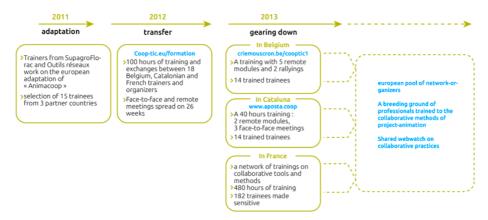


Introducing the Cooptic project

Cooptic is an initiative for innovation transfer funded by the European Commission within the framework of the Leonardo da Vinci project. Four partners specializing in innovative teaching methods - Suprago Florac and Outils-Réseaux (Montpellier), the Cooperation School Aposta from Catalonia and the Regional Centre for Environmental Initiatives (CRIE Mouscron) from Wallonia – joined forces to work on adapting a training tool for collaborative project facilitators.

During the Cooptic project, fifteen people from three countries (Belgium, France and Spain) received training to become trainers of cooperative project and network facilitators, in their respective circles.

Cooptic today has 60 network facilitators forming a real pool in three European countries. This network developed over the course of three years:



Introducing the team of partners

The Cooptic programme linked four structures:



Supagro Florac: Agriculture and Environmental Education Institute has been providing training to facilitators of many themes and geographic networks on public agricultural education for many years, as well as providing technical support for them. Recognized nationally for its expertise in education sciences and its experimental teaching activities and for promoting innovative training tools, Supagro Florac shares its knowledge with its partners in this project. It also oversaw the creation and coordination of the whole project.



The 'reference' association in France for networking. Its main mission is to start and accompany cooperative networks and practices using methodological tools and the Internet. In 2010, Outils-Réseaux created the Animacoop training tool for facilitators and professionals working in the fields of cooperation and network facilitation. This Animacoop tool was a part of the European Cooptic project.



Catalan association: Cooperation school in charge of transfer in Catalonia



Walloon association for environmental education in charge of transfer in Wallonia

These partners brought together the skills of several institutions, universities, researchers, and local actors and groups engaging in participatory development who actively participated in drafting the e-book you have in your hands.

Introduction to the learning tool

The Cooptic learning tool is based on educational principles that aim to accompany trainees along the path to autonomy and building their capacity to carry out informed actions. Trainees are the main focus of the teaching tool. These principles lead to the choice of teaching methods and resources that are articulated around three ideas: the crosscutting nature of knowledge and collaborative skills to be learnt; a link to the professional projects of trainees; and the use of the possibilities offered by digital tools to innovate in teaching practices.

What can be learnt with the Cooptic training?

The training contents favour the development of operational skills linked to the facilitation of cooperative projects: managing information, co-producing resources, starting network dynamics, group facilitation...

These contents are structured around 12 key concepts and 12 crosscutting collaborative skills:

	Key-concepts				Know how to act			
environment	Abundancy	Constraints	Legitimacies	Exchanges	Gathering information	Producing	Event organizing	« Scaling up »
group	Size	Vocation	Maturity	Culture	Start the network	Keeping the group alive	Managing conflicts	Self- evaluating
person	Convergence	Involvment	Awareness	Coordination	to join a group	Behaving	Managing information	Taking a stand

These collaborative skills are dealt with in parallel at three different levels:

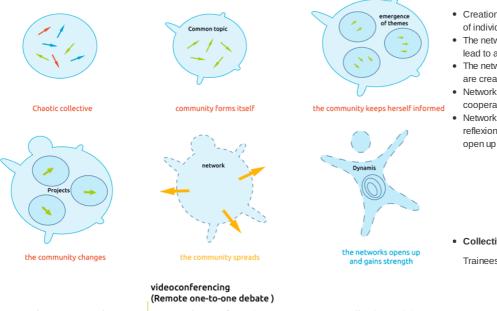
- at an individual level, training develops the engagement of a person in a collaborative project,
- at a group level, training deals with understanding group dynamics, networks, groups and skills to manage a group,
- a third level relating to the environment refers to openness factors and communication "outside" the network.

How is the learning done?

