your representations (yesterday morning)

Teaching posture

“Old teaching method
doesn't wok with current
generation”

“Work a lot before / be
useless in the
classroom”



“Trust in
students”

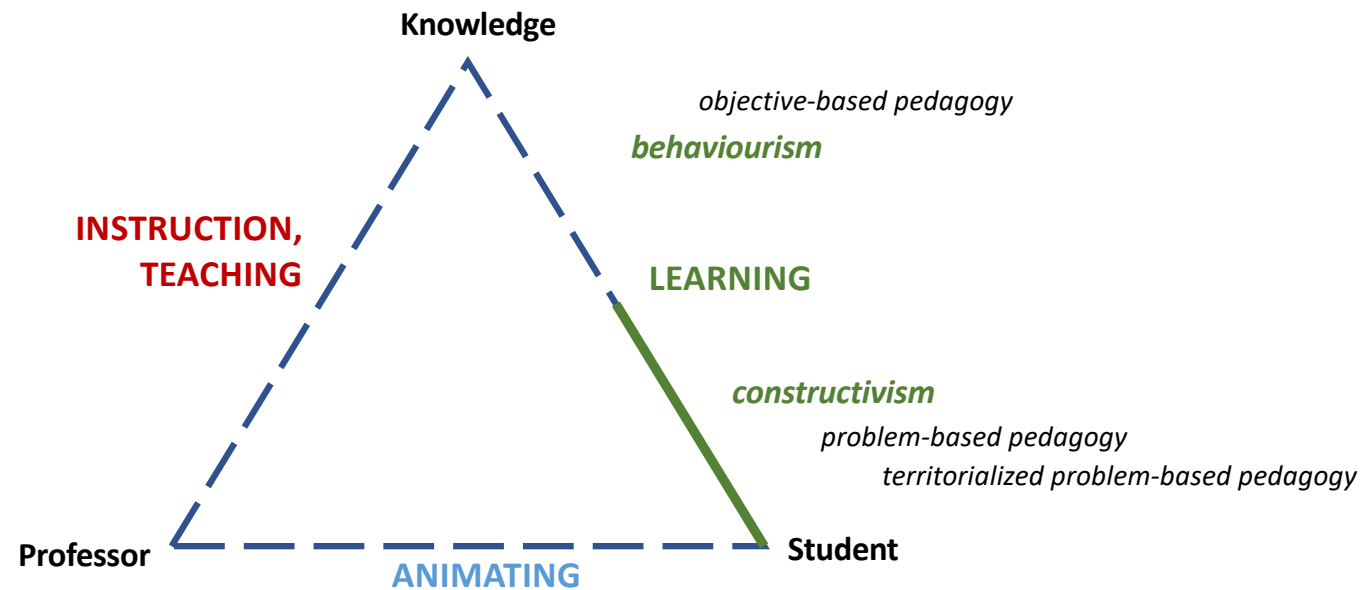
“Open minded”

“Flipped classroom
Case studies
Fieldwork
...”

“Supporting”

