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Pedagogically sustained Adaptive LEarning Through the exploitation of Tacit and Explicit knowledge

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Thematic Priority: Technology-enhanced learning

D.PAR.08 – Analysis of Instrumental Genesis lived by the CoPs

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Summary

The research presented in this deliverable aimed at observing and analysing the use of PALETTE services in authentic CoP contexts. We first present our conceptual framework based on the instrumental genesis theory. We then present our methodology for the generation of data and the analysis. Seven cases of design in use of PALETTE services and scenarios by CoPs are then described and analysed. In the discussion section, we carry out a cross-case analysis aiming at highlighting the common conditions of use of the services through the seven analysed cases. This discussion provides reflection that may inform the use of PALETTE services by other CoPs in other contexts. Finally, in the conclusion, we reflect on our methodological approach and results, and provide guidelines for further research.

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1 – Foreword: general introduction to D.IMP.08, D.PAR.08 and D.PAR.06

At the end of the PALETTE project, different WP1 and WP5 objectives and tasks converge. This convergence is made concrete by three deliverables:

- D.IMP.08: Instances of Implementation of PALETTE Scenarios
- D.PAR.08: Analysis of Instrumental Genesis Lived by the CoPs
- D.PAR.06: Learning and Organisational Resources: Conceptual Instruments for Self-Analysis, Learning and Developments of CoPs

Each of these deliverables tackles a common issue from a different point of view. Indeed, the main issue at the end of the project is not only to report what has been done with the CoPs we have collaborated with but also to propose consistent analysis and guidelines for other CoPs and stakeholders involved in varied domains and interested in CoPs issues. The challenge here is to provide the reader with a more general and analytic view of the PALETTE outcomes that could be used in other situations by other stakeholders. In other words, at the end of the project, we have to switch from activities, analysis and development of ‘specific’ CoPs to a more ‘generic’ approach. This is both related to the scientific objectives of PALETTE (supporting CoP development and the CoP members’ learning) and expected impacts of the project for organisations and society, as precised in the DoW (pp. 4-8).

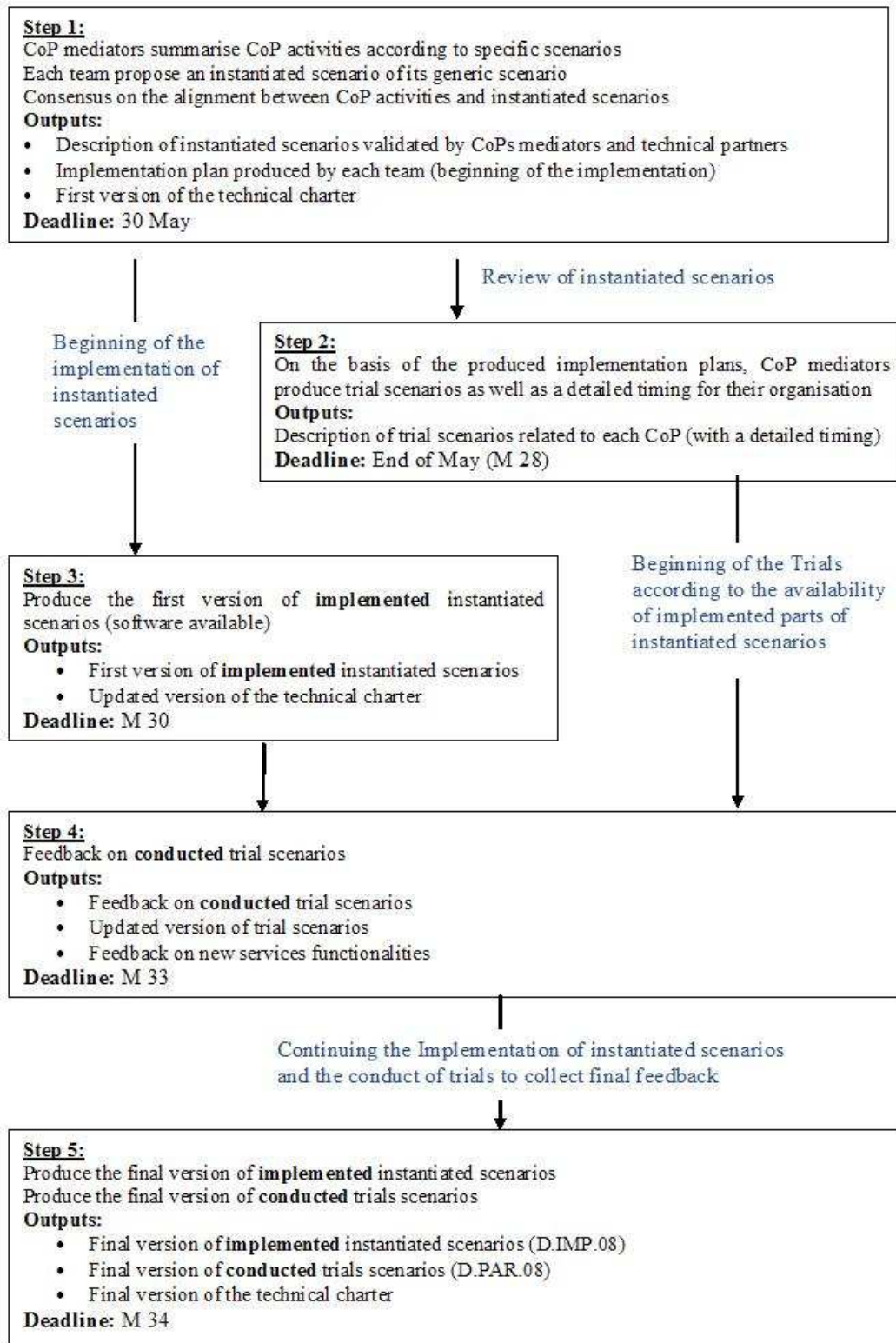
In D.IMP.03 (“Revised Specifications of Services and Guidelines for Services Orchestration”, May 2007), we introduced and defined the difference between ‘specific’ scenarios for CoPs (i.e. scenarios answering specific needs of CoPs) and ‘generic’ ones (i.e. scenarios answering similar needs of various CoPs). This distinction then informed the writing of the D.PAR.03 (“Descriptions of 6 Scenarios and of the Results of 6 Validated Trials”, July 2007) and the organisation of the second half of the project with multi-disciplinary teams and CoPs. In D.IMP.05 (“First Version of PALETTE Integration: Conceptual and Technical Integration”, January 2008), we set up a methodology for developing and validating Generic Scenarios. We also identified three such scenarios from the specific scenarios of the CoPs we are collaborating with and organised working teams for designing, developing and implementing each of them:

- ‘Reification’ scenario that is related to the production, enrichment, search for, and reuse of CoP resources;
- ‘Debate and Decide’ scenario that is related to debating and arguing about an issue and collaborating for decision making;
- ‘CoP identity building and animation’ scenario that is related to the management of CoP activities and the resulting development of CoP identity.

Even if they lead to the development and implementation of characteristic activities and services for CoPs, these three generic scenarios are strongly interrelated. From the Wenger theory (Wenger, 1998), reification and participation are two processes at the heart of a CoP. Following this author, there is no practice reification without members’ participation and conversely. The articulation of reification and participation lead to ‘negotiation of meaning’ within a CoP: the members discuss the meaning of their practices, views, ideas, vocabulary, etc. and so highlight the way they experience their domain of activity. The outcome of this discussion is a progressive definition of the CoP identity: it is through negotiation that the CoP members can define their objectives and precise domain regarding other external groups. It is also on the basis of this identity that the CoP will continue to evolve, organise further activities, and recruit new members.

In the introduction of the third PALETTE implementation plan, we have introduced the relations between D.PAR.08 and D.IMP.08 summarized on the figure below.

Figure 1 – Summary of the relation between D.PAR.08 and D.IMP.08.



D.IMP.08 is about the technical implementation of the generic scenarios and their instantiations. D.PAR.08 is about how the specific scenarios have been conducted with each CoP and what the analysis of these trials shows about the appropriation of the services by the CoPs and the changes that occurred within them. In addition, the D.PAR.08 provides a cross-case analysis highlighting the

conditions of use of the PALETTE services in the trials. This cross-case analysis will be useful for external CoPs that are interested in more generic considerations on the use of PALETTE services.

In addition to these two central deliverables, the D.PAR.06 describes the development and trial of Learning and Organisational Resources (LORs) that aim at providing the CoPs with concrete scenarios of activities for members' learning, activities organisation and choice of tools.

Regarding the implementation of the PALETTE Participatory Design Methodology, these three deliverables highlight:

- How the PALETTE services met CoP specific needs;
- How the CoP changed and developed through the use of the PALETTE services;
- How the PALETTE services evolved and changed through the collaboration with CoP members;
- How other CoPs and stakeholders could benefit from the experience of PALETTE designers and CoPs.

In parallel to these three deliverables, D.EVA.06 (January 2009) will adopt a global and critical point of view and describe PALETTE methodology and main outcomes regarding the project main objectives and expected impacts.

2 – Introduction

The main objective of this deliverable is to present the scenarios that have been trialled with participating CoPs and to report our observations and analysis in order to develop both the implementation of the generic scenarios and CoP activities.

The participating CoPs have conducted and conduct not only the scenarios presented in this deliverable but also other specific scenarios (or “situations” as used in D.IMP.08) that have not been systematically observed and analysed (see D.IMP.08 for other specific scenarios). We here chose meaningful activities organised by 7 different CoPs operating mainly in the domain of education, teaching and professional training.

2.1 Objectives and content

This deliverable has four specific objectives:

1. Regarding the CoPs: to provide them with a feedback on their internal processes of appropriation of uses of PALETTE services; to propose them new activities or procedures for the uses of the services.
2. Regarding the developers: to provide them with a feedback on the real use of the PALETTE services by the CoPs; to propose them new functionalities or possible articulations with other services.
3. From a scientific point of view: to describe the instrumental genesis process of distributed groups such as CoPs; to elaborate a specific method for this description. In this perspective, this research is exploratory.
4. Regarding other CoPs: to provide a cross-case analysis in order to highlight in what extent our observations and analysis are meaningful for other CoPs and are able to inform new activities and processes within other CoPs.

The content of the deliverable is organised in nine sections. In the two following sections respectively the analysis of trials is situated within the whole PDM and the theoretical framework related to the instrumental genesis approach is presented. In the section 5, the general common questions of research regarding the instrumental genesis analysis are presented. Then the general methodology for observing and analysing the trials is presented in 5 steps (section 6). In the section 7, the analysis of the trials is reported. In the section 8, the discussion will concern the cross-case analysis. Finally, the section 9 will present our conclusions and the perspectives both regarding the development of CoP activities and PALETTE services, and the scientific questions that still remain to cover.

2.2 Definition of trial

A trial consists in the concrete conduct of a scenario (or piece of scenario) of use of one or several PALETTE services within CoP authentic activities. Depending on the nature of the activity and scenario, a trial extends over several weeks or months. For the CoPs, the aim is to integrate the use of a service or a set of services within its usual activities, and at the same time to improve its activities and enable members' learning. The observation does not apply to the whole trials but to specific activities conducted within the trials and that particularly make sense regarding specific questions of research related to each CoP.

3 – General Framework

3.1 The trials in the PDM

The observation and analysis of the trials takes place in the 'design in use' phase of the Participatory Design Methodology: "Participatory design in use" is related to the ongoing development of services and scenarios while the CoPs trial them. The observation and analysis of these trials allow continuously developing the services and scenarios." (p. 17 of the "Refinement and Instrumentation of the Participatory Design Methodology", 2007). It is a phase in which the CoPs begin to appropriate and use the integrated PALETTE services through a certain period of time. This phase is characterized by close collaboration between the CoPs and the developers for negotiating the possible uses of the services and making these services evolving.

The trials of the Services by the CoPs and their observation are described in the "Refinement and Instrumentation of the Participatory Design Methodology" report as follows (p. 28) and in figure 2 below.

"Once the CoPs agree on the conditions of trialling, the scenarios and different services can be implemented. The trials are led over a significant period of time with the concerned actors. The Teams support their organisation and implementation.

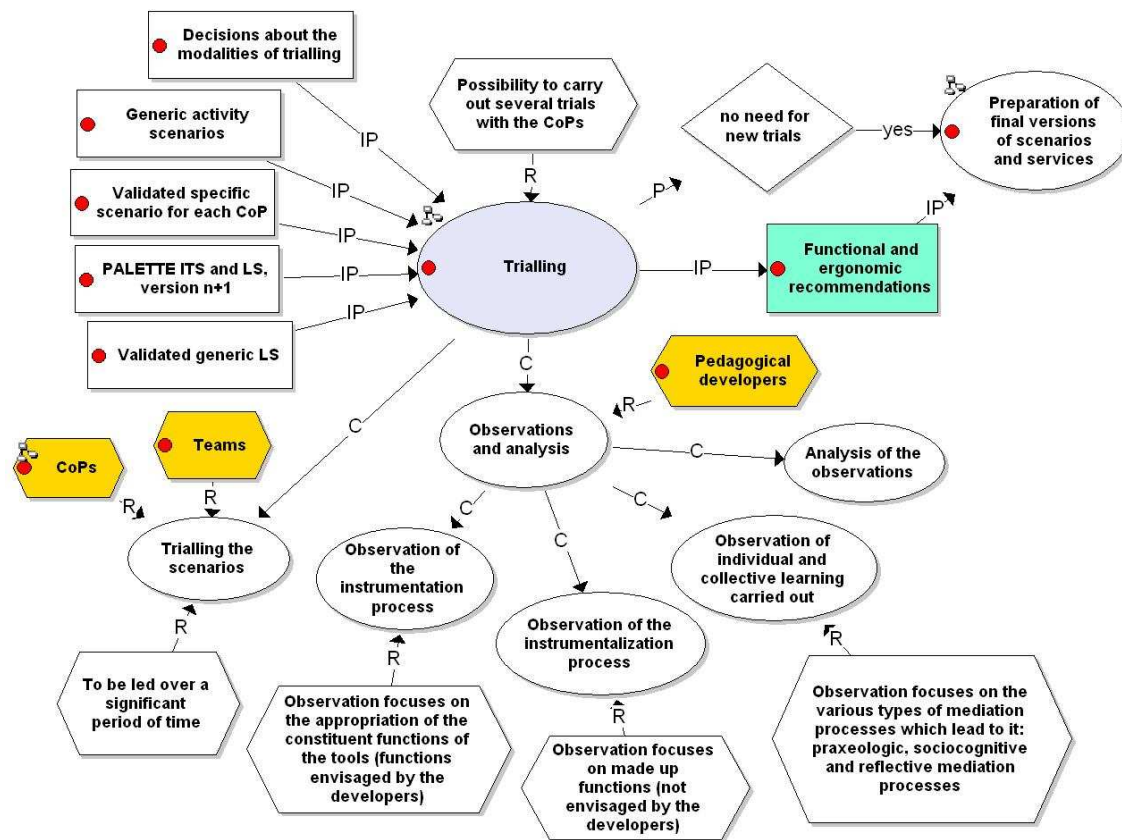
The pedagogical developers observe and analyse the trials for producing functional and ergonomic recommendations to the developers of Integrated Technological Services and Learning Services. The observation concerns three processes (Béguin, 2003; Béguin & Rabardel, 2001):

1. The instrumentation process. The observation focuses on the appropriation of the services functions by the CoPs members.
2. The instrumentalization process. The observation focuses on the construction of new uses of the services by the CoPs members (uses not expected by the developers).
3. The individual and collective learning carried out throughout the trials and especially the mediation processes that lead to learning.

After the developers modify and adapt the services and scenarios following the recommendations produced here, subsequent trials may be organised with the CoPs. However, if the Teams decide that there is no need for new trials, the developers prepare the final versions of the scenarios and services."

Within this step, the objective of the Task 4b of the WP1 was to focus on depicting instrumentation, instrumentalization and mediation processes through observation of uses in real situations. Observation and analysis purpose was to provide a set of recommendations about the appropriation of the Services by the CoPs. These recommendations aimed at improving the functionalities of their Services in conjunction with recommendations formulated in D.PAR.04 (User Centred Description of PALETTE tools and services and first analysis of usability). It is important to note that the trials aimed at observing the use of technological services but as integrated in authentic activities focused on 'Reification', 'Debate & Decide' or 'Identity building'.

Figure 2 – Trialling



3.2 Evaluation framework

D.EVA.02 has provided PALETTE researchers with a general evaluation framework. By defining generic and specific indicators, it provided a common framework for evaluation at different levels and moments throughout the project. Indicators and related research questions will be found in appendix 1 (p. 132).

4 – Conceptual Framework

This section is partly based on section 3 of *Refinement and Instrumentation of the Participatory Design Methodology* report (p. 33). It presents the main concepts used in the research: instrument, instrumental genesis, instrumental genesis in groups and mediation of the instrument.

4.1 The concept of instrument

The instrument-mediated approach constitutes the theoretical framework of this research. It is based on one fundamental concept: the instrument. An instrument is not only an object, an artefact – or a tool – that is used by an actor in order to carry out an activity. It is a “mediator” between the actor and his/her activity.

“An activity consists of acting upon an object in order to realize a goal and give concrete form to a motive. Yet the relationship between the subject and the object is not direct. It involves mediation by a third party: the instrument.” (Béguin & Rabardel, 2001, p. 175).

Consequently, we can postulate that:

1. An instrument is composed of two facets: an object and the actor's mental schema that defines the use of the object in a certain context for a certain purpose (= "use scheme"). "An instrument cannot be confounded with an artefact. An artefact only becomes an instrument through the subject's activity. In this light, while an instrument is clearly a mediator between the subject and the object, it is also made up of the subject and the artefact." (Béguin & Rabardel, 2001, p. 176).
2. As a mediator, the instrument is not neutral regarding the achievement of the activity by the actor. Depending on its use, it is able to change the activity... and the actor him/herself.
3. In return, the actor may adapt or change the instrument if it is not sufficiently suitable for achieving the activity.