During a training period of 14 weeks, trainees work remotely and on-site following a progression in three parallel itineraries:

· Individual itinerary:

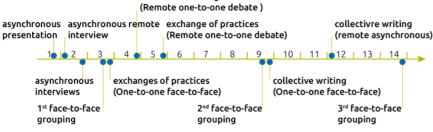
On-line contents follow the stages in a network's existence.



- Creation of the network: the group is established, a "group of individuals" becomes aware that it is a learning group.
- The network becomes informed: exchanges on the projects lead to a set of common experiences and problems.
- The network is transformed: individual and collective events are created in small-group collaborative work.
- Network outreach: spreading the outcomes of the cooperation works outside the community brings value to it.
- Network consolidation: this allows for an assessment and a reflexion on how to maintain the dynamics alive and how to open up to others.

• Collective trainee itinerary :

Trainees produce new contents collectively



• Project itinerary :

The creation of a collaborative project by the trainee is a pre-requisite, and the activities refer to this project throughout the training. During the first week, trainees introduce the context and the object of their project, and then test the methods and tools on their project, explaining the whole experience relating to their own personal learning process. At each of the three meetings, an update is given on how the training has contributed so far to the project's progress. Training actions speed up the project in its professional context and the lessons learnt from the training reciprocally become more "tangible" since they are implicit in the action.

A pedagogy impacted by new technologies

A training ecosystem:

A methodology to move from "network facilitators" to "trainers of network facilitators" A combination of on-site and distance exchanges using Internet-based tools Using collaborative tools and methods during the training process.

Moments to exchange practices
Individual work on the trainees' collaborative projects
Co-generation of knowledge: pedagogical training plans.

The Cooptic ebook

presented orally during training. This book is a state of our knowledge in the field of cooperation and collaboration at the time of writing in late 2013. But this is an area that is just beginning to be studied and we continue to experiment, to imagine, to try, to dream ... To make it short, even if the publication of this ebook is the outcome of the European project Leonardo CoopTic, this is not the end but just the bases of our future projects: a resource center on collaboration? A MOOC? Or perhaps something that does not exist yet!

Enjoy your reading and your "small irreversible cooperation experiences" to come!

They took part in the adventure!

Coordination:

Hélène Laxenaire

Authors:

Gatien Bataille

Jean-Michel Cornu

Antoine Delarue

FNAMILR

Mathilde Guiné

Claire Herrgott

Emilie Hullo

Corinne Lamarche

Hélène Laxenaire

Heather Marsh

Laurent Marseault

Daniel Mathieu

Outils-réseaux

Jordi Picart i Barrot

Manon Pierrel Frédéric Renier

Violette Roche

Elzbieta Sanojca

SupAgro Florac

Vincent Tardieu

Laurent Tézenas

Françoise Viala

and the Animacoop trainees.

Drawings:

Eric Grelet

Conception of routes

Claire d'Hauteville

Hélène Laxenaire

Elzbieta Sanojca

Translation in French:

Collaborative translation by members of the group AnimFr (article about stimergy)

Translation in English:

Koinos

Suzy Lewis-Vialar

Abdel Guerdane

Translation in Catalan:

Koinos

Jordi Picart i Barrot

Proofreading (of the French part) :

Caroline Seguin

Standardization of texts:

Cathy Azema

Gatien Bataille

David Delon

Corinne Lamarche

Hélène Laxenaire

Christian Resche

Cécile Trédaniel

Development:

Florian Schmitt

Graphic standards:

Imago design

Settlement and monitoring of the Leonardo project

Guy Levêque

Cathy Azema

This work was achieved within the framework of a project of transfer of innovation (TOI) funded by the European Union through the Leonardo Da Vinci program.

All the contents (texts, images, videos) are under Creative Commons BY-SA 3.0 FR license. This means that you can freely distribute, modify and use them in a commercial context. You have two obligations: quote the original authors and the content that you create from ours should be shared in the same conditions under CC-BY-SA.