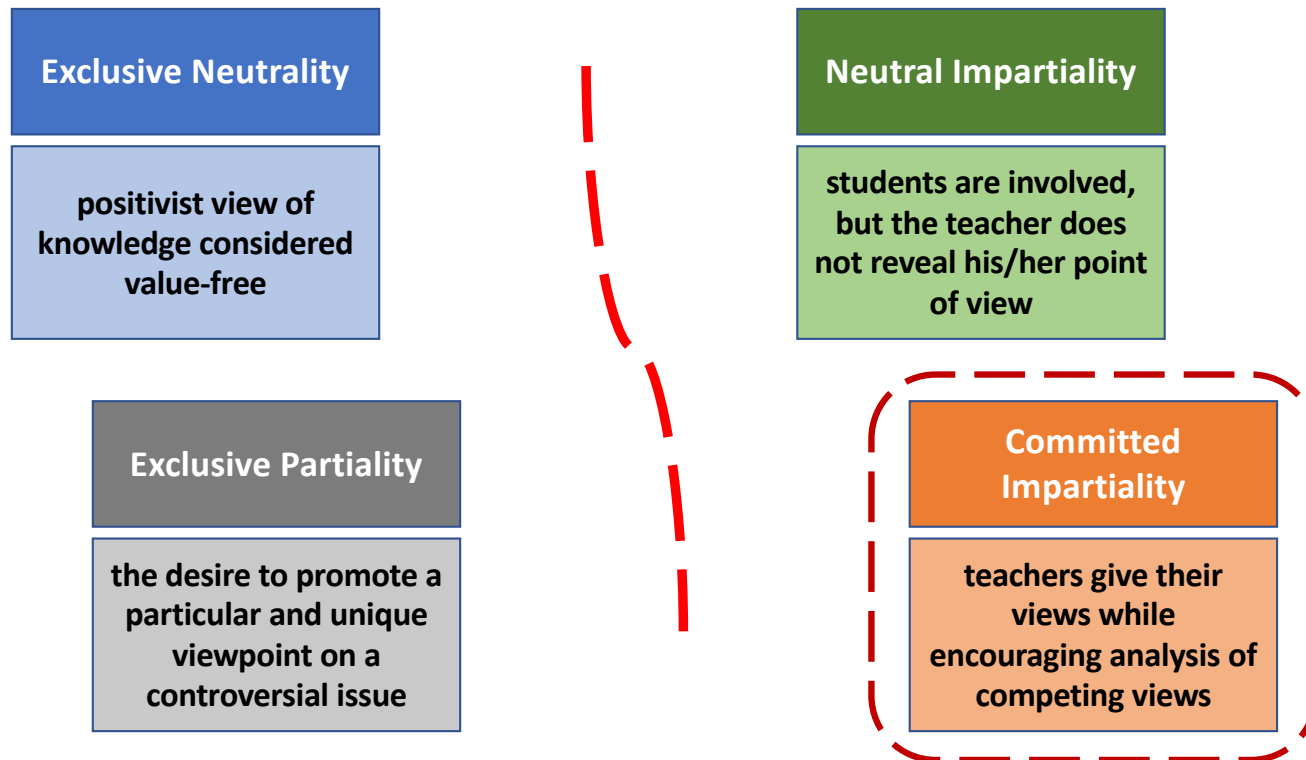
Teaching postures

The pedagogical triangle (from Houssaye, 2000)