"Introducing an artefact in a given situation at best solves old problems. At the same time it changes the nature of the task, creates new problems for which new instruments are necessary, and so forth. Note that the process we need to define is twofold. First, novice users become experts [...], so we must examine how their activity evolves. Furthermore, users adapt and modify artefacts and their environment, whether temporarily or more permanently [...] in an attempt to solve unforeseen problems encountered in action, so we must take into account the inventiveness they bring to their activity." (Béguin & Rabardel, 2001, p. 174).

In addition, according to Vygotsky (1988) and the Activity Theory, an instrument can be material (a technological tool) or symbolic (a model, a grid of analysis). Both Technological Services and Learning and Organisational Resources (see D.PAR.06) are thus instruments for CoPs.

Finally, in PALETTE, the scenarios (D.PAR.03, D.IMP.08) often propose integrated uses of more than one artefact: PALETTE and non PALETTE services. The integration of several artefacts within a scenario will be called a **system of instruments** in order to highlight the fact that different artefacts along with PALETTE services are interrelated and must be considered together when analysing the use of PALETTE services by the CoPs. From a methodological point of view, what we will observe and analyse will be *classes of situations* i.e. types of activities in which artefacts are appropriated and used by CoPs in order to achieve specific objectives or meet specific needs.

4.2 Instrumental genesis

Instrumental Genesis is shaped by two processes, instrumentation and instrumentalization, that can be described as follow.

"The instrumentation is the process through which the *constraints* and the *potentialities* of an artefact permanently condition the action of a subject in order to solve a given problem." (Trouche, 2005, p. 274).

In fact, an artefact, through its functions, structure and organisation of its controls, "constrains" the activity of the actor. It is a process through which the actor changes his/her activity or way to do it according to the structure of the artefact. For example, in Did@cTIC CoP, the reification of the participants' teaching experience through Amaya templates changes the way of taking notes throughout the face-to-face meetings.

"The instrumentalization is a process of personalisation of the artefact; it is thus a process of differentiation of the artefacts through which each user appropriates the artefact. [...] This process can be considered as "defacement" or as a contribution of the user to the process of design of the instrument." (Trouche, 2005, pp. 274-275).

An actor can modify an artefact in order to it suits his/her purpose. Instrumentalization is a process of adaptation of the artefact through the activity of the actor. It is a process through which an artefact is

personalized and is thus a process of differentiation of the artefacts through which each user appropriates the artefact.

Typical examples of instrumentalization are *catachresis*, i.e. uses of an artefact in another way than it has been designed for. For example, in Learn-Nett, some years ago, a students' group has used a discussion forum as a synchronous meeting tool. The emergence of catachresis shows that uses created by users do not necessarily fit with what the designers had expected at the beginning. In some way, the 'ideal' use schemes of the designers do not always correspond to the use scheme constructed by the users in a particular context and situation. This highlights the need for designing flexible and adaptable artefacts, especially when the user is a distributed group who has to collectively negotiate the use of the artefact (e.g. software or Web service). Moreover, this also highlights the usefulness of participatory design approaches through which the design process is collaboration between designers and users.

Instrumentation and instrumentalization processes are conducted by the actor and constitute the two facets of the process of "instrumental genesis" which is the progressive construction of uses of an artefact by an actor and depends of course on the social environment of the actor and his/her purpose.

Béguin & Rabardel (2001, p. 181) describe these processes as follows:

"The concept of instrumental genesis encompasses both the evolution of artefacts as the user's activity unfolds, and the building of utilization schemes, both of which participate in the emergence and development of an instrument. Instrumental genesis occurs at both poles of the instrumental entity (the artefact and its utilization schemes), and thus has two dimensions: instrumentalization, which is artefact-oriented, and instrumentation, which is subject-oriented. Both of these dimensions are related to the subject. What distinguishes them is their focus. In the instrumentation process, the subject develops, while in the instrumentalization process, it is the artefact that evolves. The two processes contribute jointly, and often in a dialectic manner, to the construction and evolution of the instrument, even if, depending on the situation, one of the processes may be more developed or prominent than the other, or may even be the only one implemented."

In order to observe and analyse instrumental genesis, it is needed to observe both the evolution of the actors' use schemes and the development of the artefact.

4.3 Instrumental genesis in groups

The concepts described here above are presented as if the actor was an individual. In PALETTE, the actor is a CoP, a group of actors who negotiate together the use of artefacts in order to carry out specific activities. The process of instrumental genesis is not different but the social dimension has to be considered. Docq & Daele (2001, 2003) proposed a literature review about the micro-sociological construction of uses of instruments:

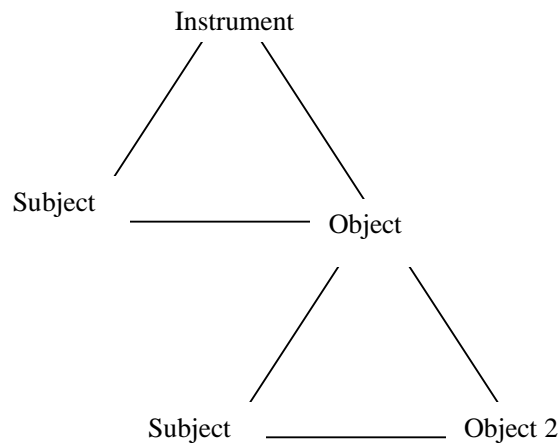
"Two sociological complementary researches were led in the field of technical innovations at work. Flichy (1995) and Fazzini-Feneyrol (1995) showed the importance of negotiating and sharing social representations about the possible uses of a new tool in order to incorporate this new tool in the work. Flichy proposed a theoretical distinction between the "functioning framework" (*cadre de fonctionnement*) which gathers the functioning principles as designed by the tool designers (with possibly theoretical background), and the "use framework" (*cadre d'usage*) which is a building, at one time and by a community of users, of a social representation about the possible uses of a new tool. Fazzini-Feneyrol confirmed by his research the existence of this "use framework": social representations of the possible uses of new tools have to be negotiated between the community users so that everyone shares those representations. "The lack of negotiation

can lead to keep the previous uses in contradiction with those recommended for the new artefact; this reduces to zero the expected productivity gains.” (Blandin, 1997).

These researches “highlight the possibility of persistence of old uses in spite of technical changes introduction” (Blandin, 1997) and let understand why “the logic of use is stubborn” (Perriault, 1989, p. 147). The micro-sociological researches about the building of uses confirm the importance of the community (reference group) involved in the same activity and sharing the same tools. For a collective activity, if the community doesn’t negotiate a common representation about the way of using the new tools, there is a risk of observing no change of uses, even if efficiency gains are promised.”

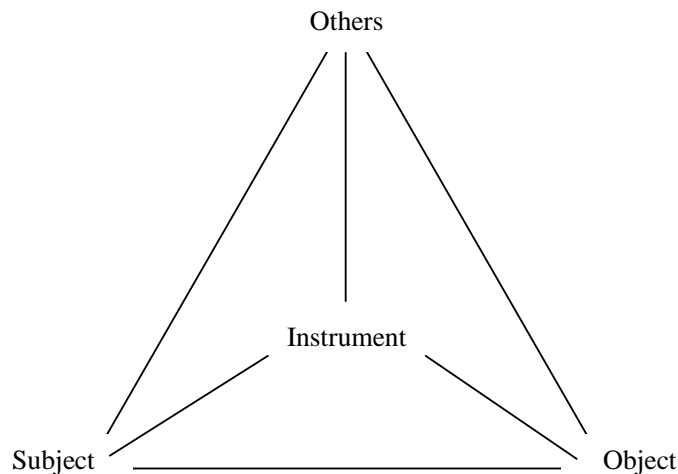
The instrumental genesis of an individual can be modelled as a triangle in which the instrument mediates the activity of the subject, i.e. his/her relation to his/her object. An object could become an instrument in order to achieve a subsequent objective (Object 2).

Figure 3 – Relations Subject-Instrument-Object



In a group, the instrument is a mediator between the subject and his/her object but also between the subject and others:

Figure 4 – Relations Subject-Instrument-Object-Others



Béguin (2003) tells the difference between two processes that occur within groups:

- *Differentiation* is used to reduce the complexity of the activity of a group by sharing tasks. This also allows recognising the expertise of each member of the group.
- *Interdependence* corresponds to the necessary coordination of the tasks by articulating them and taking into account the fact that each task influences the other tasks.

The definition of these processes highlights the need for a group to use artefacts not only to achieve an objective (by differentiating different tasks) but also to coordinate the different tasks (by articulating them). In other words, in order to observe and analyse the activities of a CoP, we need to observe both how the CoP uses the artefacts for achieving its activity, and how the CoP uses the artefacts for coordinating/negotiating the different tasks performed by different members.

4.4 Mediation role of the instrument

This process is transversal regarding the instrumental genesis. As an instrument constitutes a mediator, i.e. an intermediary between an actor and his/her activity, it is able to mediate (affect) actor's knowledge, collective action, and behaviour (Cerratto, 2005, p. 161). Following Cerratto (2005) and Charlier, Deschryver, & Peraya (2006), it can then be stated that an instrument may have different "functions" – or types of mediation – when used by an actor:

- An *epistemic* function when the actor uses the instrument in order to be informed about the object of his/her activity (e.g. reading documents before a meeting, getting information about collaborators' opinions, reading old discussions, etc.);
- A *pragmatic* function when the actor uses the instrument in order to transform the object of the activity (e.g. a document, any manufactured product, etc.);
- A *heuristic* function (or *reflective* function) when the actor uses the instrument in order to transform his/her own actions or conceptions or to manage his/her actions (e.g. feedback on the actions, management and schedule of tasks, management of competences, etc.);
- A *collaborative* function (or *relational* function) when the actor uses the instrument in order to transform the action of another actor or a group of actors or to manage the actions of another actor or group of actors (e.g. the work of an actor is reused by another actor, several actors work on a same document or product, a table of tasks is shared between a group of actors, etc.).

In PALETTE, we are interested in these types of mediations in order to understand the transformation of the CoPs activities and members' practice because of the use of the services, rather than simply describe the real use of the proposed services by the CoPs.

From a methodological point a view, Cerratto (2005) suggests to observe and analyse two dimensions of a collective activity: the relations within a group of subjects who coordinate their actions (i.e. *interdependence*) and the integration of different products into a collective production (i.e. *differentiation*). For her, the crucial point is to analyse the relations between the actions and the individual products of the subjects. This analysis highlights the "activity schemes" of a group, i.e. its "way of acting" for producing outcomes using specific instruments. Two examples of such activity scheme are provided in appendix 2 (p. 133); an example of graphical depiction of a CoP activity is also presented. To understand these schemes can help for elaborating new instruments for the group, advising it in using its instruments or new instruments or analysing the evolution of its activities regarding its issues and needs. This implies direct observation of group's activities with precise grids of observation.

5 – General Questions of Research

Regarding the PALETTE CoPs, the questions here are “how do CoPs collaboratively negotiate the use (and the meaning regarding their activities) of the PALETTE services?” (Or “how do they appropriate the services?”), “how do they deal with their former tools and ways of using technologies?”, “how do they adapt their activities while using the PALETTE services?” and “how do they influence the design of the services in order the services fit their use?”. The questions below drove the research on each case. They have been elaborated on the basis of the literature review and in line with the questions mentioned by the WP6 in D.EVA.02. The WP6 questions framed the PALETTE evaluative research regarding the project main objectives and strategies. We develop how we used them in our research in the next section about the methodology.

In the PALETTE framework:

- **Instrumentation** is about the collective appropriation of a tool by a CoP.
 - How do CoPs collaboratively negotiate the use (and the meaning regarding their activities) of the PALETTE services? Or: how do they appropriate the services, how do they train, etc.?
 - How has the need for use been expressed, negotiated? By whom? Through their discussions, do they refer to possible scenarios? What decisions are made?
 - What are the impacts of the PALETTE service(s) on CoPs activities?
 - What level of adaptation of activities can we observe?
 - What is the (CoPs members) perception of the contribution and constraints of PALETTE services to their activities?
 - What level of appropriation of PALETTE service within the CoPs can we observe (in terms of representation of the use and real use by members – actors concerned, functions attributed to the services)?
 - Which conditions allow understanding the level of appropriation of the services by CoPs members? What is the perception of effectiveness regarding the purposes? How did the negotiation of the use happen? Modes of transmission of the uses (schemes)? Level of articulation with ways of using former tools?
 - What is the more effective service in order to realise the activities (PALETTE, former ones or others)?
 - How do CoPs members negotiate the use of PALETTE services and the meaning regarding their activity?
 - How do schemes of use be transmitted within CoPs (training, information, “awareness campaign”...)?
 - What is the level of articulation with ways of using former tools?
- **Instrumentalization** is about the evolution of a tool through its use by a CoP and construction of new uses of services by CoPs members.
 - How do the CoPs deal with their former tools and ways of using technologies? How do they conceive the interactions between their tools and the PALETTE tools?
 - How do CoP’ members influence the design of the services in order the services fit their uses?
 - Do CoPs members construct new uses of PALETTE services or use these services differently than expected by developers and mediators? At what time? For which purpose (economy, effectiveness, balance of tools)?
 - Do CoPs members ask for specific modifications on services to developers? What kind of modifications (articulation with former tools)?
- **Mediation** is about the way the CoPs plan and develop the use of the services regarding an issue or a need they concretely face.

What has changed while using the PALETTE services in terms of new knowledge acquired by the members or modification of members’ behaviours, attitudes and beliefs?

- In what extent the services and scenarios are means for the CoPs to achieve their activities?

- How do CoPs adapt their activities while using PALETTE services regarding their purposes? What kind of mediation process can we observe? What kinds of impact have PALETTE services on the activity?
 - Epistemic: how do PALETTE services allow being informed about the object of the activity?
 - Pragmatic: how do PALETTE services allow transforming the object of the activity?
 - Reflective: how do PALETTE services support reflexive process of the actor?
 - Relational: how do PALETTE services support relations between actors? How do they change relations between CoPs members?
- What has changed while using PALETTE services in terms of new knowledge acquired by members or modification of behaviours, attitudes and beliefs? What are the conditions of these changes?

These questions have been used for the observation and analysis of our seven cases. However, for each CoP, we only chose the most relevant questions regarding its context and particular interests. We detail the specific questions for each CoP in the following sections 7 and 8.

6 – Methodology

Mediators, within the Teams, have been key actors in conducting the trials. For that reason, a special training has been planned on April 29th 2008 to provide them with further information on instrumental genesis and to allow them having hands on experience about data collecting techniques and data analysis process. Training focused mainly on a) concepts of the instrumental approach, b) organising and conducting research on instrumental genesis analysis, and c) experimenting observation and analysis tools developed for the trials.

The trials have been organised into five stages:

1. Selecting activities in the trials to be observed and precise research questions:
 - Each researcher chooses an activity(ies) to observe regarding four criteria. The activity ought to be:
 1. Related to generic scenarios and to the trials implemented by the WP5 teams with the CoPs;
 2. Significant for the CoPs, their development or their members' learning process;
 3. Conducted through a certain period of time (at least several weeks);
 4. Activities for which we have sufficient traces for the analysis.
 - Each researcher specifies the central question of research regarding her CoP, transversal to the general questions (for example: how did sharing within the CoP evolve through the use of PALETTE services and scenario?). This central question, relevant in the CoP context, will be the thread of the observation and analysis.
2. Describing the initiation/familiarisation processes of the CoPs with the PALETTE services
 - Data are collected from direct observation of related online or face-to-face CoPs activities.
 - If the initiation/familiarisation phase had already been realized by a CoP, data are collected from the analysis of past events/activities organised with the mediators/developers.
 - Each researcher prepares a specific protocol of observation and analysis of her CoP based on the general methodology.
3. Observation of PALETTE services in use
 - Data are collected through direct observations of online or face-to-face CoPs activities (observation of groups or individuals) and through questionnaires, interviews or think aloud activities when appropriated.
 - Collected data are coded. At least two coders code a significant amount of data in order to ensure inter-coder reliability.
4. Data analysis
 - Content analysis methods are used to analyse collected data: thematic analysis (information content), category analysis (frequency characteristic grouped in significant categories), and evaluation analysis (judgements: frequency, direction -positive or negative-, intensity).

- A reflection is conducted about the possibility to generalise the results of the analysis in some ways.
- 5. Reporting to CoPs and developers aiming at informing the evolution of the CoP activities and providing feedback to the developers
 - Written reports and verbal accounts to confront findings and find consensus.

6.1 Stage 1: Selecting activities to be trialled and formulate specific research questions

First of all, for each CoP, one or two activities to be analysed have been identified by mediators according to four criteria contained. These criteria and questions to address for choosing the activities are presented in appendix 3 (p. 137). The table of the appendix 4 (p. 138) presents the chosen activities.

Each mediator selected at least one activity to be observed and formulated specific research questions related to this activity. In addition, a transversal question of research was chosen as a thread for the observation and analysis of each CoP.

Based on activity descriptions and specific research questions suggested by the mediators, WP1 task 4b coordinator, mediators participating in the trials and developers established the list of six activities to be observed and shared the related research questions. As shown in the appendix 4 (p. 138), the chosen activities are strongly related to the three Generic Scenarios. We also related them to the situations presented in D.IMP.08.

6.2 Stage 2: Describing the initiation/familiarisation process

Most CoPs have been familiarized with PALETTE services before to actively carry out authentic activities with them. Stage 2 consisted in collecting and analysing data pertaining to the initiation/familiarisation process. These data have been extracted from existing documents, traces of activities or recalling of past events organised for this purpose by the CoP and with mediators and developers. A three steps procedure was suggested.