A change in posture for associations: embracing cooperation

Card's author: Corinne Lamarche et Claire Herrgott - SupAgro Florac

Card's type of licence : Creative Commons BY-SA

Testimonies: Setting up a one-day training course on network facilitation for local associations.

Why CoopLoc?

After the training course CoopTic, we were asked to explain to some fifteen facilitators what we had learnt, in what was called a "scaling-down phase". Inhabitants from Lozère, with a dense associative fabric, wanted us to share our experiences with the local associations. We often heard: we always find the same people attending the different associations, people don't participate,...so, how can we encourage participation? How can we provide paid people or volunteers with a tool to optimise the way they facilitate these association networks?



Formalising the project

At first we were wondering what the duration of the training should be, the number of participants, the content of the course: we wanted to deal with so many things we had heard and experiences in Cooptic.

At the Moustic Meeting, we signed up for a workshop on the Project accelerator method. After forty-five minutes at last we had found the answers to our questions: "Conceiving a 6-hour training tool for 15 people with three objectives: living an irreversible cooperation experience, discovering collaborative tools and formulating a change in posture to facilitate participation of a network or association's members".

Thanks to this method, around ten people cleared the way and opened action tips to us.

What tools for organisation tasks?

The tools used depended on the tasks to be done:

- a wiki: where we created a section called Organisation (pedagogical plan, questionnaire), a section on Training (a page for participants where everyone could introduce themselves, a page for the day's tempo, a picnic page to organise a collaborative picnic) a section on Resources (links to networks and facilitator training resources, sites, articles, tools and a bibliography)
- a file shared on Google Drive: a form for the registration of participants, for the report sent one week later; a text file to write an email between two people to then send it to the participants; a text file to write the press review article after the training course where all participants could contribute;
- a Pad: for collaborative writing during the day of training;
- a freeplane: one for a summarised introduction to the session, with Internet links; and another one that was completed on-site, at the end of the session, to explain the remarks made by the trainees;
- a Doodle: to organise a picnic, which was sent to each participant to foster a bit of sharing
- a Dropbox: to save final documents (the final email on pdf, the freeplane, the attendance sheet, the chart for the barcamp).

Pooling resources on the platform CoopTic during our own training allowed us to recover some parts of the course, (especially the course by Jean-Michel Cornu on Cooperation in 28 keywords)

On site, we were asked to fill in an on-line chart with the associations everyone knew, giving an email address or a physical address to increase our outreach.

Using these tools allowed us to reduce the number of meetings, and we were able to work on on-line documents, at a distance, between several people (to improve their contents) and to get the trainees involved in the training right from the start, as well as along the way.

Internet link: http://wikis.cdrflorac.fr/w/CoopLoc/wakka.php?wiki=Accueil

A pad for a rural accommodation. What for?

Card's author : Corinne Lamarche - SupAgro Florac Card's type of licence : Creative Commons BY-SA Testimonies : Creating a *pad* in an association

Why use a collaborative writing tool for the meetings?

As a member of the accommodation's office, I would receive several emails to prepare the meeting agenda and at the end I never knew which was the right one. Also, the minutes would be sent fifteen days after the meeting, announcing an event that had happened three days before. Since I didn't attend the meeting, the information was outdated. There was another issue that was a problem: I blamed it on not being physically there at the meeting and not being able to participate in the meeting. That is why I suggested created an on-line space for collaborative writing, using framapad or piratepad.

Before the meeting

Ten days before the meeting, I sent the address for the pad by email with an initial draft agenda asking the office members to complete it. Everyone could mark on it whether they would attend the meeting or not, instead of sending emails to everyone saying if they would attend or not. People would complete the agenda and sometimes discussions would start before the meeting, or some issues were discussed beforehand, reducing the actual duration of the meetings.

During the meeting

Locked at home, the day of the meeting I could participate from home. I would read the discussion thread, typed by two people who were at the meeting, and I could intervene by asking questions, or asking for clarifications by adding them to the discussion thread. I really appreciated being able to participate despite my own personal constraints, and feeling as if I were there thanks to the chat and the engagement of those who were attending the meeting. This made me feel reassured since even if I was not physically at the meeting I could still find out what was going on and follow the discussions from home. The guilt I felt disappeared and my desire to participate was partly covered.