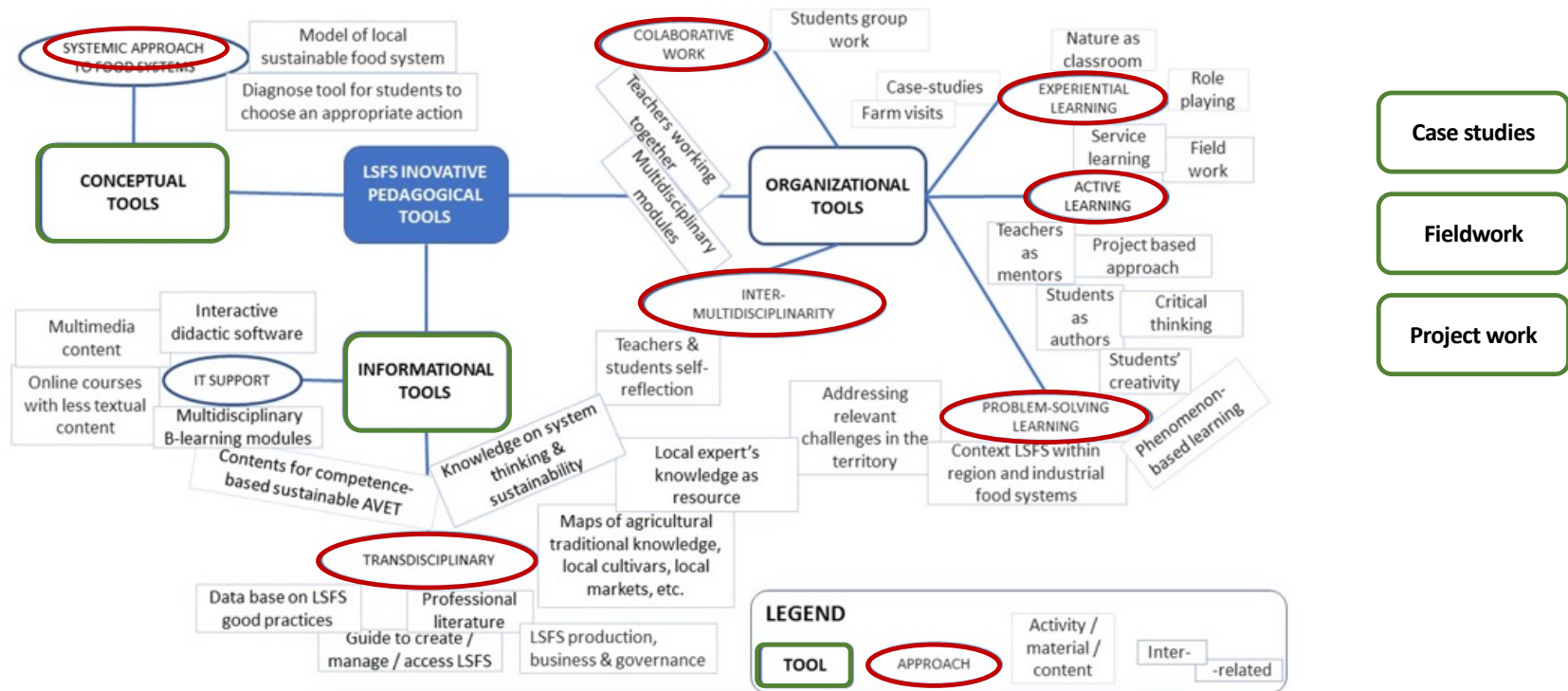
Teaching postures

Discussing Controversial Issues: Four Perspectives on the Teacher's Role (Kelly, 1986)



Tools and pedagogical approaches

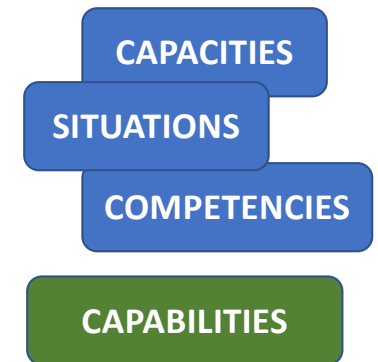
ERASMUS EduLocalFOOD Project – pedagogical report (2018)



Types of knowledge

(Astolfi, 2000)

Knowing that...	"Know"	Informations	Erudition
Knowing how to Knowing why	"Be proficient"	Know-how tool, concepts, models	Skill



Interdisciplinarity

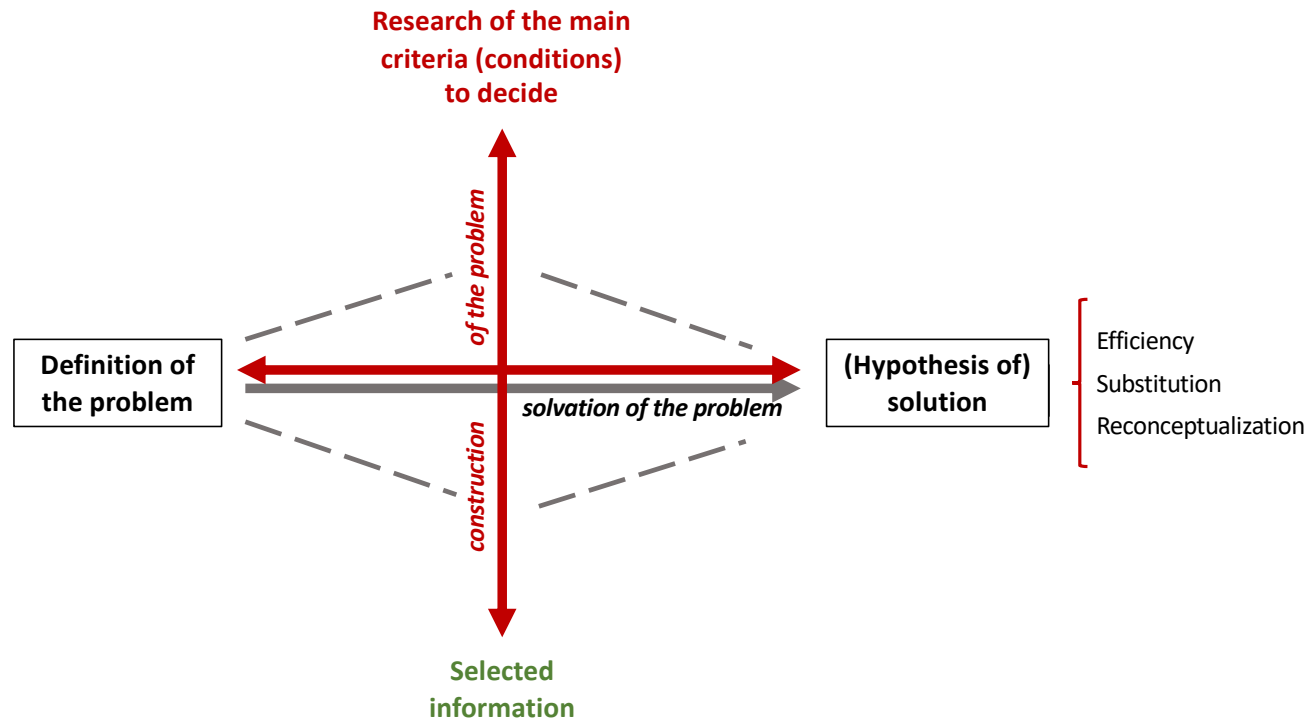
Problematization

Project versus problem paradigms (Peltier)