- CoPs mediators collect relevant data from emails, online discussions (text or videos), meeting reports, various versions of documents discussed, taped videoconferences, etc.
- Data are analysed by mediators based on a defined list of questions (see in each report in section 8).
- A report is written describing the activities complying with the initiation of the CoPs members to the use of PALETTE services under trial.

For CoPs that were not yet familiar with the PALETTE services, mediators planned the initiation/familiarisation activities. They then collected and analysed data following the procedure described above.

6.3 Stage 3: Data collection on PALETTE services in use

Most of the data have been collected from interviews, questionnaires, narratives, logbook, debriefing, focus group discussions, etc. In other cases, when the situation allowed for it, data were collected through direct observation of online or face-to-face CoP activities related to generic scenarios. Think aloud protocol have then been applied in some cases.

Due to situational differences between CoPs and their activities, the data collection techniques slightly varied from one to another and have been planed differently. Consequently, specific protocols have been developed for each CoP. However, to support the cross-case analysis, general research questions and grids to use for data analysis remained the same.

Generally speaking, data collection implied a two step procedure as follows:

- Data collection. Each mediator planned the data collection with his/her CoP according to the protocol decided upon with the WP1 Task 4b coordinator.
- Data coding. Collected data have been coded using grids of analysis based on specific research questions. Researchers were paired to evaluate the reliability of the coding. One coded some piece of data from the other. Afterward, they checked their agreement on their respective coding (inter-coding reliability).

6.4 Stage 4: Data analysis

For some CoPs, data analysis has been performed by mediators when time allows and when they feel at ease with this task. For others, a team of researchers did the analysis from coded data. Based on the analysis, short accounts were produced. Accounts written by researchers were validated by mediators.

6.5 Stage 5: Reporting to CoPs and developers

Based on the accounts (stage 4), reports have been written by the team of researchers and addressed to the CoPs and the developers. These reports were expected to provide guidelines for the developers and advices for the CoPs through the development of their activities.

Once the analysis for each CoP was ready, we carried out a cross-case analysis. This is specifically reported in section 8 (p. 120).

7 – Analysis of Trials with the CoPs

In this section, seven cases are presented. Each CoP is presented through its context, needs, objectives, domains, main activities, etc. Further information can be found in other deliverables, especially D.PAR.03 (description of the scenarios) and D.IMP.03 (analysis of needs). Each CoP has conducted different activities based on the use of PALETTE services. We chose some of these activities for being observed and analysed from an instrumental genesis point of view. The table presented in appendix 4 (p. 138) summarizes these selected activities by presenting their objectives, steps and relations with the Generic Scenarios. We will go back to the Generic Scenarios in the discussion of results.

For each CoP, a description of the observed activity(ies) is provided, as well as a presentation and justification of specific questions of research and hypotheses. Each researcher has also generated specific data; their methodology is described. The analysis of data is then presented. In the conclusions and perspectives sub-sections, the researchers express suggestions aimed at the designers for developing the services and the CoP itself for developing its activities.

7.1 Did@cTIC – reifying and reusing teaching practices

7.1.1 Introduction

The importance of practice as a source and object of professional development has been known for numerous years by researchers and actors in teacher training (Charlier, 1998; Daele & Charlier, 2006; Huberman, 1995). Inspired by an extensive literature review, Daele's (2006b) model of professional development places teaching practice at the core of the professional development process. Teaching practice is first conveyed, then shared and opened to debate and put to question, possibly leading to its transformation. This approach inspired the creation of groups to exchange practices within the Did@cTIC training program, where participants select topics and activities stemming from questions or problem situations commonly encountered in their teaching practice.

For several years, these exchange groups or CoPs were organised without any real capitalisation of shared practices, making their reuse impossible. With the PALETTE project, Did@cTIC found the opportunity to achieve what it saw as an essential goal: provide university-level teachers with the occasion to describe, in as rich a manner as possible, their practices and reify these practices so as to render them reusable.

A scenario to enable the reification of practices through formulation, formalisation, adaptation and reuse was tested. How can one convey teaching practices, represent them and formalize them so as to extract knowledge from them? How can one describe best practices and render them accessible so that teachers can use them to improve their teaching? These questions guided the interventions tested within the Did@cTIC community (Charlier, 1998).

7.1.2 Elaborating a scenario for reification

Starting with an analysis of its own activity coupled with a theoretical approach on the concepts of reification and practice, the team of moderators elaborated the reification scenario.

Definition of reification

(Wenger, 2005) defines reification as an element central to each practice and crucial to social learning as well as to the production of meaning constructed within a community of practice. Reification is also defined as a “process that gives form to experience through the production of objects that materialise it” (2005, p. 58). It is a powerful tool that “transforms our experience of the world by focusing our attention in a particular way and by allowing new ways of capturing reality” (2005, p. 60). Reification refers to a process as well as to a product, but is not limited to the object. As a constituent of meaning, reification is never complete; is always changing and being enriched and is potentially misleading as well.

Modelling and storyboarding the act of reification

The moderator of the CoP modelled reifying activities, including all actions describing teaching practices by means of structured documents used to represent them.

Figure 5 shows the main activities leading to the reification of teaching practices as proposed to the members of the Did@cTIC community.

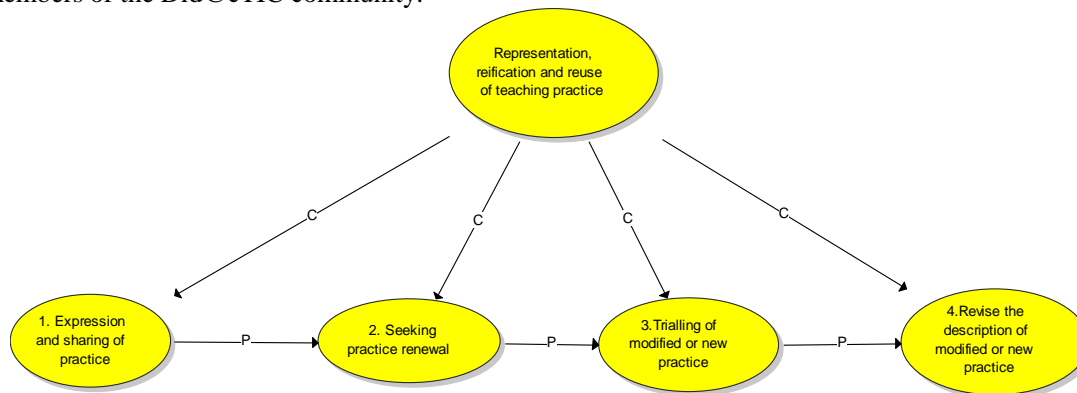


Figure 5 – Higher level of CoP activity including four main activities performed to represent, reify and reuse practices

Principles of development

Several principles guided the development of the reifying scenario and the reuse of practices and services developed with Did@cTIC.

It involved the representation of teaching practices in text form that take into account the context of the shared experience as well as the knowledge that informs it. This reification must be negotiated and adapted. It must be permanent, transmissible, accessible and adaptable. Reifications should open to classification. Their reuse should be facilitated by allowing the extraction of components and the addition new ones.

The structured document, a support for the reification and reuse of practices

One solution to such demands is the structured document. We consider the document an adequate means of representing a practice, so long as it is structured in a computer information architecture sense of the word. A structured document (Boukottaya et al., 2006 and 2008) is defined as a document that conforms to a predefined grammar or a schema that takes the parts of the document and their logical connections into account. XML is a computer language that enables the representation of this organisation. XML can be used to edit, publish or support searches within a document. We know that half the time spent writing using a computer is devoted to formatting the document. One simple principle of the structured document is to separate form from content, freeing authors to concentrate solely on the content. The writing of the document goes only through the selection of an adequate structure and through a validation of the product at the end of the process. This way, same content can be presented in different ways. Thus several functions can be applied to the structure, generating new documents automatically (tables of contents, indexes, etc.). Moreover, based on this structure, it is easy to publish the document in different file formats: .doc (Word documents), HTML (for web sites), PDF (for printable documents), etc.

The production of such documents, however, remains long and complex and normally requires a good knowledge of computer languages and some programming skills. In most cases, authors prefer to write documents ready for publication directly, missing out on the benefits of structured documents. Moreover, to reuse and adapt a structured document one also needs to have some knowledge of the structuring language in order to be able to modify it. In response, one objective was to provide the CoP Did@cTIC the means to easily produce structured documents and then to be able to reuse them without having to resort to editing computer code. We thus attempt to combine the advantages of two approaches: a strict document structure and a simple production and reuse process. The deliverable D.IMP.08 presents the production of such documents supporting reification.

The aim is to provide members of the community of practice a graphic interface that allows them to interact with a familiar representation of the documents in the form of a template. These templates are edited with the help of the software application Amaya.

Other than the editing of structured documents according to a template selected and designed by the community of practice, the DocReuse computerised service allows, on one hand, the automatic reuse, and on the other, the evolution of the very structure of the structured document. Furthermore, as the communities of practice have, over the course of time, accumulated numerous unstructured documents, an additional service was offered to allow the semi-automatic structuring of documents that were initially unstructured. A user wishing to insert an unstructured HTML document into a template can by “dragging and dropping” structure the document. Once the template is filled in, an XHTML instance of the document is produced.

Figure 6 shows the interface of the semi-automatic structuring service. An online demonstration of the service is available at <http://docreuse.epfl.ch:8080/>.

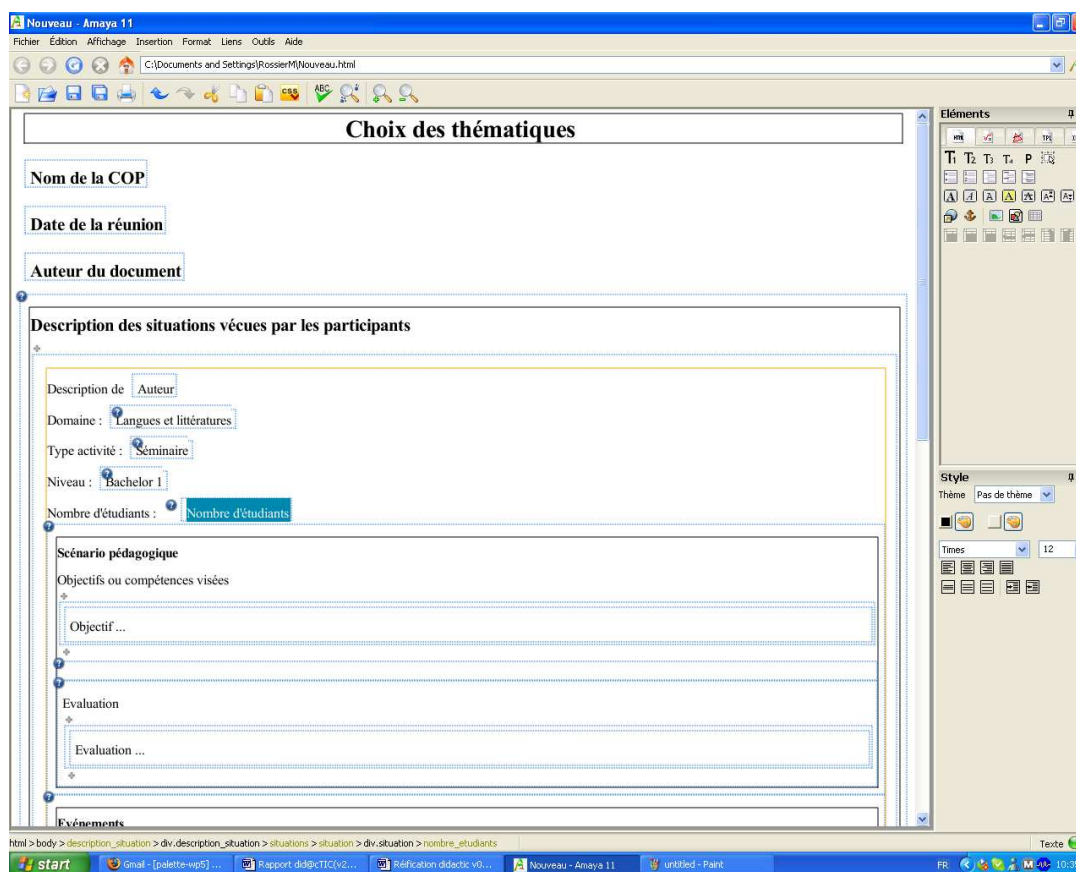


Figure 7 – A screen capture of a template edited in Amaya

This template allows one to take into account the different yet related aspects of teaching practices: context, intention, resources used, arising questions, and especially, behaviours and attitudes. It also underscores practices selected by the group as requiring deeper examination in step 2.

2. Search for the renewal of practices

In this way, within the practices shared and found problematic, the participants choose those which they wish to examine further and possibly improve. To do this, a new meeting is organized. During this meeting, in order to describe in depth and in detail the complexity of practices examined, simulation and role-playing activities are proposed. To this end and in accordance with (Zeiliger & Esnault, 2007) suggestions, a better awareness of tacit knowledge is elicited. During these activities, participants put into practice behaviours and attitudes, while becoming better aware. A variety of resources are consulted in the search for further ways to renew these practices: theories, case studies, descriptions of other practices. It is in this step that the reuse of shared practices in other communities proves to be particularly useful. To facilitate the exchange of and debate on newfound ways, another service, CoPe_it!, is used. This service gives debating participants the means to present their ideas and references in the form of a diagram. At the end of the session, a second template is used. This template captures the situation under analysis as described by a participant. The method used to delve further into the question being analysed is also described. The template rounds off by taking note of the various suggestions proposed by each participant.

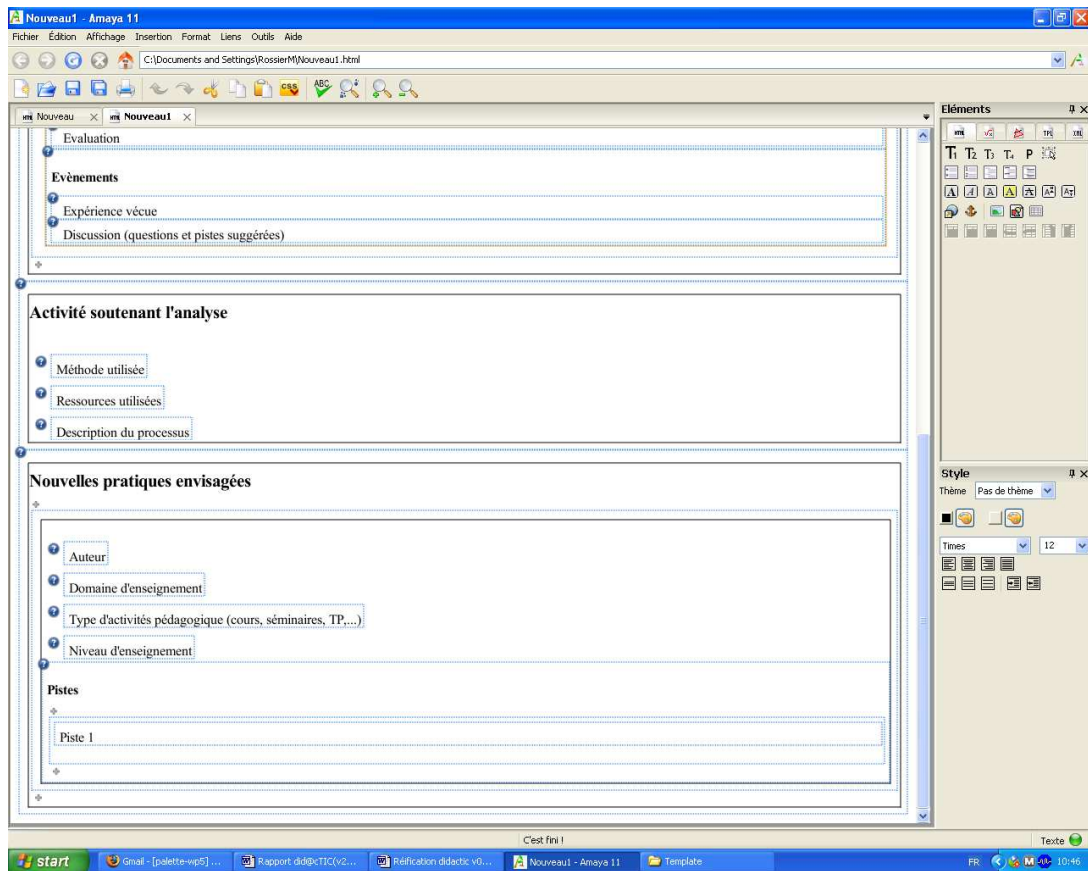


Figure 8 – A screen capture of the analysis template

3. Experimenting with new practices

In this step, participants are invited to introduce suggestions for change made in the previous step into their own practice. It involves consciously experimenting with change in teaching practice. We have seen that it is in the act that awareness of a practice is heightened. To partially explain these comings into awareness, participants are invited to keep a journal and to share it with members of the community. Again, a PALETTE service is used: SweetWiki, a semantic wiki.



Figure 9 – A logbook using SweetWiki

4. Describing renewed practices

Next, based on the collective analysis of the journals, the reification of the renewed practice is elaborated and modified through the use of a second template in Amaya. The content of the description is altered, enriched. The template itself may even be modified using DocReuse. This step takes the dynamic nature of practices into account. It reveals their evolution.

Following the previous description of the Did@cTIC scenario, we present a detailed analysis of the use of the services at the first two levels.

Tools to support reification

Two complementary services orchestrate the reification process. The Amaya software allows the editing and use of the note-taking template as well as the editing of the content using the template. The DocReuse software can be used to extract information from the template, to modify its structure or to structure previously unstructured documents.

After a presentation of templates produced with Amaya, we will look at their possible uses with DocReuse. The templates are presented as forms with fields and sub-fields under which we find text input areas. Their structure corresponds to that of the structured document that may be generated using the template. They have been designed to be used exclusively to capture participants' remarks about their true-life practical experience and the analysis of their practices. Rather than taking the entire meeting into account, they aim to supply all the information desired on the topic of the teaching practice in question.