After the meeting

The day after the meeting I would export the notes taken on-line to a word document and saved it in my "CR Foyer rural" file. The facilitator did not need to send me the minutes by email.

Internet link: http://framapad.org/

A wiki at the service of a facilitation work group

Card's author: Gatien Bataille

Card's type of licence: Creative Commons BY-SA

Testimonies: Since 2012, a work group (WG) on "outside" facilitation is organised in the French-speaking Belgium.

This WG targets environmental education professionals, teachers, volunteers and supporters...

It aims to create the adequate conditions for collective work to promote nature walks in Wallonia, for adults and children alike.

After some "traditional" management by the WG (exchanging emails) the network facilitator decided to create a wiki (yeswiki) together with a mailing list. This step forward allowed creating a more participatory and decentralised dynamic within the WG.

Initially, the wiki was created and customised by one member of the network with the technical skills.

The wiki pages had been conceived so that "everyone could modify them", the network facilitator had control over the whole content on the wiki and didn't depend on anyone to modify the wiki and bring life to it. To reduce the barriers to participation even further (some network members were not at all keen on using ICT tools and the wiki, even if it is easy to do) "pads" (spaces to write directly without needing an account or technical skills) were included in some of the wiki pages (drafting agendas, minutes of the meeting...).

Using this wiki allowed:

- feeding a photo album subject under a CC BY SA licence together
- creating a collective search
- co-drafting agendas
- centralising minutes and work documents
- · sharing a mind map including the status of the work area

Using this wiki lead to the following remarks:

- explaining the licence used for collective productions (CC BY SA) was met with astonishing enthusiasm
- co-drafting the agendas and minutes was a joy for some members who weren't used to doing this kind of thing in their structure
- It will be useful to have a training session on the wiki so that ALL members can make the modification they want to the wiki

Internet link: http://www.tousdehors.be

Conceive a training session

Card's author : Outils-Réseaux

Card's type of licence: Creative Commons BY-SA

Description: A conception methodology formalized in six stages:

- Preceding survey
- Analysis of information.
- · Architecture's conception.
- · Course guide.
- Create material.
- Finalization.

1. Preceding survey

The first step in the conception of a training session is to carry out a survey on future participants and their needs in training.

Exchanging with the sponsor is important to determine the demand of this latter (conditions of contract or call for tenders) and identify the true training needs.

Knowing the audience

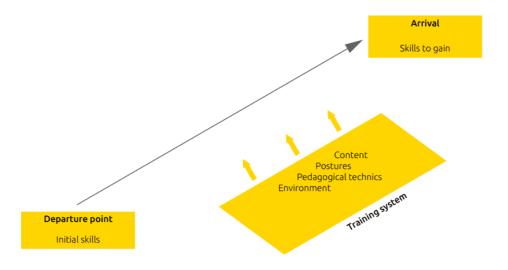
Questions that must be addressed :

Who are they? What are their jobs and how are they evolving, Do they have experience? Have they got an initial training? How is the project of training session going to be presented to them? What do they need to know? What are the favourable conditions for their training?...

Identifying the needs in training

First quality criteria of a training session: it must fit the participants needs.

In this context, the need is specified as a gap between noticed and expected skills.



What is the meaning of "skills"?

It is the knowledge of how to act resulting from mobilization and an efficient use of all internal and external resources in a professional environment.

- internal resources : knowledge, attitudes (manners), skills (know-how)
- external resources : environment, motivation...

How to identify initial skills?

- interviews with the future trainees (that happens very rarely)
- preliminary questionnaire.

How to identify the skills to get?

- interview with the sponsor
- · observation in the field
- analysis of the professional environment evolution (what will be the future professional environment of the trainee ?) ...

Identifying the environment

Where does the training session project come from ? What makes it a stake coming within the competence of training ? Why now ? Which means and resources are already available ? What are the drawbacks ? What may be the consequences of training on trainees environment ? (which impact will the training have on the trainees environment ?)...