Project paradigm		Problem paradigm
<p>Renaissance</p> <p>It is linked to the idea of progress (technological) and human freedom. It is a matter of planning. It draws one or more objectives, a goal to be achieved, and for that he gives itself the means. It is an emblematic form of Western modernity (Boutinet, 1993).</p>	from or vs	<p>"Problem" (1382): borrowed from the Latin <i>problema</i>, question to be solved; from the Greek <i>problema</i>, what lies ahead, what stands in the way, what is controversial, question to be solved.</p>
<p>In French agricultural education, so-called active teaching methods were deployed early, especially with project teaching. It can even be said that they are a marker of teaching in agricultural education. It is also questionable whether these active pedagogies were not the counterbalance to transmission pedagogies (the "instruction" mode as Jean Houssaye calls it, 1993).</p>		<p>It is with problem-situations (Brousseau, 1986) that the notion of problem becomes central and that we embark on an epistemology of problematization that takes charge of the complete process of positioning, constructing and resolving the problem (Fabre, 1999).</p> <p>The problem-situation, in its aspects of intelligence, trickery and trap (this is the "mischief" of the ancient Greeks: the ruse of intelligence), appears as the culmination of a long pedagogical history where the ideas of activity, situation and objectives, for example, are both taken up and reworked.</p>
<p>Project Pedagogy</p>		<p>Situational pedagogy, formation of judgement (position, construction & problem solving)</p>

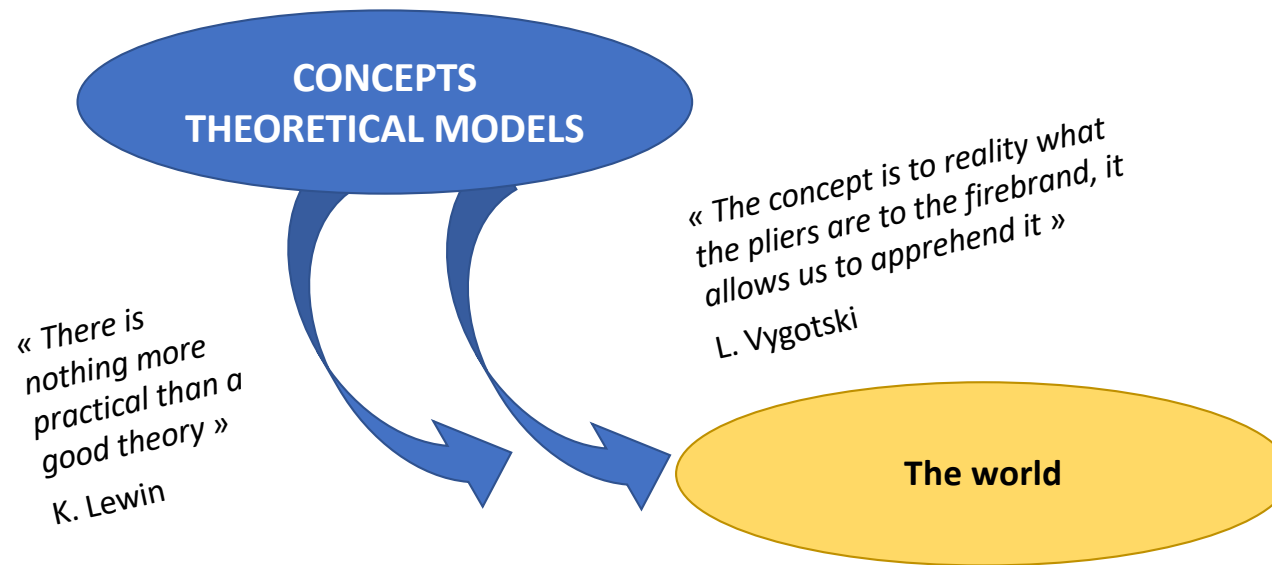
Problematization

The “problematization diamond” (Fabre)



Conceptualization

(J. Dewey, L. Vygotski, B.M. Barth, P. Pastré, ...)



Sustainability and teaching methods : different world views (Fleury)

	<i>Denial</i>	<i>Adaptation</i> <i>(weak sustainability)</i>	<i>Reconceptualization</i> <i>(strong sustainability)</i>
Relationship to nature	Scientific and technical mastery (technology) of nature Growth & preservation (compensation)	Reduce impacts Green Technologies	Partnership between humans and nature: reconciling ecosystem conservation and socio-economic development
Method of social management of problem	Technocratic management: separation design / popularization / execution, application	Stakeholders' consultation	Integrated, concerted and territorialized management: construction of problems by stakeholders
<i>Teaching, Training Design</i>	<i>Transmission of information, instruction rules (TEACHING)</i> <i>Dissociated learning by conditioning training (BEHAVIORISM)</i>	<i>New Information and Communication Technologies (NICT), Computer-assisted education... "Flipped classroom"</i>	<i>Support the change of practices (CONSTRUCTIVIST LEARNING)</i>

A link ? Consistency ?