The first template entitled "Choix des thématiques" (Choice of topics) should, during the course of "conveying practice"-type meetings, permit the recording of the representation of an experienced problematic pedagogical situation. Topics emerging from these situations will be the subject of ulterior

analyses. The second template entitled *Analyse des pratiques* (Analysis of practices) should, during the course of “analysis of practice”-type meetings, permit, in a structured manner, the description of shared teaching practices and the various points of view on a chosen topic. It should also permit the recording of new ideas and new ways for improving teaching practices.

7.1.3 Design and testing of the note-taking templates

Between October 2007 and July 2008, a collaboration between software developers and members from the team of moderators of the Did@cTIC community led to the development of three versions of the Choice of topics template and four versions of the Analysis of practices template. Data on their use during this period was collected through direct observation of the use of the tools recorded on video, documentary analysis and interviews with the two moderators and the community mediator. The first results are summarized in the text that follows.

The template contents

During use, the first versions of the templates proved to be not detailed enough. Testing led to the elaboration of a second version of both types of templates. These were characterized by a more analytical and more systematic approach, anchored in theory related to teaching practices. In light of the aim to reuse descriptions and analyses produced in meetings, this choice is justified. Users of the database would be able to search, find and retrieve information by referring to a familiar conceptual or theoretical framework.

Nonetheless, the pursuit of testing led community moderators to propose the development of a third version of each template with the intent to improve their analytical content. The fields chosen to describe the elements of the template are easily understandable by the person responsible for taking notes during the face-to-face meeting, making the template more functional for the person using it, whose work is not hindered by fields that are difficult to understand. Note-taking is facilitated by being more intuitive.

From the experience of designing templates a new expectation emerged from moderators: the possibility of autonomously producing their own template. This would actually permit the creation of a template as soon as seems necessary without having to turn to developers. The role of developers was higher up, in providing flexibility and autonomy in the creation and use of structured documents. Thus Amaya developers have enriched their software by giving users the possibility to build their own customized templates.

In other areas, discussions with developers allowed for a better consideration of moderators' expectations, distinguishing the need to autonomously create templates from that of being able to modify an existing one. The issue, in this case, is to be able to adapt a template to evolving needs while maintaining the option of utilizing structured documents produced with the first version of the template. The “Template-driven evolution” module of DocReuse is precisely aimed at this goal.

Due to various constraints, the “Template-driven evolution” module has up until now, not often been used. The development of the module began late as the need for it emerged within the CoP during the course of the project. For the CoP, this also presumes that a first version of the template has been produced and used and did not wholly satisfy. To conclude, this module is designed to reply to the occasional needs for changes, so as such, it has not been regularly or systematically used.

Due to this course of development within the Did@cTIC CoP, DocReuse and Template-driven evolution were only recently tested. The first of these tests showed that the basic functions (merge, split, addition of an element...) are easy to use. However, if changes in the template structure are significant, the module becomes more difficult to use. Currently, exchanges between the community's moderators and developers help to find bugs and complement the development of the functionalities and interface.

The developers of DocReuse also produced a “Template-driven structuring” module that allows the structuring of unstructured documents. Through this module notes produced during the implementation of the Did@cTIC scenario can be added to the database of structured documents. This module was used to create an initial database of structured documents for the CoP. The module is easy to use but still has some bugs that need to be worked out. To help users find text they have submitted in a template, the text is underlined in green. The system, however, remains unreliable. Because of this, users cannot rely on this functionality. Another limitation arises from the fact that the “Template-driven structuring” module only supports HTML documents. In the community’s practice, Microsoft Word was used to take notes. Several steps must be taken before the document can be imported into DocReuse and the structuring of the document results in a total loss of any existing formatting. In some instances this is not much of a problem (font, font-weight...), but when paragraphs, tables and line spacing are not respected, the document’s legibility is compromised. After being structured, the text must then be reworked to assure an acceptable quality. This step is heavily time-consuming.

Ergonomics of the note-taking activity

Note-taking during work meetings is done by recording, by hand or with the aid of a text editor, the comments and remarks made by participants according to a set agenda. The notes reproduce the evolution of exchanges that take place. The challenge in this activity is to follow the flow of the discourse and to, as accurately as possible, record participants’ comments. The main focus is not to organize or structure the ideas uttered. At the end of the meeting the notes are reviewed so as to eliminate what is superfluous, summarize and organize the ideas and format the text to obtain a document that, without reproducing ideas verbatim, retains their meaning. The proceedings serve as a recollection. With the meeting template used for the Did@cTIC community meetings, it is different as much for this purpose as for introducing the note-taking technique.

The structure of the template corresponds to the one used by participants and moderators during verbal exchanges in meetings. The note-taker is mainly concerned with recording as accurately as possible relevant ideas put forth by participants and placing them in the appropriate fields within the template. The note-taker is not, however, concerned with formatting as this is determined by the template. Still, note-taking is currently made difficult by technical constraints related to the use of the templates in Amaya.

Animating meetings

The use of templates has had positive effects, notably for moderators in the preparation of meetings, their interventions during meetings, the quality of descriptions and analyses obtained and their use. The moderators refer to the templates’ structure to frame exchanges, direct and bring participants to clarify the ideas formulated and to take their thinking further. The descriptions of pedagogical situations given by participants are not rigorously submitted to the template structure, though the structure is used to inspire and guide the animation which from then on becomes more systematic. In this way we obtain rich and grounded meeting proceedings that can be built upon from meeting to meeting by moderators and participants so as to move forward with work that has gained in systemization, depth and exhaustiveness, and quality management. These improvements are also related to the fact that the goal of note-taking during meetings is currently clearly and explicitly aimed at the reification of practices.

Teachers’ point of view

Interviews conducted allowed nine teachers from the Did@cTIC community to express their point of view on the process of reification proposed. On the whole it was deemed a positive experience. According to them, conveying practices holds four virtues. The exercise is reassuring because they become aware of sharing similar problems. This helps them to foresee certain problems or to be better prepared. It is a means of discovering new “ways of doing” and reflecting upon their practice. Teachers regarded the notes as accurate. Half of the teachers reused certain processes and were able to benefit from the experience of others. Almost a third said they fundamentally changed their teaching practice as a result of their participation in the community. All were convinced that conveying and

sharing their practices is productive. Most, however, believe that reification and reuse could be improved by involving groups that are more homogenous in their disciplinary domains of interest so as to facilitate the exchange of common and significant problems. Lastly, they think that the reuse of description or practices can be improved through the use of key words in the logs from discussions.

7.1.4 Future possibilities

The hypothesis shared by the team of moderators of the Did@cTIC community and developers is the following: besides considerable improvement of the quality of the work process and its result, the use of the templates for note-taking increases efficiency and saves time. We are looking to minimize the time needed following a meeting, to rework, the contents of the notes taken by formatting them within the structured documents. The work done after the meeting should be limited to validating the content of the templates to assure they conform to the structure before generating a structured document that will be added to the database. Until now, testing using the templates has not allowed us to verify this hypothesis. Several difficulties persist in spite of the evolution of the templates, the improvements in animating meetings and the satisfaction of the members of the community.

Fundamentally, it seems part of the problem resides in the gap between the oral and the written which are different systems of expression with different codes. The note-taking activity is confronted with a contradiction: it must capture ideas that are orally expressed and translate them using a code proper to written documents. A telescoping of steps necessary to go from oral coding to written coding ensues. In so doing, the proceedings lose some in authenticity by trying to treat narrations of practice objectively. Perhaps there are intermediary steps that can be introduced to facilitate the passage from the oral to the written and to preserve the subjective dimension of the personal experience that gives meaning to reification. A possible solution to explore could be to resort to a “dialogue document” as conceived by (Ueda, 1998).

The dialogue document

Knowledge related to exchange processes or conversations are rarely explained in documents for three reasons: firstly, the role of an “ordinary” document is generally to describe the outcome of the conversation; secondly, the document answers the need to better represent the rationale of the conversation process; and thirdly, the high cost of rendering a conversation understandable to readers. Yet in some cases, the knowledge used and engendered by the conversation process itself can be as important as the outcome.

The goal of a “dialogue document” is different to that of an ordinary document that is rationalized, interpreted and structured. It fills in the gaps by making knowledge about the creative conversation process accessible. It permits one to make explicit and use knowledge that is presented in the process of intellectual activity. To do this, the dialog document proposes an edited version of transcripts of conversations that readers often find difficult to read when rendered in their unedited versions. The most common dialogue documents are interviews published in magazines. These documents include supplementary information to communicate content derived from non-verbal cues, to make links, to give context, etc.

Due to the cost associated with editing conversation, the conversations covered by dialog documents are creative conversations involving the exchange and creation of ideas, decision-making and problem resolution. They are the conversations during which knowledge is conveyed through the conversation process itself. They are also the conversations that are supported by written synchronous communication tools.

In short, the dialog document draws upon a methodology that allows readers to capture the meaning of tacit knowledge underlying the conversation by allowing them to have the imaginary experience of witnessing the conversation. This type of document relies on the readers’ active formulation of the experience.

In the case of the Did@cTIC community, the dialogue document approach may be explored as a way to rethink the act of reification.

- Proceedings do not constitute definitive documents. Such documents are those that take work done into account, that are reused from one meeting to another to move thinking forward and that serve, at the end of the process, to store descriptions of practices in the form of structured documents.
- All proceedings from meetings do not lend themselves to becoming structured documents. Whether the note-taking template in its current form is the best tool for rendering an account of exchanges must be questioned: the outcome as well as the process.
- Would a dialog document that renders the outcome as well as the process explicit as an intermediary document be useful?
- Another software offered by PALETTE, Limsee3, could give access to other modes of conveying practices using video.

We end by noting that other services are occasionally used by the Did@cTIC community to enrich the methods used to animate the CoP. They are CoPe_it! described earlier and LimSee3 which facilitates the individual annotation of video-taped teaching sequences before opening them to debate during a CoP face-to-face meeting. The latter service has not yet been tested with the Did@cTIC CoP. Certain aspects of LimSee3 must first be further developed in response to the needs of the Did@cTIC CoP.

The members of the CoP keep a journal to render what within the CoP is of interest to them. As of autumn 2008, this will be done using SweetWiki so that each member's perceptions can be shared with other CoP members.

The collection of services tends to improve reification by increasing members' involvement, facilitating the process of making their practices explicit and leading to the confrontation of differing points of view.

7.2 ePrep

7.2.1 Description of the trial with the CoP (activities, timeline, services and actors implied)

In the ePrep CoP, the trial took place around the creation of 2 courses: one of History, and one of Physics. The main activity concerned here is sharable and reusable production of pedagogical resources. This activity takes part to the projects realized in the framework of the CoP (Wikiprépas, French-speaking platform, pedagogical innovation, international cooperation). Through these different projects, the members of the ePrep CoP who are CPGE teachers have to create educational contents conformed to Web standards, that will be shared within the CoP. In this way, this lead the members to reuse some pedagogical resources created by other members, it is a real collaborative way of working taking place.

The trials, organized around the creation of the 2 courses with Amaya and LimSee3, occurred through different steps:

- Discussions between CoP members about services proposed in PALETTE in a forum from February to June 2007;
- Presentation of the PALETTE services during 3 face-to-face meetings (June and November 2007, May 2008);
- Appropriation of the services by the CoP members through specific design-in-use face-to-face meetings (October 2007, January and March 2008) and mails exchanged between users and developers.

Concerning the initiation and familiarization processes, all the CoP members were involved, but two members were more specifically implied in the courses creation: Jean-Marc Wolff and Nathalie Van de Wiele. Jean-Marc Wolff is a CPGE history professor, he took part in the trial with the conception of a history course with LimSee3, and Nathalie Van de Wiele, former CPGE physics teacher, realized a physics course with Amaya. These two members have specific role in the CoP: Jean-Marc is the thematic referent for the pedagogical innovation project, and Nathalie is the CoP coordinator.

Given the fact that users were few to use services (two members), a close relationship could be established between the users and the developers.

7.2.2 Brief description of the methodology for the observation and analysis of the trials

The mediator of ePrep who is also the coordinator and a member of this CoP played several roles in the trials. She organized the trials for the CoP, and made reports, so she observed and analysed what happens during the trials. She also intervened as a user, and in this case it was the developer who observed her reactions. So concretely, reports on the different trainings and meetings have been made by the CoP coordinator.

Table 1 – Research questions, hypothesis and method (ePrep)

| Research questions and hypothesis | Method of data collection |
|---|--|
| <p>Question 1: How the use of PALETTE services, through the implementation of the PALETTE scenario for the ePrep CoP, have induced important changes in the individual professional practices of CPGE teachers members of the ePrep CoP: how did the use of PALETTE services lead the ePrep CoP members to pedagogical innovation? (How did CoP members adapt their teaching activities while using the PALETTE services and how did they influence the design of the services to fit their use ?)</p> <p>Hyp.: As CPGE teachers prepare their students to difficult competitive exams, before PALETTE, pedagogical innovation was not in the “CPGE culture”.</p> | <ul style="list-style-type: none"> • Reading of the exchanges in the forum PALETTE dedicated to the CoP ePrep for the design-in-use phase • Observation of the trials organised for the CoP for the initiation/familiarisation phase (elements of the observation are included in the on-line reports) • Studying of specific on-line elements on the ePrep website (Help on PALETTE and non PALETTE tools, Vade-mecum, ePrep CoP News...) • Studying of on-line elements on the SwikiPalette added by the CoP mediator • Studying of the mails exchanged between CoP members and PALETTE developers • Interview of the thematic referent of the pedagogical innovation project of the CoP, author of the history course • Interview of the CoP coordinator, author of the physics course |
| <p>Question 2: How the use of PALETTE services, through the implementation of the PALETTE scenario for the ePrep CoP, have induced important changes in the collective practices of CPGE teachers members of the ePrep CoP: how did the use of PALETTE services, combined to the consciousness of being a member of a Community of practice, lead CoP members to switch from “non sharable practices” to “sharable practices”? (from an individual versus a collective appropriation/negotiation of PALETTE services)</p> <p>Hyp. 1: As CPGE teachers prepare their students to difficult competitive exams, before PALETTE "sharable practices" were not in the "CPGE culture".</p> <p>Hyp. 2: Before PALETTE, ePrep CoP members had no tools for sharable and reusable document production.</p> | <ul style="list-style-type: none"> • Reading of the exchanges in the forum PALETTE dedicated to the CoP ePrep for the design-in-use phase • Observation of the trials organised for the CoP for the initiation/familiarisation phase (elements of the observation are included in the on-line reports) • Studying of specific on-line elements on the ePrep website (Help on PALETTE and non PALETTE tools, Vade-mecum, ePrep CoP News...) • Studying of on-line elements on the SwikiPalette added by the CoP mediator • Studying of the mails exchanged between CoP members and PALETTE developers • Interview of the thematic referent of the pedagogical innovation project of the CoP, author of the history course • Interview of the CoP coordinator, author of the physics course |

7.2.3 What happened in the trial concerning the use and appropriation of the services?

Question 1: How the use of PALETTE services, through the implementation of the PALETTE scenario for the ePrep CoP, have induced important changes in the individual professional practices of CPGE teachers members of the ePrep CoP: how did the use of PALETTE services led the ePrep CoP members to pedagogical innovation? (How did CoP members adapt their teaching activities while using the PALETTE services and how did they influence the design of the services to fit their use?). Indeed, as CPGE teachers prepare their students to difficult competitive exams, before PALETTE, pedagogical innovation was not in the “CPGE culture”.

The appropriation of the services was performed in a first time through the different presentations made by the developers, and some vade-mecum was written to support users in the use of the different services.

It should be noted that the instrumentation and the instrumentalization was conducted by the high motivation of the users who are very involved in their CoP. Thanks to these members, the services have been introduced in the CoP and are currently used by some members.

It is important to remind that the CoP is young and it is difficult to impose new tools that can disturb the habits and also discourage the members.

At this stage in the project, the ePrep CoP begins to use more and more services, including more functionalities of these services. For instance, the CoP member who uses LimSee3 thought of new uses of this service for his practice. As he is directly in contact with the developers, it is simple for him to discuss and propose new ideas of uses, according to their practice, their vision of the services, and driven by the needs in the pedagogical resources of the members.

The services chosen were used to respond to the need of creating and sharing pedagogical resources, need expressed in the generic scenario of the team 1 that relates to the creation of a course from documents available in the platform of the CoP and sharing of this course with the CoP members.

As explained above, the services were used individually by two CoP members, which led to a closed participatory design of the services. Indeed some face-to-face meetings were organized between the users and developers, in order to exchange about the practice of the users and on the improvement and possible uses of the services.

The main problems encountered during the use of the services concern the ergonomics of the services and some specific functionality, but also the fact that users have habits and practices that can influence the user in the appropriation of the service.

Question 2: How the use of PALETTE services, through the implementation of the PALETTE scenario for the ePrep CoP, have induced important changes in the collective practices of CPGE teachers members of the ePrep CoP: how did the use of PALETTE services, combined to the consciousness of being a member of a CoP, lead CoP members to switch from “non sharable practices” to “sharable practices”? (from an individual versus a collective appropriation/negotiation of PALETTE services). The situation before to get involved in PALETTE is that, as CPGE teachers prepare their students to difficult competitive exams, “sharable practices” were not in the “CPGE culture”, and ePrep CoP members had no tools for sharable and reusable document production.

By using the services, the members thought of new practice, in the sense of sharing and reusing pedagogical resources. As the project is not ended, the developers and users continue to exchange on the uses and possible improvements of the services. The PDM is still in progress in the ePrep CoP, between the members and the developers, and the use of the services and their integration in the CoP is only at the beginning.