Choosing a rallying dea

To give birth and support the interest on the project, it is useful to crystallize expectations on a main idea, a meaningful theme which accompany the project all along its evolution. This idea will often be the guiding principle along the conception.

2. Analysis of information

It's about being in proposal forces by translating the identified training needs into training objectives, available in conveyable content (knowledge) and in means to do it (methods).

Choice of objectives

To start the conception of a training session correctly, one must be sure to have a sharp and correctly stated training objective.

The objective is important because it is:

- a contract: towards trainees, towards the sponsor.
- a safeguard: against a great quantity of information. The criteria is simple: why saying or doing this will help people to achieve their goal?

To start with, the major objectives of the training session must be clarified (session). They can be formulated with the sentence: "When the session is over, the trainee must be able to ..."

Afterwards, this objective must be divided into sub-objectives linkable to the different sequences of the session... (three domains must be covered: knowledge, know-how, manners).

The last stage is about hierarchizing these sub-objectives, specifying those which maybe deleted if time is short.

useful to know :

Objectives are expressed in verbs.

The SMART diagram enables to check quickly the quality of objectives. A good objective is :

- Specific
- Measurable
- reachable
- Realistic
- Temporally defined

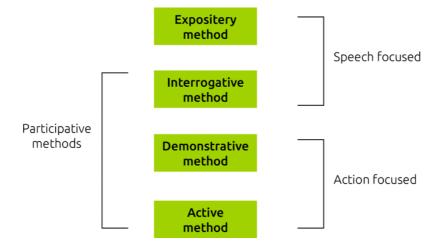
Choice of content

From objectives, content and sequences get more precise. Knowledge have to be worked out : concepts, information, examples, activities... All the things needed by the trainee to get the pointed out skills.

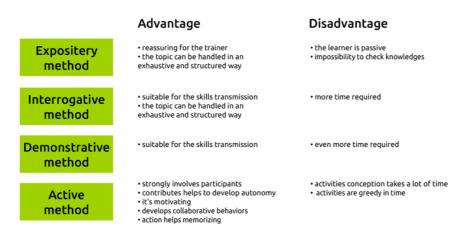
Methods

Knowing how to choose educational methods means to know how to be educational.

The method defines the transmission mode for the trainer and the acquisition mode for the trainee. There are 4 great educational methods:



Advantages and drawbacks of the different educational methods



Evaluation indicators

The last point of educational analysis of information. It's about pointing out criteria which allows to say that a goal is reached. It's a teadous work but it's important to start it as soon as the training session is designed.

3. Design of the training session's framework

When the step of gathering all the information is over, the educational itinerary has to be studied. The main question of this stage is: how do we reach the goal of this training session?

Considering the initial level of audiences:

- it can be either done in one sequence but it's rarely the case,
- or the progression can be divided in several intermediate stages (sequences, modules...)

Division into sequences

The division into sequences more often found in the conception of short training sessions (1 to 3 days). In longer sessions, these intermediate stages are rather called modules.

An intermediate objective called "educational objective" matches each stage (sequence or module).

How to proceed?

A "sequencing diagram" can be used to realize the educational study for example :

sequence/module (name/ code)	objective	contents	technics	technics	length
M:1	objective	know the concepts linked to cooperation	course 12 facets of cooperation	report	3 h

M:2			
M:3			

Framework or educational thread

The framework is an organisation of sequences over time. It allows a global vision over the training but is also a mean to adapt the sequences progress to external constraints (holidays, bank holidays, events specific to the trainees environment) or to daily rythms in short training sessions.

Characteristics of a good framework:

- · logical and progressive
- with a good pace (steadiness...)
- · which alternates technics
- · which respects les

Diigo

Card's author : Frédéric Renier - SupAgro Florac Card's type of licence : Creative Commons BY-SA

To begin with: Online service which allows to find your favourite websites whatever internet-connected computer you are using.