Thank you for your attention
Any questions ?

A TRANSNATIONAL AND REFLECTIVE ANALYSIS ON HOW AGROECOLOGY IS TAUGHT IN FRENCH AND AUSTRIAN AGRICULTURAL HIGH SCHOOLS

THE NECTOR PROJECT
greenE agroEcology Transformative leARNING

We are interested in the pedagogical innovations that the teaching of AG (agroecology) can bring, but also in comparing two contrasting theoretical frameworks ("green pedagogy" and "pedagogy of transition"), also an observing those in our respective countries to analyse how pedagogical teams go about teaching agroecology in agricultural high schools, and the learning achieved by the learners.

Teacher mobility and cross-analysis of pedagogical practices are the key elements of the project.

MAIN OBJECTIVES

- Get exchanges between French and Austrian agricultural high schools on the subject of agroecology
- Cooperation between researchers in education
- Adaptation of didactic concepts for sustainability education

MAIN PARTNERS

- Bergerie nationale - Bundesland
- University College for Agriculture and Environmental Pedagogy
- French agricultural high schools: IPR, Clermont, IPR, Bourgoin-Jallieu, IPR, Romans
- Austrian school partners: 1st school of school cooperation, Rural school and education centre for Voralberg, High school and research institute for agricultural Learning-Competence

PEDAGOGICAL AIMS

- Teachers mobility between France and Austria
- Cooperation between researchers and researchers in pedagogy
- Crossed analysis of pedagogical practices
- 3 topics explored: food systems, fertility of soil, local systems, fertility of soil, local food and autonomy, agroecology and local needs local food and autonomy, agroecology and local needs

CONTACTS

Sandra FORTMEYER
IPR Bourgoin-Jallieu
sandra.fortmeyer@ipr-bourgoin-jallieu.fr

Christiane PELTZER
University of Applied Sciences
christiane.peltzer@fh-styria.at

Martin SCHMIDT
University of Applied Sciences
martin.schmidt@fh-styria.at

GREEN PEDAGOGY

PEDAGOGY OF TRANSITION

HOW DO WE TEACH AGROECOLOGY IN AGRICULTURAL SCHOOLS IN AUSTRIA AND FRANCE AND HOW CAN WE COOPERATE FOR BETTER LEARNING OUTCOMES?

CONCLUSION and organization
Techniques and staff project (Clermont 2018 and Vienna autumn 2020)
Framework of the partnership between the IPR and the Bergerie nationale (use of digital tools)
International Forum for support for teaching learning in terms of research-based teacher training (Spring 2021)
Continued contact of the researchers involved: mobility, analysis of shared teaching practices (Summer 2021)
Kick-off meeting 13th of December 2021
Transnational sessions 2 per year (2022-2023)

Working methods
Teachers and researchers exchange (FRAGILE) mobility, mobility of the ALMA (Regional Council) "Action research" on 3 subjects: food systems, fertility of soil, local food and autonomy, agroecology and local needs, objects of study: school between the partners, analysis of pedagogical practices involving the didactic frameworks of the IPR (green pedagogy) and the Bergerie nationale (Pedagogy of transition) on education, professional and societal pedagogy, education for sustainable development and transversality), cross cases analysis of the results

Expected results
Construction of shared pedagogical approaches, cross case analysis of pedagogical practices, evidence based experiences for teacher's training in each of our countries, scientific articles

Acknowledgements
Special thanks to the various partners who supported this transnational research project: mobility for our work
Sandra Fortmeyer, Christiane Peltzer and the members of the French and Austrian teams
The members of the French and Austrian teams
The members of the French and Austrian teams
The members of the French and Austrian teams

Some guidelines and tools for teaching agroecology and transitions as a means to sustainability

Christian PELTIER

Bergerie nationale Rambouillet / UR-FoAP L'Institut Agro Dijon

✉ christian.peltier@bergerie-nationale.fr / [Cpeltiered](https://twitter.com/Cpeltiered) / [Reportages EDD](https://www.youtube.com/channel/UC...) / [Didactics 4 Transitions](https://www.instagram.com/didactics4transitions)

 <https://www.idref.fr/076156311>