The services used in the ePrep CoP will lead to a more collaborative work, and to the evolution of mentalities in the domain of French "grandes écoles", that are actually non oriented to collaborative work and sharing of resources. The main aim is to conduct the actual individual practice to a collective one, and this could be conducted by the more and more intensive use and implication most important of the services.

The services integration in the ePrep CoP had a positive impact on the CoP functioning. According to Jean-Marc Wolff's opinion, "if LimSee3, a not yet finalised tool, is not able to impact the actual professional practice of the teacher, it induces a reflection on this future practice: a course prepared with LimSee3 will allow the teacher to economise time in term of magisterial courses, winning time for exercises".

Moreover Jean-Marc Wolff has noticed two points allowing replacing efficiently magisterial courses by courses made with LimSee3: a good yield of the tool to economize time, and a good interactivity offered by the tool.

Nathalie says that, in the future, when the use of Amaya is generalised inside the ePrep CoP, with a lot of Amaya courses uploaded on the ePrep platform, it will be possible to analyse the impacts of the chain of service Amaya/ePrep platform on the activity of the whole CoP in term of sharable and reusable document production. So, even if we focus today on an individual practice, the transcription of a Physics course in XHTML/MathML, let us keep in mind that in the future, this type of individual practice will change the whole CoP practice, leading members to switch from "non sharable practices" to "sharable practices". She also says that a tool such as Amaya is able to truly change the pragmatic and collaborative aspects of the mediation inside the ePrep CoP: pragmatic, since the object of the activity (the course) is transformed by the instrument: without Amaya, the course is only performed for the students in the classroom, while with Amaya, the course is uploaded on the platform and can be shared and reused openly with a large community thanks to a "winning duo" (the fact that Amaya is based on standards and the facts that the contents on the platform are under a Creative Commons license); and collaborative, since with Amaya it is possible to collaboratively build a course.

Through the interviews conducted with the CoP members that used the services, we have seen that the services integrated within the CoP bring more interactivity between the members, and the awareness of the individual practice. Moreover the services reduce the preparation time of courses, and allow the reuse of the pedagogical resources previously created. They also want to create collaboratively a common dictionary, which is actually in progress. The services by their functionalities allowed members to discover new ways of doing, and influence their practice.

7.2.4 Report to the CoP

It is important to replace the context of the CoP here. Indeed the ePrep CoP is a young CoP that is growing and developing its activity and functioning.

The different activities occurring in the CoP are evolving and can be supported and oriented by the services involved in the CoP.

At this stage in the project, the CoP is only beginning the introduction of new services and the impact of these services is positive. Obviously the CoP will evolve, and the appropriation of these services will be benefit to the CoP and its development. Regarding the first question of research (how far is the individual professional practice affected by the use of PALETTE services?), it seems that the CoP members situate in a first stage of change. They began to appropriate the tools for preparing their course contents.

In that case, the services have not reached their maximal efficiency in the CoP, but they began to lead the CoP to change its practice. Obviously the changes occurring cannot be possible without the involvement and motivation of the members.

The process actually in progress in the CoP to incorporate new services is entirely appropriated to the modus operandi of ePrep.

Indeed the first step of the introduction of the services in the CoP is to show a concrete application of the services, and their impact in the activity. This has been made with two members and the creation of two different courses.

The fact that there are few users for the first trials allows having close contact with the developers, and consequently permits greater appropriation of the tools by the members.

The next step is to extend the use of the services to the ePrep CoP members, and to introduce collaborative practice and sharing in the members mentalities. Again, regarding the second question of research (how far does a culture of sharing appear within the CoP?), the CoP could be situated in a first stage.

It is clear that it will take time to change, but thanks to the involvement and the motivation of the CoP coordinator, it will be a success.

7.2.5 Recommendations

It is important to continue to have a common platform that enables the availability of all resources used and created by CoP members.

The wiki is also a key service that induces collaborative work and exchange of practice. It will be a major step to create templates for courses and to share them in the CoP to show the gain of time it will induce.

Presentations of the results obtained with the different services to the members will also be an essential point to demonstrate the efficiency of the services, and their impact in the ePrep CoP activities.

The participatory design method has been a success with the ePrep CoP, and should continue in this way for the future. Without a doubt, it brings the feeling to users to be listened and understood by the developers, and not to be apart of the design of the tools. The remarks and needs of users were taken into account by the developers that installed a trust climate and listening in the both sides.

7.3 CoPe-L

7.3.1 Description of CoPe-L: context and needs

This community started in 2002 in the CRP Henri Tudor (CRP HT). At this time, the CRP HT had ten collaborators that were working on different e-learning projects. They began to share information among them during informal discussions. They exchanged their information (documents, Web sites addresses, etc.) they were using in their projects (methods and documents) and used the internal server to store these resources. They were identified as an “e-learning group” within CRP HT. In 2004, they defined, together, new e-learning projects. Members were e learning projects managers and members of project teams. They were social sciences specialists (having masters in sociology, HR, educational sciences, psychologist) and developers.

In 2005, CRP HT began a European Social Fund project, TRANS-eFORM (Transition vers la e-formation) in which the community became “official”. The creation of the CoP, called CoPe-L for CoPe-Learning, and its animation was one of the project’s deliverable. Face-to-face meetings were organised to exchanges e-learning projects practices: methods, problems to solve, experiences concerning experimentations, information concerning e-learning conferences, meetings, information found on e-learning Web sites, etc. The practice shared is about “e-learning” domain in a wide sense. The language used is French.

In 2006, trainers working in the TRANS-eFORM projects and members of the training department also joined the CoP. The CRP HT was offering e-learning trainings and the training department wanted to understand what e learning was and how to promote this kind of training. The CoP was composed of 30 people. One third was non CRP HT members.

In 2006, external people, representatives of private and public organization were invited to do presentations concerning their e-learning activities. These people were working in HR services companies, IT services companies, Ministry of Education, trainings organizations, training department of banks, HR departments of industry. Members of services companies, trainings companies and the Ministry of Education were interested in becoming members. Luxembourg representatives of private and public organizations have joined the CoP mid-2006.

At that time, a Yahoo group was created for the CoP to allow non CRP HT members to have access to the documents exchanged and presented during meetings. It was also created to allow people to exchange on-line. CoP animators to store presentations of meetings mainly used the Yahoo Group. The forum of this Group was sometimes used to exchange information concerning e-learning events: conferences mainly.

The TRANS-eFORM project ended in December 2007. With the end of the project, trainers who were no more working in e-learning projects left the CoP. 15 people were participating to the CoP activities. As we were more exchanging with non-CRP HT members, we thought it was interesting to join the PALETTE project to have tool to sustain the CoP on-line activities and to ensure its development. The proposition of joining the PALETTE project was proposed to members on 4th December 2007. They all agreed to join it.

Beginning of January 2008, the PALETTE project objectives, methodology and services developed were presented to members. A focus group of 5 people was created after this presentation. It was composed of the 2 animators, one member of the PALETTE project who is also member of the CoP and 2 CRP HT members of the CoP. Non CRP HT members had no time to spend to the selection and implementation of tools within the CoP.

The first activity of this focus group was: to begin a reflection about the CoP needs in order to select appropriate tools. February 1st 2008, the focus group began its reflection on the CoP needs. At that time, there were only face-to-face meetings organized. The members exchanged during these meetings about their practices. The resources used by members in their practices were not stored on a shared repository. Only oral information was exchanged during these meetings. And only internal members of the CoP could access the information stored on the CRP Henri Tudor server. Focus group members expressed the need to allow CoPe-L members to exchange online, and not only during meetings. They wanted to allow members to increase their communication and not to limit it to face-to-face meetings. They also pointed the need to allow people to access a common repository accessible via the Web, a repository of resources open to internal and external members. The need of the CoP was mainly concerning the generic “Reification” scenario, and a specific activity to observe (Indexing and classifying documents produced and shared within the CoP).

A more detailed presentation of the different tools, which could be used to answer CoP needs, was organized for focus group members mid-February 2008. A first list of functionalities was identified end of February: resources management, members list, news, agenda, communication and discussions. Three tools were identified: a Web portal, BayFac and a blog. CoPe_it! was also a tool that could be chosen to support communication among members concerning a given topic. But due to difficulties to understand this tool during a short test in February, due to the fact that we had to have the support of CTI to deploy this tool, and due to the fact that this support could not be sure, we decided to abandon this idea.

The generic scenario chosen for CoPe-L was about reification. The activity to observe during the trials of the tools was: “Indexing and classifying documents produced and shared within the CoP”. The

service used for this trial was BayFac. BayFac service aims at providing a mean to semi-automatically index textual documents (documents, emails, forum posts, wiki pages, blog posts, etc.) regarding a vector of concepts relevant to a CoP (ontology of the CoP), hence allowing classification according to multiple facets. The benefits for the users are to have incoming documents automatically classified according to known useful categories, and to be able to search information in a more efficient manner thanks to this indexation. This tool allows a CoP to class and store different kind of information and to retrieve these easily.

In March-April 2008, 3 members of the focus group began to work on the ontology of the CoPe-L. All the focus group members have validated the ontology. 22 May 2008, the ontology and the tools chosen were presented to CoPe-L members during a face-to-face meeting. 27 May 2008, the ontology was proposed to CoPe-L members for validation via the blog. In April-May 2008, the CoP mediator, also member of the focus group has work on the preparation of an instantiated scenario posted on the “swikipalette”. This scenario was corrected by focus group members and by the service Mediator in charge of BayFac. In April-May 2008, focus group members prepared a BayFac user guide. In June 2008, BayFac was tested within the focus group. A wiki was used by the BayFac developers to list the improvements and to identify the bugs of BayFac. An Excel document was also created to allow focus group members to inform developers of ideas of improvements and of bugs identification during the test of the tool. This document was posted on the BSCW, server of the PALETTE project, to inform other project partners to use the same document to inform BayFac developers of potential bugs and improvements. End of July 2008. The tool was ready to be tested by all the Cope-L members.

7.3.2 Description of the trial

The trial was based on a scenario, posted on the “swikipalette” (see also D.IMP.08).

Instantiated scenario:

Valérie is a CoP member. She would like to find resources concerning e-learning surveys in Luxembourg. She opens the CoP Web Portal. She opens the awareness widget (CAKB) but find nothing on it, no CoP member having recently added resources concerning this topic. She opens the CroSSE widget (Cross service search engine = global search engine) and types her keyword. She sees that one post exists on the blog of the CoP and that 3 resources exist on BayFac: 2 documents and a Web site. She reads the description Jessica has done on the resources she has added on BayFac. She decides then to open one of the two documents and the Web site. After having read the document and consulted the Web site, she thinks the facets, which were used to describe the resources, are well chosen for the Web site but not for the document. As she has no right (technically, it is possible, it is more a general agreement between members) to amend the facets she posts a comment in the “resource description space” and she contacts the service administrator to explain the modifications she would like to add. The BayFac administrator, Sandrine, contacts the person who has added the document (that is found via the CAKB - Cross Awareness Knowledge Base) and after having had an agreement she modifies the facets. Once the facets have been modified, a reference to this modification appears on the awareness widget (CAKB). Alexandre, who is also interested in e-learning surveys sees on the awareness widget that a document exists on BayFac. He clicks on the link and read the survey.

As mentioned here above, the trial started in January 2008, when the focus group was created. The introduction of BayFac within CoPe-L didn't start in August 2008, date of the access of the tool by all CoP members. It started in January 2008, when the CoP decided to use PALETTE tools to develop its activities and answer its needs. Following this, we can define three periods of the trial:

1. The first one began with the needs identification in January 2008 and ended with the final version of the CoP ontology, the redaction of the BayFac user guide and the redaction of the charter concerning the IPR issues.
2. The second phase began with the test of BayFac by focus group members, in June 2008.
3. The third phase began with the trial of BayFac by all CoPe-L's members, mid-August 2008.

During the first phase, the focus group defined the needs of the CoP and chose the different tools, which could help the CoP to answer these needs. The PALETTE Web Portal, BayFac and the Cross Awareness Knowledge Base (CAKB) were chosen. The focus group members decided also to create a blog and to add an agenda and a contact list widget to the Web Portal. The need of the CoP was mainly concerning the generic "Reification" scenario, and a specific activity to observe (Indexing and classifying documents produced and shared within the CoP). The trial did not concern the test of the Web Portal or the test of the CAKB, nor the use of the blog, as it is not a tool developed within the project.

During the first and the second phase, the trial was conducted with the focus group members. A validation was asked to CoPe-L members concerning the ontology. During the third phase, the trial was done with all the CoPe-L members. No face-to-face CoPe-L meetings were held from June to October 2008 due to holidays and to the preparation of BayFac. Ten members out of twenty have used BayFac, and two non-CRP HT members have used it.

7.3.3 Description of the methodology for the observation and analysis of the trial(s)

The central questions chosen were the following:

1. How did sharing of resources evolve through the use of BayFac?
2. Has BayFac influenced the CoP organisation and involvement of members?

The first question is linked to the need expressed in January 2008. The CoP decided to use BayFac in order to improve the exchange of resources between members. The second question was chosen to identify the influence of the choice of the tool and the tool itself on the organisation of the CoP and on the way it could influence the members' behaviour.

The first question is more linked to the instrumentation process, to the collective appropriation of a tool by the CoP: "How do CoPs collaboratively negotiate the use (and the meaning regarding their activities) of the PALETTE services? How has the need for use been expressed, negotiated? By whom? Through their discussions, do they refer to possible scenarios? What decisions are made? Etc."

The second question is more linked to the mediation process. It rather concerns questions concerning the changes while using the PALETTE services in terms of new knowledge acquired by the members and the modification of members' behaviours, attitudes and beliefs with the knowledge exchanged and with other CoP members. The focus group members and especially the CoP animators wanted also to evaluate the impact of BayFac on the CoP organization and development.

The hypotheses were the following:

1. All CoPe-L members exchange their resources (document, links, etc.) while using BayFac.
2. Accessing to resources on BayFac encourages members to communicate and exchange, not only during face-to-face meetings.
3. Allow CoPe-L members to access resources and exchange online influence:
 - The way the CoP is organized,
 - The involvement of members.

The potential identified added value of the use of the PALETTE tools was the development of the members' involvement and the engagement of new members.

7.3.4 Data collection

Data were collected from interviews, questionnaires, narratives, e-mails and focus group meeting reports. The data collection started in January 2008. We have determined three moments of data collection:

1. Needs identification phase, choice of tools and ontology definition. This phase began in January 2008. The data collection was done with the collection of meeting reports and e-mails. This collection was done by the CoP mediator.
2. First BayFac test with the focus group members. This phase took place in June and July 2008, with the focus group members only. The data collection was done with the collection of comments concerning the use of BayFac and its possible further developments, through an Excel doc. Collection of meeting reports and e-mails was also done.
3. Trial of BayFac with the CoPe-L members. This phase began at the end of July 2008. Observation of the use of BayFac by CoPe-L members was done through the Cross Awareness Knowledge Base, that gives the possibility to observe who has created, read, deleted or commented resources posted on BayFac. A questionnaire (see appendix 6, p. 149) was also sent to CoPe-L members who had used BayFac and semi-structured interviews were done with some members to have complementary information. Collection of meeting reports and e-mails was also done.

7.3.5 Data analysis

The data analysis was done based on the specific research questions specified here above. The meeting reports and e-mails were collected in a same document. This document was divided in two columns. In the first one, the data were copied. In the second column, remarks and comments were written based on tracks of answers founded in the data and based on the research questions. Answers to questionnaires were gathered together in one document. As for the meeting reports and e-mails analysis, answers have been arranged in two columns.

7.3.6 Description of what happened in the trial

In the table below, we have tried to collect some tracks illustrating the instrumental genesis process with examples of instrumentation and instrumentalization (with excerpts from data) and relevant facts that highlight the mediation role of the instruments (with excerpts from data).