Official website : http://www.diigo.com Tool's boxes : Web Watch tools

Introduction: Diigo allows to save anything which has an internet address (webpage, post, video, podcast, RSS, online picture...) in a database. It is a possible alternative to the use of web browser's bookmarks (also called favourites). Saving them is fine, but finding them again is even better. That is why each recorded bookmark will be defined by tags and a short description.

Requirements:

- Creation of your own Diigo Account.
- Understanding the interest of tagging an internet data.

Some practical uses:

- Record, characterize and classify your own bookmarks: to create an online database. Bookmarks can be public or private (in this case they can only be seen when you are logged into your Diigo account). It is possible to record a copy of the page (upload cache).
- Use Diigo as a web browser: for the index done by the community. We explore together all the bookmarks recorded by the Diigo community. The research functions are well developed.
- $\bullet~$ Post all the tags in a cloud: on a CMS (content management system) as a Wiki, a blog, \dots
- Create a RSS: for all the bookmarks from your Diigo account, for a tag in particular or for a body of tags (gathered in a list).
- Cooperate with others within a group: (public or private) to propose and comment resources. There are RSS for each group and it is possible to define a list of preferences for the group.

Using the tools:

- Create your own account and learn the basic : Video tutorial by the Association des Bibliothécaires de France (ABF)
- Include a Diigo toolbar in the browser
- Get trained to the use of the toolbar : Video tutorial by the Association des Bibliothécaires de France (ABF)
- Creating Diigo groups : Video tutorial by the Association des Bibliothécaires de France (ABF)

Going further

- Using lists to generate easy copy paste html reports, proposing one's favourites (upright: play as web slides).
- . Linking a Twitter account to Diigo, which allows to tweet some chosen bookmarks or to include one's favourite tweets in the Diigo account.

Advantages :

- The question of tags (deleting, modifying, adding) can be done easily on a whole group of bookmarks.
- Html export is very useful for the making of web watch deliverable.

Drawbacks: Like all bookmarks managers, the creating of a list of tags requires rigour, see advices here page 26

Licence : Proprietary software, Freemium

Using: It could be easier but also more complicated

Setting up: No setting up

What we learnt from Cooptic

Hybrid training combining distance and on-site "learning" is an excellent tool for life-long professional development.

However, many conditions are required for this type of training tool to be a real learning ecosystem.

The Cooptic experience has reinforced our convictions regarding certain conditions for training to be successful in the digital era.

Training is no longer a pyramidal transmission of knowledge, where the person that knows passes information down to the person that is learning. It is a <u>cobuilding</u> of knowledge by networking available information, chosen by the trainers; individual knowledge and experiences that are collectively enriched by reflective exchanges. The training process is rendered explicit by the trainer so that the training provided enables the process of learning to learn.

People are at the centre of the learning process. But these people are easily connected to the world and to others thanks to the new technologies available. In the training, Cooptic and Animacoop, its French equivalent, we have experienced the construction of learning communities that operate in a similar way to epistemic communities (cf. supra). Trainees publish articles and create training itineraries while gradually becoming active "amateur-experts". This new quality in people that are training is a real conjunction of intellectual, pedagogical, and even democratic ambitions that really sets the grounds for the pleasure of learning.

The work of trainers changes because it entails several roles in parallel:

- "Expert" trainer: is the reference for the subjects dealt with and transfers knowledge.
- accompanist: is the person that structures and accompanies the group's progression in a learning environment based on communication and exchange.
- tutor: is the person creating an individualised link with each of the learners helping them to overcome the isolation induced by distance learning.
- "technician": is the person that makes sure that all technical devices work properly.

These new "roles" fulfilled by one or more trainers require deep changes:

- reconsidering "distance" as a space and time with multiple possibilities for interaction and learning. It is possible to learn, create links, work together and produce a resource in multiple ways:
 - o asynchronous distance contribution based on availability of a space for writing, sharing resources, exchanging via email or a forum,
 - o synchronous distance during video-conferences or exchanging practices between groups,
 - on-site and distance at the same time...it is possible to organise a course on video-conference with two groups in parallel at two different sites.
- making the relationship between trainers, learners and knowledge more horizontal. In the flow of information and exchanges, the trainer is just one element among many others.
- adopting the "surf method" 1.....accepting uncertainties and being brave enough to experiment during the process. Trainers are the ones guaranteeing the methodology: they create the balance conditions and do not necessarily master the form of co-production outcomes.