Table 2 – Excerpts – elements of successes and problems encountered (CoPe-L)

| Instrumentation | How do CoPs collaboratively negotiate the use (and the meaning regarding their activities) of the PALETTE services |
|------------------------|--|
| Expression of needs | <p>Meeting of the focus group – 1 February 2008</p> <p><i>“Finalité de la réunion: Recensement brut des idées devant permettre d’identifier au mieux les besoins technologiques pour les échanges des membres de la CoPe – L”, Need for use of PALETTE tools negotiated between focus group members</i></p> <p>*****</p> <p>Expression of ideas by all focus group, composed of volunteers members. The needs were not expressed to be in conformity with a particular tool.</p> <p><i>“Est-ce que le format PPT est le meilleur moyen pour provoquer des réactions/échanges? Autre format possible mais qui demanderait quantité d’efforts et une grande participation: les cartes style Mind Manager (outil Copeit, c’est ça GVI?)”</i></p> <p>ABA – e-mail – Feb 2008</p> <p>*****</p> <p>Before testing the tools within the CoP, CoPe-L mediator has proposed to present the tools and to test these in order to identify the</p> |

| | |
|---|--|
| | <p>advantages and difficulties, and the way they answer the needs. Contacts were taken with service mediators to facilitate the appropriation.</p> <p><i>“Discussion autour de la possibilité d’utiliser CoPe-it. Objectif de la réunion : présenter CoPe-it aux membres du focus groupe.”</i> focus group meeting report – 12 Feb 2008</p> <p><i>“We’ve created a community “CoPe-learning” in CoPe-it!. We’ve some questions concerning the use of your tool. Could you please help us to solve these small problems?...”</i> SJA and GVI - e-mail – Feb 2008</p> <p>*****</p> <p>Engagement of focus group members in the preparation of the trial, at the end of the preparation phase (definition of needs, definition of the ontology and first test of BayFac within the focus group: - Difficulties with the developers. For some focus group members, it is difficult to propose new ideas of development. Developers seem to limit their work to the tool they have proposed. <i>“Info de SSA : difficulté avec les développeurs, chaque nouvelle idée de développement est reçue avec beaucoup de prudence. Impression que les développeurs, dès le début des discussions, avertissent fortement qu’ils ne pourront rien développer de plus que ce qui est actuellement prévu. Comment réagir face à cela ? Continuer à proposer des développements ou se contenter de ce qui existe ?”</i> focus group meeting report – 16 June 2008</p> <p>- Difficulties within the focus group <i>“Grosse discussion autour de la gestion de la base : différence de points de vue entre SSA, BME, SJA sur le fait de valider les ressources. Pour BME et SJA, crainte que s’il y a validation il y ait un désintérêt des membres. Pour eux, chacun est libre d’ajouter tout type de ressource, même s’il fait de la promo pour un produit. Pour SSA, la promo d’un produit est à faire sur le blog, BayFac ne sert pas à faire de la promo...”</i> focus group meeting report – 25 June 2008</p> |
| Need for tools “simple” to use | <p>Rejection of tools based on their ergonomics. Some tools were not user friendly.</p> <p><i>“Concernant CoPe-it : accord des membres pour ne pas l’utiliser, outil trop compliqué et pas assez user friendly”</i> focus group meeting report – 21 Feb 2008</p> |
| Preparation of trial – preparation of tools | <p>Preparation of the trial: during the definition of needs, first phase of the use of BayFac, the focus group members have worked on the “preparation” of the BayFac to facilitate its utilisation. They have worked on a user guide and on a validation workflow concerning the resources posted on this tool. This validation workflow has also led to the definition of a new role: administrator of BayFac</p> <p>Preparation of the trial and preparation of BayFac to facilitate its appropriation: <i>“Afin d’avoir une démo de BayFac parlante et réaliste, il faudrait qu’il y ait qqes documents rentrés dans la base.”</i> GVI – e-mail – Mar 2008</p> |

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| | <p><i>“preparation of Proposition ODJ de la réunion 24 avril 2008 [...] préparer l'article à mettre sur le blog (SSA, GVI, SJA) ; modéliser le circuit de validation des docs sur BayFac (BME, SJA, SSA) ; présenter le guide utilisateur BayFac (GVI)[...] pour chaque outil: les personnes responsables, qui fait quoi”</i></p> <p>focus group meeting report – 10 Apr 2008</p> <p><i>“Travailler sur un circuit de validation des ressources dans BayFac [...] (attention à ne pas freiner l'ajout de ressources)”</i></p> <p><i>“Guide utilisateur : comment indexer les documents, comment les rechercher”</i></p> <p>focus group meeting report - 21 April 2008</p> |
| Preparation of trial – organisation of feedbacks | <p><i>“GVI : il faudrait un contact CoPe-L (BME, l'avertir qu'il faut tracer les remontées dans un document) et Service mediators (GVI assurera le rôle de coordinatrice)</i></p> <p><i>Développeurs : une réunion par semaine sur les retours des cops et les développements à faire ou pas (en fonction des ressources et du temps)”</i></p> <p>focus group meeting report - 24 April 2008</p> <p>The objectives of the CoPe-L meeting – 22 May 2008 were: to present the developed ontology and to allow members to comment it and to propose ideas to improve it – comments posted on the CoPe-L's blog.</p> |
| Ontology definition | <p>Work on the ontology by focus group members. The development of the ontology has begun 21 Apr 2008. From the beginning of this ontology definition, it was proposed to ask for a validation by all CoP members. This was approved during a focus group meeting, 10 apr 2008).</p> <p><i>“L'ontologie doit être retravaillée, complétée et validée par l'ensemble des personnes du focus group [...] validation de l'ontologie par l'ensemble de la CoPe-L via le blog”</i></p> <p>SJA - e-mail – Apr 2008</p> <p>CoPe-L meeting in May 2008. Ontology presented. CoPs members have asked the aim of the ontology: necessity to understand why to define an ontology while using BayFac.</p> <p><i>“Commentaire 1 : Quelqu'un peut-il me rappeler la finalité de cette ontologie?”</i> PVA – comment posted on the blog – 30 may 2008</p> |
| Instrumentalization | <p>Evolution of BayFac through its use by a CoP and construction of new uses of services by CoPs members</p> |
| Development of BayFac | <p>CoPe-L face-to-face meeting- May 2007</p> <p>Members have given their ideas concerning the possible evolution, improvement of BayFac. Suggestions were posted on the CoPe-L Blog</p> <p>http://copel.tudor.lu/blog/post/2008/05/27/Retour-ontologie-BayFac-%3A-A-vos-marques</p> <p><i>“Développement de la recommandation d'une ressource -- je trouve, pour ma part, que c'est une bonne base de départ qui me semble tout à fait satisfaisante pour répondre à la plupart des besoins pour ce type d'application.”</i></p> <p>PEC – comment on the blog – 30 may 2008</p> |

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| | <p>*****</p> <p>During the second phase (BayFac test), focus group members have completed an Excel document based on their utilisation of BayFac. They have proposed suggestions of developments. This document was sent on the BSCW: https://bscw.ercim.org/bscw/bscw.cgi/495650</p> <p>*****</p> <p>Following the test of BayFac by the focus group members, and following the validation workflow define for the resources added in the tool, new development asked to the service mediator.</p> <p><i>“Demande supplémentaire : Donner de la visibilité aux statuts des documents par rapport au circuit de validation : Question devra être posée à l’équipe de développement, remplir tableau.”</i></p> <p>focus group meeting with service mediator – 2 June 2008</p> |
| Mediation | <p>Impact of BayFac on CoP members and CoP organisation and impact of the reflection about the use of PALETTE tools on CoPe-L organisation</p> |
| Impact on the engagement of CoP members | <p>1st February 2008: meeting with focus group members, first time in the CoP that members exchange about the functioning of the CoP. Previous reflections on the CoP were only made by the animators. This meeting has identified the need to optimize exchanges and resource exchanges between members and to continue the exchanges started during face-to-face meeting.</p> <p><i>“Même si je conçois que dans Communauté de Pratiques, il y a Pratique, n’est il pas envisageable de faire un peu plus référence au Théorique? [...] je trouverai intéressant de voir à quels courants, théories chacun se réfèrent ds sa pratique. Possibilité d’échanges via la création collégiale de cartes où chacun apporterait sa pierre (publications sur une théorie émergente, cas concret...)”</i></p> <p>ABA – e-mail – Feb 2008</p> <p><i>“En fait les points listés comprennent des éléments qui vont au-delà des besoins technologiques. [...] suggestion : ne faudrait –il pas prévoir des espaces de communication / d’échanges de pratiques / méthodes professionnelles différents ?”</i></p> <p>SSA – e-mail</p> <p>The preparation of the tool has asked a lot of time to focus group members. The members who are not members of the PALETTE project team have asked budget to cover the time they spent to work they do to implement the tool. BME – e-mail – 12 June 2008</p> <p>Engagement of focus group members in the preparation of the trial, and difficulties for some of them to accept the fact that developers will not implement all their ideas.</p> <p>Engagement of focus group members and organisation to find a way to define the priorities for the development of BayFac</p> <p><i>“Je pense qu’une petite réunion de mise au point serait pas mal à l’issue de cette phase de test, notamment pour expliquer plus en détail à l’équipe de dvplt certains pb qui ne sont pas évidents à décrire clairement , et surtout pour faire le point sur certaines priorités car</i></p> |

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| | <p><i>au final nous avons pas mal de points dans le tableau de suivi</i> SSA – e-mail – 18 June 2008</p> <p><i>“Nous ne pouvons pas vous envoyer au fur et à mesure les bugs à résoudre, méthodologiquement, cela ne sera pas efficace, nous avons besoin de prioriser la résolution des bugs que nous avons identifié.”</i> BME – e-mail – 19 June 2008</p> |
| Impact on the role definition within the CoP | <p>The use of BayFac and other tools has lead to the identification of experts and the definition of roles: “<i>Validation des ressources ajoutées et indexées par un "expert"</i>” focus group meeting report – 08 Feb 2008</p> <p>“<i>Perennité / fonctionnement de la CoP</i> - Définir et attribuer de manière formelle les différents rôles qui peuvent composer une CoPe-L pour impliquer davantage les membres de la CoPe - L.” SSA – e-mail - Feb 2008</p> <p>“<i>[...] la production de contenu pourrait être affectée à des personnes identifiées au sein de la cop, mise en place de rôles tels que : validation de document, rédaction de news, responsable de l’agenda...</i>” AVA – e-mail – 21 Feb 2008</p> |
| Impact on the organisation of the exchanges | <p>Use of BayFac has lead to a reflection on the resources posted on the tool. focus group members have worked on a validation workflow: “<i>modéliser le circuit de validation des docs sur BayFac (BME, SJA, SSA)</i>” focus group meeting – 10 Apr 2008</p> <p>Before the use of BayFac, documents were shared via a YahooGroup. No reflection was made concerning the intellectual property rights (IPR) issues concerning these documents. With the localisation of BayFac on a CRP HT server, the focus group members have started to think about IPR and about the responsibility of CRP HT. This reflection has begun 21 April 2008 during a focus group meeting.</p> <p>“<i>Travail de Mfa sur les mentions légales à ajouter sur BayFac concernant les droits de la propriété intellectuelle. [...] proposition de MFA est finalisée et acceptée par tous (GVI, JDL, BME --- SSA est en congé). Nous sommes partis vers une version light en responsabilisant tous les contributeurs.[...]. Le CRP en tant qu’hébergeur ne pourra être tenu pour responsable.</i>” Information concerning exchanges between focus group members</p> |
| Impact on the scope of the CoP | <p>June 2008: During the definition of the ontology, CoPe-L members have extended the scope of the CoP. The practice is not only about e-learning but also about KM, and collaborative learning in different kind of situation.</p> |
| Impact on the valorisation of the CoP and on its organisation | <p>The reflection on CoP needs has lead to a reflection on the identity of the CoP and its place within the hosted organisation. The need for use of PALETTE tools has lead to identification of needs for a better functioning of the CoP.</p> <p>During the needs expression phase, reflection on CoP organization and propositions made to communicate about the CoP activity</p> <p>“<i>Développement d’un argumentaire pour valoriser le développement et le positionnement de la CoPe - L au sein même du CRP Henri Tudor.</i>”</p> |

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| | <p>“Capitalisation des ressources documentaires (CoP need) pour constituer /enrichir une culture professionnelle commune à toute la CoP”</p> <p>SSA – e-mail – Feb 2008</p> <p>20 August 2008: Attempt to of institutionalise and make the coP “official” into the institution. CRP CoPe-L members have asked to their head of unit to integrate CoPe-L in the new organization of the CRP Henri Tudor – CITI department. From June 2008, the department is defining a new strategy for the KM and e-learning matters. CoPe-L members have asked to integrate the CoP as a service in this organization.</p> |
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7.3.7 Synthesis

Verification of hypothesis

Hypothesis 1: All CoPe-L members exchange their knowledge (document, links, etc.) while using BayFac.

After 15 days of experimentation, 4 members have posted 11 resources on BayFac. After one month, one additional member had posted 1 resource and one out of the 4 had posted another one. After 2.5 months of experimentation, only 5 members have posted 15 resources. Only one quarter of the CoPe-L members have utilized BayFac to exchange some resources. One half, 11 members, have read the resources posted. After 3 months of experimentation, we observed that CoPe-L members are not exchanging their resources via BayFac. But if they do it, we observe that these resources are read by one half of the CoPs members. Our first hypothesis is not verified.

Hypothesis 2: Accessing to resources on BayFac encourages members to communicate and exchange, not only during face-to-face meetings.

We haven’t observed any modification in the way people exchange. After having asked the external members (non-CRP members of the CoP), they haven’t had any contact with internal members, except with the moderator of the CoP. Even if we have observed 115 traces of resources read by 11 CoP members, members haven’t tried to contact the person who had added resources on BayFac.

No face-to-face meeting were organized between May 2008 and October 2008 and members haven’t had any “organized” opportunity to meet each other during the experimentation of the tool.

Hypothesis 3: Allow CoPe-L members to access resources and exchange online influence the way the CoP is organized and the involvement of members.

The use of BayFac hasn’t changed the organization of the CoP. It is not the use of the tool that has changed the organization. It is the preparation of the introduction of the tool that has had an influence.

Discussion of results

The introduction of tools occurred in a period of changes in the life of the CoP. It is impossible to argue that only tools have had an influence on the CoP. Only 3 CoPe-L internal members are still working on e-learning projects and they are working on the same projects. These e-learning projects will end in December 2008. These members are exchanging information only among them. They have no time to exchange with other ones. Five CoPe-L members have left the CRP Henri Tudor between April and August 2008 and are working for other companies. Only three external members are still active. But on those three, only two have used BayFac. The third one explained that she hadn’t enough time. But after further investigation, this person told she was no more motivated to participate to the CoP due to the fact that it is dying. She also told that she prefers to exchange her information with the moderator she knows well. Internal members do not communicate with external members. External members are only exchanging information with one of the CoPe-L moderator, the one who created the contacts with their companies.

In October 2008, a project definition has been sent by the CRP Henri Tudor to the FNR (Fonds nationale de la Recherche – Luxembourg) to continue to support the research concerning the development of this CoP in Luxembourg. But at the moment, CoPe-L seems to exist only through the use of BayFac. Beginning of November 2008, one of the moderators doesn't want to continue to animate the CoP due to the lack of involvement of its members. The other one wants to continue because of "the work done by the developers" (discussion report between moderators – November 4, 2008).

Answers to the central questions

How did sharing of resources evolve through the use of BayFac?

The introduction of BayFac hasn't had any influence on the amount of exchanged resources. The reason is maybe to find in the definition of the needs, which was done in January 2008. At that time, members wanted to exchange resources among all members, internal and external members. The need has maybe evolved between January and August 2008. Internal members working on e-learning projects do not have any contact with external ones. No face-to-face meeting has been organized. Only one moderator of the CoP has regular informal contact with external members. There is no feeling of need for internal members to exchange information with external ones.

Has BayFac influenced the CoP organisation and involvement of members?

If BayFac hasn't had an influence on the CoPe-L activity during the experimentation, we notice that the introduction of the tool has had an impact on the CoP organisation and involvement of members during the phases, that have preceded its utilisation.

In January 2008, a meeting with focus group members was organized. It was the first time in the CoP life that members exchanged about the functioning of the CoP. Previous reflections on the CoP were only made by the animators-moderators. This meeting has identified the need to optimize resource exchanges between members and to continue the exchanges started during face-to-face meeting. The need for use of PALETTE tools has lead to identification of needs for a better functioning of the CoP, e.g. identification of roles and definition of thematic groups within the CoP.

In February 2008, following the January meeting, focus group members have expressed the need to make the CoP official inside the CRP Henri Tudor as well as the roles within this CoP. In August 2008, CoPe-L members have asked to their head of unit to integrate CoPe-L in the new organization of the CRP Henri Tudor – CITI department. From June 2008, the department is defining a new strategy for the KM and e-learning matters. CoPe-L moderators have asked to integrate the CoP as a service in this organization.

Between June and August 2008, CoPe-L members have worked on the IPR issues concerning the resources exchanged on the BayFac Website. It was the first time that members were concerned with this aspect.

In June 2008, during the definition of the ontology and following the discussion concerning the thematic group held in January 2008, CoPe-L members have extended the scope of the CoP. The practice is not only about e learning but also about KM, and collaborative learning in different kinds of situations.

Concerning involvement of CoPe-L members, from August 2008, since the introduction of PALETTE tools, only five members have been exchanging resources on BayFac. Passive members who were only participating from time to time during face-to-face meetings do not exchange online. No member has contacted the one who had posted a resource. We can only notice that some members who have not posted anything have read the posted resources.

7.3.8 Recommendations to developers

The trial of PALETTE tools organised in CoPe-L was done through a specific scenario based on BayFac. Non-PALETTE services such as a blog, an agenda and a contact lists were also used to answer the needs expressed in the CoP in January 2008. In order to have a simplified access to all services used in the CoP, the PALETTE Web portal has been installed with at least a widget for each service. The trial mainly concerns the BayFac service. As this was a new tool for the CoP members, it has requested a period of adaptation and trainings.

A close collaboration between users and developers has been installed. Indeed presentations, face-to-face meetings were organised regularly to allow the users and developers to exchange about the appropriation and improvements of the different services. The first steps were to identify and define the CoP needs. After the identification of services that could respond to the needs expressed by the members. The service mediators, in order to explain the services functionalities and to train users, made presentations of these services. Once the users had a global view of the services and their added value for the CoP, the introduction and integration of the new services has been conducted among members from February to March 2008.

Concerning BayFac, an implication of the focus group since April was necessary to determine the CoP ontology. It took until June to determine the CoP ontology and to validate it with all the members. Then BayFac could be instantiated for the CoPe-L, and some tests with focus group members have been organized. This users group exchange directly with the developers to express their needs and problems. All the requests of the users were transcribed in an Excel table to have the progress status of the developments achievements. Some requests expressed by the users concern an adaptation of the service to the CoP activities, such as a validation process when a new resource is added, while other were oriented to improve ergonomics of BayFac and to facilitate its use, such as display of some resources information or implementation of multi-thematic search.

As explained above, members in the CoPe-L are from different companies, representatives of public and private organizations. Their own interests in the CoP are diverse. That implies different engagement in the CoP and different uses of the services proposed. Actually not all members integrate the new services, and the trials are still ongoing in the CoPe-L as the project is not ended.

7.4 Learn-Nett

The trials of two activity scenarios by the Learn-Nett tutors are about reification. Following the Wenger theory (Wenger, 1998), reification is one of four main processes that are at the heart of learning in CoPs:

- The active *participation* of the members, their involvement as professionals who have competences and knowledge to share and as persons;
- The *reification* of knowledge and practice that often remain tacit for experienced professionals;
- The *negotiation of meaning* that is in interaction with the two first processes and aims at commonly defining what the practices are and how they are implemented by the CoP members in their daily professional activity;
- The development of *identity processes* that is a consequence of the previous ones and is related to the definition of the “borders” of the community and its members’ practice, as well as the collective and individual professional identity of the members.

If we focus on reification, it is a process that Wenger (1998) considers as an important vehicle for learning and professional development. “The notion of reification allows describing the process through which we form our experience by creating objects that crystallise in “things”. [...] Our opinion is that the reification process is at the heart of each practice. All the communities of practice create abstract things, tools, symbols, stories, words and concepts that reify a piece of this practice” (Wenger, 2005, p. 64). Taking personal notes, writing a meeting account, developing instructions for use for colleagues, etc. are forms of reification that allow making concrete knowledge or practices that often remain tacit or individual. Once this knowledge is “objectified”, made concrete and formal, it

can be discussed, modified or evaluated. Through reification (and active involvement of members into discussions), a CoP can negotiate the meaning of its professional practice and so develop them. This process allows making professional practice continuing while paving the way for discussions and negotiation of meaning. In some way, the shared objects constitute the realization of an experienced world in which the social process of understanding each other “allows negotiating common definitions of the situation” (Habermas, 1987, p. 153).

The interaction between reification, participation and negotiation of meaning is important for avoiding “crystallisation” of knowledge and practice. If the meaning of a reified object is not discussed and debated, it may become useless or be elevated as a dogma. That is why Wenger (2005, p. 71) does not consider reified objects as culminations but rather as “boundary objects”: “If reification prevails, if all is reified but without shared experience and negotiation, it may happen that there is no sufficient participation for developing structured, relevant and creative meaning”. The reified objects are not created for themselves but for supporting the CoP members throughout their search for meaning of their professional practice.

These issues are at the heart of the Learn-Nett CoP activities and uses of PALETTE services.

7.4.1 Activities and questions of research

Several questions of research and hypothesis have been identified for informing specific generation of data and analysis. In September 2006, in a synthesis of the activities and needs of the Learn-Nett CoP (Daele, 2006b), some issues have been identified:

It is interesting to note that there are a lot of documents produced which are not reused in the following years. For example, few researches of the students are reused for designing tools for the tutors while there are a lot of interesting data collected and analyzed in those dissertations. The pedagogical guide is also reused but essentially adapted for the next year.

Some questions could be asked:

1. How to provide new pedagogical tools for the tutors by reusing some documents produced? Which internal organization or tool could be of help
2. How to keep track of the monthly meetings (the tutors’ messages in the forum), which are probably the best moments for discussing about practice, and use them for providing tools or reflection on practices for tutors? Which internal organization or tool could be of help?

For some of the orphan tools or activities, the interviewees complain: managing oppositions at a distance, producing (and searching for and into) documents, sharing practices and analyzing the project for improving it years after years. A question is also asked about the use of the private platform for the tutors’ CoP.

In order to address these issues, activities have been developed (see D.PAR.03) and conducted with PALETTE services. In this research, two of them have been chosen for being observed and analysed:

- *Reifying practice*: The objective of this activity is to formalise the daily practices of the Learn-Nett tutors in order to identify the issues they face and the solutions they find and implement. The issues can be pedagogical (interactions with students and other staffs) or technical (use of the Learn-Nett platform and tools) as well as related to communication within the project. The reified practices could then be searched and used by other tutors facing the same issues or new tutors. The base of described issues is also used in the tutors’ training held each year in December before the students’ groups phase. For this purpose, SweetWiki is used by the tutors.
- *Indexing and classifying practices and documents*: The objective of this activity is to gather in one place the documents produced in Learn-Nett since its beginning in 1998. There are different types of documents (PDF, DOC, JPG, HTML, URLs, etc.) and their contents are varied (students’ groups reports, students’ individual reflective reports, Learn-Nett pedagogical or technical guides, research papers of any type, presentations in conferences, tutors’ or students logbooks, external resources used by tutors or students, etc.). Some resources are public, others are private i.e.

available only for Learn-Nett coordination team members. The target public is also varied within Learn-Nett or external.

The purposes of this archiving are to enhance the visibility of the Learn-Nett products that are currently disseminate on different Web sites based in different countries, inform the pedagogical choices of the coordination team while making pedagogical decisions from one year to the next, allow researchers (tutors or coordination team members) browsing within potential useful data (students' reports, logbooks, etc.), circulate the students' groups reports to new students, and inform new staffs (tutors, local coordinators, etc.) about the history, identity, and products of the Learn-Nett.

For this purpose, the BayFac service is used on the basis of an ontology of Learn-Nett documents elaborated beforehand.

These two activities are interrelated as formalised practices described in SweetWiki could be indexed and classified in BayFac, and conversely descriptions of indexed practices could be updated. They are related to fundamental needs of Learn-Nett. Their expected added value concerned the process of preparation of the students training by the coordination team, the tutors' practices and the visibility of the Learn-Nett outcomes outside the CoP.

The following questions of research are related to the objectives of the activities. To make these questions operational, some hypotheses have also been stated. Details about the data to generate in order to answer the questions are provided in table 3 below. The questions 1 to 5 are related to the use of SweetWiki; the questions 6 to 9 are related to the use of BayFac; the last question is related to the use of both services.

Table 3 – Questions of research and methods for generating data (Learn-Nett)

| Questions of research and hypothesis | Methods for generating data |
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| Question 1: Does the use of a Wiki support the reification of the tutors' practice? Hypothesis 1: To describe the issues they daily face (i.e. identify problems and questions from their practice, put them into words, describe concrete situations, formalise the emotions they feel in such situations, formalise the solutions they implement, assess their solutions, etc.) allows tutors questioning their way to be a tutor, so helping them to feel confident with their own practice. Hypothesis 2: As tutors could propose different solutions to one issue, they confront to the solutions of others. This could enable cognitive conflicts. | <ul style="list-style-type: none"> - Questionnaire to the Learn-Nett tutors - Observation of a tutor ('<i>think aloud</i>') - Interviews of a new tutor, the coordinator and two former tutors |
| Question 2: Does the use of a semantic Wiki support the search for answers to tutors' pedagogical questions? Hypothesis: The tutors or new tutors are able to find solutions to their questions in the described situations base. | <ul style="list-style-type: none"> - Questionnaire to the Learn-Nett tutors - Observation of a tutor ('<i>think aloud</i>') - Interviews of a new tutor and two former tutors |
| Question 3: Does the reification of the tutors' practice improve the practice of the tutors as authors or readers of reified practices? Hypothesis: As author or reader of the situations base, the tutors or new tutors feel to improve their practice in terms of management of students' groups, command of varied situations (conflicts, low engagement of students, delays, etc.), self-confidence as tutor, etc. | <ul style="list-style-type: none"> - Questionnaire to the Learn-Nett tutors - Observation of a tutor ('<i>think aloud</i>') - Interview of a new tutor |
| Question 4: Does the reification of the tutors' practice support/improve the tutors' training? Hypothesis: The described situations base is exploited through activities in the tutors' training. The coordinators of the training encourage the use of the semantic Wiki and use the situations base for illustrating the training activities. | <ul style="list-style-type: none"> - Interviews of the coordinator and two former tutors |

| Questions of research and hypothesis | Methods for generating data |
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| Question 5: Does the reification of the tutors' practice support the engagement of new tutors in the tutors' CoP and in the whole course with the students' groups? Hypothesis: After having participated in the tutors' training and in the use (as readers) of the situations base, the new tutors feel more engaged in the tutors' CoP, confident in their role, tooled up for facing possible problems, etc. | <ul style="list-style-type: none"> - Questionnaire to the Learn-Nett tutors - Observation of a tutor ('<i>think aloud</i>') - Interview of a new tutor |
| Question 6: Does the archiving of Learn-Nett documents support the pedagogical choices of the coordination team? Hypothesis: The coordination team searches for documents in the base in order to inform its reflections on the improvement of the Learn-Nett pedagogical scenario. | <ul style="list-style-type: none"> - Interviews of the coordinator and two former tutors |
| Question 7: Does the archiving of Learn-Nett documents improve the actual training with students because of its support to the pedagogical choices of the coordination team? Hypothesis: The choices made by the coordination team improve the pedagogical scenario. | <ul style="list-style-type: none"> - Interviews of the coordinator and two former tutors |
| Question 8: Does the archiving of the Learn-Nett documents support the visibility of the project for the external public? Hypothesis: People who already know or do not know Learn-Nett find in the base documents about Learn-Nett. | <ul style="list-style-type: none"> - Interview of two former tutors |
| Question 9: What are the not expected uses of the archives by any user? Hypothesis: Other uses of the documents or needs related to the use of the documents are developed. | <ul style="list-style-type: none"> - Questionnaire to the Learn-Nett tutors - Observation of a tutor ('<i>think aloud</i>') - Interviews of a new tutor, the coordinator and two former tutors |
| Question 10: Are there needs for archiving Wiki pages or updating archive documents with the Wiki? Hypothesis: There are needs for indexing Wiki pages and updating archived documents. Uses in this sense are developing. | <ul style="list-style-type: none"> - Questionnaire to the Learn-Nett tutors - Observation of a tutor ('<i>think aloud</i>') - Interviews of a new tutor, the coordinator and two former tutors |

As indicated in the table 3, several methods for generating data have been used:

- An online questionnaire (July 2008) was about the individual uses of SweetWiki and BayFac and the way tutors evaluated their usefulness for the Learn-Nett community. Out of 15 concerned tutors (8 novices and 7 experienced), 5 (3 novices and 2 experienced) answered the SweetWiki questionnaire and 7 (4 novices and 3 experienced) answered the BayFac questionnaire (see appendix 7, p. 151).
- The observation of a new tutor using SweetWiki and BayFac has been recorded in May 2008. She was asked to verbalize her actions while working with the services ('*think aloud*' method).
- The interview of this new tutor was about how she appropriated the services and her opinion about their usefulness in Learn-Nett.
- The interview of the coordinator (September 2008) was about the uses of SweetWiki and BayFac in Learn-Nett, and the future developments of these uses. The interview of two former tutors (September 2008) who are no longer in Learn-Nett was about the same questions.

The content analysis has been carried out following the questions of research and hypotheses (L'Ecuyer, 1990). In the following sections the phase of familiarization of the tutors with the services is described, and then the content analysis is presented.

7.4.2 Describing the initiation/familiarisation process

Here below are the available data for the analysis of the initiation of Learn-Nett to the PALETTE services. From July 2007 and the description and validation of the scenarios for Learn-Nett (see D.PAR.03), only the SweetWiki activity has been really trialled. The events below are listed for giving

a glimpse of what have been done with Learn-Nett. It is interesting to see that the use of SweetWiki and BayFac was not obvious at the beginning of PALETTE. The Learn-Nett needs were identified but it was not clear how to meet them.

SweetWiki

- Test in May 2007 (discussions in the forum)
- Answers to the scenario validation questionnaire by the focus group members
- Validation report (July 2007)
- A private Learn-Nett space is created in SweetWiki for the description of the tutors' practices (September 2007)
- Participation of tutors in the training in Liege with the developers (October 2007)
- Help document for the tutors (produced by a member of Learn-Nett with the mediator, emails between them)
- Discussion forum and emails for encouraging the use of SweetWiki by the members
- Questionnaire (July 2008) for analysing the use of the service.

BayFac

- Discussions about the possible uses of BayFac by Learn-Nett (October 2007 by email and on the phone)
- Work on the ontology: emails between mediator and developer (November 2007)
- Organisation of a meeting with a focus group about the structure of the ontology. Report of CENTRA meeting on 12/03/2007 (no recording)
- Validation of the ontology by Learn-Nett coordination team (emails, discussion forum)
- Implementation of the BayFac space for Learn-Nett: emails between mediator and developer
- 09/05/2008: discussion between the mediator and one CoP member for the appropriation of the space.
- 9th-11th of June 2008: email discussion between CoP mediator and BayFac developers about fixing the identified bugs.
- Email discussion between the CoP mediator and the BayFac mediator about the implementation of a 'Learn-Nett2' space (June-July 2008).
- Questionnaire (July 2008) for analysing the use of the service.

Scenario:

- Interviews of the Learn-Nett coordinator and delegate (May 2006). Synthesis of the interviews and identification of possible needs.
- Discussions of the needs with the Learn-Nett coordination team (September 2006) and validation.
- Discussions and meetings between the mediator and the developers (November 2006-March 2007 for the use cases)
- Online discussions (emails) between the mediator and the developers (April-May 2007 for the scenario)
- CENTRA meeting on 05/24/2007 with developers and Learn-Nett focus group (no recording but a meeting report)
- FlashMeeting on 06/19/2007 with developers and Learn-Nett focus group (no recording <http://flashmeeting.open.ac.uk/fm/788dee-8997> but a meeting report published in D.PAR.03 as validation account)
- Meeting in Liege on 09/03/2007 for preparing Learn-Nett 2008
- Scenarios for BayFac and SweetWiki have been fixed in collaboration with the Learn-Nett coordination in October-November 2007
- The scenarios have been experienced by the Learn-Nett tutors between November 2007 and June 2008
- The mediator participates in the Learn-Nett preparation meeting on the 12th of September 2008. Questions of future uses of SweetWiki and BayFac are discussed.

Throughout the initiation phase, several events are worth being highlighted and discussed from a participatory design point of view.

1. At the very beginning of the use of SweetWiki by the CoP, the mediator organised a test activity, asking a CoP focus group to comment and discuss this test in the Moodle forum (June 2007). One of the questions of the tutors was about the possibility for a SweetWiki user, once logged in the service, to have an automatic personal menu on the left of the page with the list of the webs she usually uses. This question threw the Service mediator into confusion. He answered that he did not understand the question. Then the CoP mediator reformulated the question of the tutor. The Service mediator answered he always did not understand while a user could simply add links towards her preferred webs on her SweetWiki home page. Also, a user could add tags she is interested in in the section “You are interested by” of her home page.

It seems that the tutor who asked the first question thought that the SweetWiki had a kind of data base that could be use for automatically personalizing the menu column once connected (such as a portal). Then the discussion between the two mediators has been about the concept of “web” and its difference with a “wiki” in SweetWiki. Finally, the SweetWiki mediator proposed to use the “You are interested by” section of the user’s home page.

Before answering the first question, the Service mediator asked twice to reformulate the question. This lead to the highlight of the specific problem (the possibility to personalize one’s home page) and description of the existing functionalities of SweetWiki for this purpose.

2. The training to use SweetWiki, for its most part, has been informal. Only three Learn-Nett tutors participated in the formal training in October 2007. A few of them participated in the test activity in June 2007 and directly discussed with the service mediator. However, all the other tutors who used SweetWiki trialled the service themselves in an informal way and asked questions to the CoP mediator or discussed together. One of the tutors wrote a manual that he submitted to the CoP mediator for validation, and then he circulated it among the tutors of his university (by email in December 2007). The CoP mediator finally shared the document with all the tutors through the Moodle forum in February 2008. In his message, the CoP mediator wrote “In (almost) each of our partner universities, there is at least one person who has already used this service. Do not hesitate to ask your possible questions”. This message clearly refers to informal learning. Those who have not used the service yet can simply ask those who know the service.

Throughout this phase, different communication tools have been used by the CoP Learn-Nett in a confused manner. The Moodle forum and emails have been used with not necessarily the same persons. Some group conversations occurred in the forum with individual discussions by email in the same time. This is probably a sign of the difficulty to coordinate a distributed group with different sub-groups who are on the process to appropriate new tools and balance the old ones in the same time.

3. It is interesting to point that no services depicted in the first use cases (DocReuse, eLogbook, CoPe_it! – January 2007) has been finally used by Learn-Nett. Also, only one service depicted in the specific scenario has finally been used (September 2007). Explanatory hypothesis could be put forward but it is worth noting that the needs identified in September 2006 and validated by the CoP have never changed. This might mean the teams have conceived many possible scenarios that finally turned out to be useless or inappropriate regarding the needs or functioning of the CoP. A closer participation of CoP members would probably have improved the efficiency of the conception of the use cases and scenarios. This issue is clearly addressed in the scenario validation account (D.PAR.03, p. 25). The Learn-Nett members agreed to say that they participated only on the periphery in the elaboration of the scenario. However they found it useful and accepted to go further.

4. The conception of the ontology of Learn-Nett documents has been conducted with a focus group then validated by the whole Learn-Nett community (tutors as well as professors). Some members did not feel really involved in this reflection. In addition, the use of BayFac does not need that many people get involved for uploading and classifying files. The involvement has then been weak. And yet, from the evaluation of the use of BayFac, the interviewed tutors were happy to have such a database with Learn-Nett documents. This is maybe due to the fact that most of the Learn-Nett members are benevolent in the project and prefer to focus on their tasks rather than to get involved in projects of development of the community. The discussion and negotiation of the scenarios have also been conducted by a focus group (see D.PAR.03).

7.4.3 Results: uses of SweetWiki

First of all, the period of use of SweetWiki that we consider in this analysis lasted about 14 months from June 2007 to August 2008. The first months have been dedicated to the handling of SweetWiki functions. Indeed, the sessions with the students take place each year between January and May. Between June 2007 and December 2007, some actions have been carried out to make the former tutors then the new ones familiar with SweetWiki:

- A little group carried out a first activity in June 2007: the collaborative writing of the Learn-Nett charter (see D.PAR.03).
- Two tutors and one former tutor participated in a face-to-face training organised in Liège, Belgium in October 2007. They got familiar with the functionalities and discussed the possible uses in Learn-Nett. The SweetWiki developers participated in this training.
- Two experienced tutors wrote a document describing how to use SweetWiki (creation of an account, creation and edition of pages, uses of tags, etc.). This document then circulated before the tutors' training day in December 2007.