Innovation elements and the effects they have on the training tool and the cooperative learning

How Cooptic innovates	The effect on training	The effect on cooperative learning		
Choosing a wiki as a training platform	Technical device that is easy to use with an intuitive configuration and carefully designed graphics. The trainer tries to minimize any possible technical difficulties.	Reduces difficulties for participation. Generates trust in the tools. Creates a feeling of pleasure. Encourages trainees to publish on the NET.		
A common space and individual spaces	The wiki platform enables creating personal spaces that are easily linked to a collective support.	Belonging to the learning group is natural (common space Individualised learning is possible (personal space		
Open contents	Courses are posted on-line and are accessible to all outside training times.	Freedom to refer to the courses at all times. Greater availability fo activities and exchanges		
Learning contents that extend beyond those in the courses	Posting the course on-line "frees" time to accompany trainees along the process of acquiring skills.	Knowledge acquisition: "learning to learn" and "learning to wor with others		
Modular structure	Contents are divided into units (granulated). The general itinerary is defined, but it can be modified during the training.	Building a more personal itinerary is possible		
Systematic approach	Contents are selected so they correspond to the activity as a whole, the collaborative network and to the different levels (individual, group, environment).	Acquisition of global perspective. Relatively complete study of the collaborative processes.		
A multiplicity of structured itineraries	Modular course itineraries (the life of a network). Group activities itinerary (learning community). "professional project" itinerary (collaborative environment).	Multiple opportunities to deal with issues on cooperation and collaboration; put them into practice, facilitate them. Analysis of the collaborative process.		
Gradual change in the size of work groups	Activities are programmed based on progression: individual exercise, work in pairs, in groups of 4 to 8	Practice on epistemic communities. Exercise on ephemeral gro		
Networking and exchanging practices	The activity is conceived as a knowledge aggregator. The trainer provides the methodology.	Valuing experiences as a source of knowledge (reflective practitioner). A particular form of professionalisation (based on the experiences of others). Reinforcing self-esteem.		
Co-production of contents	An evolutionary platform: everyone can add pages and text. The trainer accompanies the process and ensures it is consistent.	Active stance towards knowledge. The sense of creating a "common good".		
Notion of "presence" from a distance	A fine-tuned articulation of distance and on-site times. The effort of accompanying is placed on interaction between participants. "Distance" accompanying is systematized (fixed points with the trainers).	The effect of distance decreases or even transformed. Removi project and culture proximity method		

For further information: epistemic communities

enables a shared understanding. They are heterogeneous groups. Therefore, one of the first tasks for its members is to create a *codebook*, a form of "code of conduct", defining the aims of the community and the means to achieve these aims, as well as the rules of collective behaviour. Therefore, what distinguishes an epistemic community is, first and foremost, the procedural authority, that ensures progress towards the established aim while allowing participants a certain degree of autonomy.

The production of knowledge is done based on the synergy of individual specificities. This requires that the knowledge that flows within the community is made explicit. This is done by converting tacit individual knowledge into explicit and collective knowledge: the members of epistemic communities are united by their responsibilities to value a particular set of different knowledge. The aim of the assessment is therefore related to the individual contribution of effort towards a collective aim that is to be achieved, and the validation of the cognitive activity (production of knowledge) of each member is done by their peers based on the criteria established by the procedural authority. The same applies to the recruitment of new members in this type of groups: it is done by the peers, following the pre-established rules regarding the potential in new members to achieve the community's aim.

Bibliography

Cohendet, P., Créplet, F. et Dupouët, O., (2003), Innovation organisationnelle, communautés de pratique et communautés épistémiques : le cas de Linux. Revue française de gestion, n° 146, 99-121.

1 Rosnay, Joël. Surfer la vie : vers la société fluide. Paris : Les liens qui libèrent, 2012