It is between October and November 2007 that the tutors really used SweetWiki. 20 practical situations and their implemented solutions have been described by 6 different tutors (3 experienced and 3 novices). In addition, 8 practical situations from former trainings have been added by the coordinators of the tutors' training in December 2007. This was to organise specific pedagogical activities during the training day. Among the 28 described situations, 8 have no written solution, 19 have 1 solution and 1 have 2 solutions written by an experienced tutor and a novice.

Question 1: Does the use of a Wiki support the reification of the tutors' practice?

The 5 tutors who answered the questionnaire are unanimous in considering the use of SweetWiki "for describing and sharing the tutors' practices" as very useful. However, only one of them participated more than 5 times in this activity, 3 of them participated between 1 and 5 times, and 1 never participated. The content of the interviews goes in the same way: the interviewees feel that the activity is very useful and relevant for the learning of the tutors' job but they did not use the tool very often either for creating pages, or searching information. On the other hand, if 6 tutors wrote practical situations, there is no trace or comment (in the questionnaires and interviews) about simple search for information into the situations base.

During the observation of a tutor who was using SweetWiki for writing a practical situation that she lived, many difficulties occurred: creation of a new page using the template page, creation of a new solutions page with a link towards the practical situation page, addition of new tags, etc. This faded the tutor's enthusiasm away. On the basis of the observations, these difficulties could be understood through three reasons: the usability of the SweetWiki edition interface, the lack of training dedicated to the use of SweetWiki in Learn-Nett, and the complex structure of the proposed template page (the pages describing practical situations are different from the pages with the solutions). The answers to the questionnaire corroborate this analysis: "Difficulties for managing, accessing, and writing documents", suggestion: "More training to SweetWiki".

An interviewed former tutor considers however that the activity of description of practical situations by the tutors themselves adds value to their experience and makes the described situations valid. She

adds that the use of a Wiki for this purpose is relevant because the solutions could be always developed by other tutors.

In addition, tutors' learning from their confrontation with different solutions to same practical situations is not obvious (hypothesis 2). However, in his answers to the questionnaire, an experienced tutor states: "To discover other opinions and other ways to work is formative. We can benefit from the experience of the other community's members". Even if sharing different "ways to be a tutor" is considered as interesting, it is not clear in this excerpt whether a cognitive debate occurred and would have transformed personal representations of the tutors.

Finally, the interviewees think that it is important for the tutors to take time to question their own practices, as any trainer or teacher. However, we have got no trace that reification of practice makes the tutors more confident in their own know-how (hypothesis 1).

Question 2: Does the use of a semantic Wiki support the search for answers to tutors' pedagogical questions?

Two observations:

- As stated earlier, we have only few traces of use of the practical situations database for searching information, even if the interviewees find this opportunity as very useful for the tutors.
- While observing a new tutor using SweetWiki, she intended to write a new situation. In order to be sure to not write a duplication, she first searched by using the tags related to her situation. No result was found. She then manually found two pages that might contain similar situations. She found nothing. She finally wrote her situation in the right page. When saving the page, she did not write any tag.

In addition, an interviewed former tutor mentions the weak practical aspect of information search. In her opinion, the way to find information is more complex than expected: a tutor has firstly to formalise for him/herself the issue he/she experienced, he/she then has to find a similar situation, he/she finally has to adapt the proposed solution to his/her situation. The fact that the pages describing the situations and those describing the proposed solutions are separate does not support tutors in the process. In addition, in her opinion, the use of tags in each page is not usual for Wiki users. Numbers of pages are not tagged; this makes the pages impossible to find in SweetWiki. In order to avoid the use of tags, she proposes to create menus in each page that would link each page with all the other pages in a same SweetWiki web. But she admits that it is a defacement of the "normal" use of SweetWiki. This issue is also tackled by the other former tutor who states: "Tagging is anyway a specific culture".

Question 3: Does the reification of the tutors' practice improve the practice of the tutors as authors or readers of reified practices?

In the opinion of the new tutors (interview and questionnaires), the reading of other tutors' practices put their mind at rest about their first experience in supporting a students' group at a distance: "As new tutor, I find interesting to read the experience of former tutors; it allows preparing and expecting possible issues by having some solutions".

For the experienced tutors, it is an opportunity to take stock of their own practices but also to know about how other tutors do in similar situations: "For me, it is an opportunity to take stock of my practice. For the future tutors, it is probably an original way to put them in the picture". However, we have not found any clear story about the possible influence of reification of practice on the improvement of practice, even if new tutors feel more confident regarding this new experience and find interesting to be confronted with various solutions to same practical situation.

Question 4: Does the reification of the tutors' practice support/improve the tutors' training?

To the coordinator of the project, it is too early to answer this question. The weak use of SweetWiki by the tutors may be understood by the absence of specific training to the tool. Only three tutors participated in training in October 2007 (organised with other PALETTE CoPs) but they finally did

not use the tool. Indeed the tutors who used SweetWiki did not participate in this training. However most of them were from the same university and they encouraged each other to use the tool. Because of the weak mastery of SweetWiki by the tutors in December 2007, the tool has not really been integrated in the activities of the tutors' training. In the opinion of the coordinator, this lead to a weak use. She thinks that the tools could be better integrated in the next training in December 2008 by proposing them a real use together rather than circulating the instructions for use or presenting a demo. A new tutor, in her answers to the questionnaire, goes in the same way: "At the tutors' training day, I think the most important would be to explain to access the situations and how to contribute to SweetWiki". The two interviewed former tutors also suggest training actions more integrated in the tutors' training.

Question 5: Does the reification of the tutors' practice support the engagement of new tutors in the tutors' CoP and in the whole course with the students' groups?

As mentioned earlier, the new tutors feel reassured by the use of SweetWiki for reading the practical situations described by experienced tutors. However, according to a new tutor, her first visit in the database has been very short because there were few described situations (December 2007). She did not come back later. In her opinion, it was interesting but the lack of technical training was a barrier to feel confident. The help page written by two former tutors did not help her as well. The opinion of the coordinator goes in the same way: a common training to the use of SweetWiki would have maybe got the tutor more involved in the use of the tool. This is to be related to the analysis of question 4: the coordinator suggested integrating the training to SweetWiki in the tutors' training day.

Through the questionnaires fulfilled by two new tutors, it is interesting to mention that, in their opinion, the difference between SweetWiki and other Wikis is the feeling to be involved in an environment dedicated to a specific task. They feel more secure and confident in what is written by the other tutors ("SweetWiki is peculiar to a community and I rather trust the informants..."). The access to SweetWiki through a password probably contributed to this feeling, as well as the organisation of regular meetings with the tutors through visioconferences contributed to the feeling of social presence.

In addition, a new tutor mentions in the questionnaire that the use of SweetWiki "makes the tutor role more friendly and interactive, and strengthens the feeling to belong to a community in addition to the "theoretical and didactical" advantages". This answer may contribute to the idea that the use of SweetWiki can be a vehicle for the socialization and integration of new tutors into the CoP. This tutor also mentions as strength that the use of SweetWiki "contributes to the development of the tutors' autonomy especially if it is their first experience" because the tutor who asks a question can visit the knowledge base on SweetWiki before asking the group.

7.4.4 Results: uses of BayFac

The period of use of BayFac lasted 8 months from November 2007 to June 2008. Only a little group of tutors participated in the reflection about the ontology of documents. This reflection mainly occurred through discussions in a forum and a visioconference organised in December 2007. No formal training has been organised. The mediator of the CoP simply created a document that has been sent to the tutors in the forum. Among 7 tutors who answered the questionnaire, only 2 experienced tutors mention that they used the help document. The others tried alone or discussed the use with a colleague of the same university. Suggestions have been proposed for organising a short common training or individual support by an experienced tutor. No tutor then participated in the upload and classification of the documents in BayFac; this work has been carried out by two former tutors who also were involved in PALETTE. At the end of October, 41 documents were referenced in the base; 2 of them were accessible through a password.

Question 6: Does the archiving of Learn-Nett documents support the pedagogical choices of the coordination team?

According to the Learn-Nett coordinator, the use of BayFac is currently not in Learn-Nett but rather next to it. She considers BayFac as project window for an external audience or as public library. At the

moment, the usefulness for the Learn-nett members is rather weak because most of the documents are available in other locations in the different platforms used in the project.

For an interviewed former tutor, the point in the use of BayFac is to organise the sharing of the tasks: who will gather the documents, who will archive them, who will classify them? On the face of it, these tasks do not require involvement from all the tutors; two or three volunteers could be enough. In addition, she considers the elaboration of the ontology as an important and interesting task related to the use of BayFac. However, she wonders how different persons could classify same documents; it is possible that they do not use the concepts of the ontology in the same way. According to her, a few volunteers are sufficient for carrying out the task unless the CoP members all agree with a clear and shared understanding of the use of the concepts.

Question 7: Does the archiving of Learn-Nett documents improve the actual training with students because of its support to the pedagogical choices of the coordination team?

It is difficult to answer this question. At the very most a former tutor considers that the students and tutors could find former students' groups reports in BayFac. In her opinion, accessing these reports is important because it allows the tutors to reassure themselves and get specific insight about the type of students' tasks.

The other former tutor thinks to an indirect mean for improving the pedagogical scenario of Learn-Nett. Even if there is no longer research objective in the project (at the beginning Learn-Nett was a research project for 3 years), some tutors or professors continue to use data (forums or chats content, students' individual reflections, etc.) for carrying out research about CSCL topics. Indirectly, the results of these researches have an influence on the conception of the pedagogical scenario. These data could be made available for the researchers in a dedicated private section of BayFac.

Question 8: Does the archiving of the Learn-Nett documents support the visibility of the project for the external public?

According to the two interviewed former tutors and Learn-Nett coordinator, this is really the BayFac point. However, according to one former tutor, the fact that BayFac is external to the other Learn-Nett tools is not necessarily an asset because the external public will also have to appropriate it, and this is not guaranteed. The other former tutor considers that the documents made available on BayFac should be 'sharable'; they should not be draft documents or non-standard files. She adds as a question that BayFac is maybe not the best tool for this purpose, considering that an ontology has to be elaborated for only 40 documents. A hierarchical system with categories and folders would perhaps be sufficient. A new tutor goes in the same way: "BayFac is surely more restrictive than other tools for classifying new documents. However, if this restriction is offset by a gain of efficiency (thanks to the ontology), it might be worth using".

Question 9: What are the not expected uses of the archives by any user?

In the seven answers to the questionnaire, the tutors are unanimous in considering the easy accessibility to the Learn-Nett documents as useful or even very useful. However only two of them participated in the elaboration of the ontology, three helped for gathering relevant documents, and three searched at least once in the database. As in the case of SweetWiki, there is wide difference between the perceived usefulness and the real use. However, in the BayFac case, the purpose of the tool makes that there is few uses: there is no need for numerous and frequent handlings for storing and classifying documents, and the researches have not to be carried out very often or all the year.

Among our data, we have not found unexpected uses of BayFac. However, several suggestions have been expressed by tutors for using it better in the future:

- Upload more students' reports in the database so that the new students could have an insight of the types of produced works. As these reports would be publicly available, they would be better promoted. They would be available for teachers and trainers.

- The resources used by the students for carrying out their projects (documents, web sites, etc.) could be disseminated through BayFac, for the Learn-Nett students or trainers and teachers.
- A tutor suggests that BayFac be the only documents base used in Learn-Nett, for the tutors and students. The coordination could systematically promote this tool among the participants.

If we consider the use of BayFac for carrying out researches of documents, the observation of a new tutor using it allowed pointing some interesting facts (only 14 documents were classified in the base at that moment in May 2008):

- In order to search for a pedagogical scenario produced by students, she firstly looked at the facet “Type of content”. A long list of elements appeared (some come from the Learn-Nett ontology but others come from the standard ontology BibTex and are in English). She then immediately decided to rather use the search by keywords.
- She typed “scenario” and got 5 results. By reading the titles of the documents, she deduced that one of them could probably be a pedagogical scenario (“Les avalanches, que peut-on en apprendre?” – “The avalanches, what can we learn?”). We can mention here that the term “scenario” in the ontology can be applied both to the Learn-Nett pedagogical scenario and scenarios produced by students’ groups.
- The use of the green arrows next to the document titles did not appear to her immediately. It is only by clicking on it quite by chance that she could read the document abstract.
- She then searched for an author. She did not immediately notice that the word “scenario” still appeared in the keywords box. When she realized, she explained that it should probably be removed otherwise the two researches would combine with each other. She then thought that “author” could be related to two things: the writer of a document or the one who uploaded it in BayFac. She chose the first option (which is right).
- According to her, the most useful use is that teachers could access the students’ reports that are precisely designed for this kind of audience.

7.4.5 Results: uses of both services

Question 10: Are there needs for archiving Wiki pages or updating archive documents with the Wiki?

According to the generated answers, the idea to combine the use of SweetWiki with the use of BayFac is interesting. However, at least two issues are stated:

- The fact that the ontology of documents used in BayFac has no relation with the folksonomy progressively developed by tutors in SweetWiki. It is not possible to easily archive content of Wiki pages with the documents ontology. The objectives of the two classification modes are very different: on one hand professional practices, on other hand document types and contents.
- Updating BayFac archived documents in SweetWiki is possible only if DOC or RTF versions of documents are available. They can then be imported in SweetWiki. In addition, the need for such task is rather rare, according to the interviewed persons. The pedagogical guide for students that is updated each year is maybe the only example.

7.4.6 Discussion

Regarding the process of reification (Wenger, 1998), its importance perceived by the interviewed tutors in this study is obvious. Several stories of tutors have been generated in this way such as “It is important to write, to keep traces of what has been done and solutions we implemented ourselves for solving pedagogical issues with students” or “The Learn-Nett project is ten years old. So it is necessary to gather the various used resources in order to not lose them or not keep them in mind. The tutors can then access to knowledge stored years after years, without having to carry out multiple and time-consuming researches. Such a storage also allows considering the scope and main issues of the project”. By allowing considering the professional road travelled and evolvement of individual practice, reification is an important walk for any professional. Writing allows formalising experienced professional practices that often remain tacit. For the new tutors, accessing this experience is reassuring and makes concrete the professional experience that they are about to live. Regarding the

Learn-Nett tutors, we observed the development of their professionalism in some way. On the one hand the experienced tutors showed a good insight of their own practice and various actions they are able to carry out in complex situations. According to an experienced tutor, to be in direct touch with the practice of others allowed him to develop a larger palette of professional practices. On the other hand for the new tutors, we noticed stories of feeling of more autonomy facing potential issues. In addition, as it appears in the second excerpt here above, to gather “what has been done” in one location gives a good insight of the community identity and main issues.

If we now consider the instrumental genesis process experienced by the CoP, we can notice an individual rather collective appropriation of SweetWiki and BayFac. The tutors who used SweetWiki for describing practical situations generally did not carry out this task by conferring with each other. In addition, the initiation to the tool has not been done together, except for the tutors from one university who wrote situations together. Each tutor trained alone to the tool by taking the advantage of different opportunities: informal discussions, training in October 2007 or use of the instructions. This also occurred with BayFac. According to the generated stories, a technical training in the same time or before the pedagogical training in December 2008 could develop a better collective appropriation, and the uses could develop better because their meaning and relevance would increase in the tutors’ mind. In instrumental genesis terms, we have not observed real change in the activity of the CoP even if, individually the interest in the approach of reification of practice is alive.

Regarding these considerations, some tutors dreaded using SweetWiki and BayFac because the tools could be used “in addition to” the already used tools, i.e. making the tutors tasks more complex. Indeed Learn-Nett tutors already use three different platforms for supporting the students’ groups: two related to the students’ tasks and one for communicating with other tutors. But according to the coordinator, this finally has not been an issue because the use of SweetWiki and BayFac occurred as the CoP actively intended to gather the different tools into a single page (<http://www.learn-nett.org>).

Regarding the collective appropriation of the tools, the methodology of participatory design adopted in PALETTE probably allowed proposing services close to the real needs and usual uses of the CoP. For doing so, the opportunities of dialogue between the CoP and the designers have necessarily to be numerous and regular. According to Zeiliger, Vermeulin, Esnault, & Cherchem (2008), the issue is twofold. On the one hand, it is worth carrying out a common reflection about the CoP needs, not only for elaborating the specifications of the tools and services that will be developed but also (and mainly) for making the CoP aware of the processes it implements for reifying its practices, fostering members’ participation, negotiating the meaning of its activities and developing its identity. On the other hand, the usefulness of the tool is never given at the beginning; it always has to be elaborated by the users regarding their needs and existing uses in a specific context. In consequence, the usefulness is constructed and as a construction, requires negotiation and dialogue. With Learn-Nett, this negotiation and dialogue often occurred at a distance (between the designers and Learn-Nett but also within Learn-Nett) through visioconferences and discussions in forums and by emails. This is a reason why the development of uses has been relatively slow and formal. The role of the mediator between the CoP and the designers has so been important. The participation of the CoP members would have been more important but it has always been voluntary and allowed developing interest in the uses of SweetWiki and BayFac.

7.4.7 Conclusion and perspectives

In conclusion, the lessons we learned from our analysis could be expressed as follows:

- The CoP members are motivated to initiate a collective reification activity about their professional practices. They are visibly ready to appropriate SweetWiki for this purpose.
- The use of SweetWiki seems to be a vehicle for integration of new tutors: they feel confident facing the practices described in the knowledge base and this base supports them in considering their first experience with equanimity.
- There is an insight among the CoP that the use of SweetWiki and BayFac will develop if collective training is organised. This training could be a basis for a more collective appropriation of the tools.

- There is an insight among the CoP that the development of a collective and concerted use of SweetWiki will allow developing not only the description of practical situations but also more efficient research in the knowledge base. For this purpose, a common and concerted use of SweetWiki tags should be developed.
- A consensus seems to be reached regarding the use of BayFac especially for an external audience. In some way, BayFac allows Learn-Nett to define itself “in extension”, i.e. to define its identity regarding all what it did during 10 years.

In order to understand the interest and acceptance of these two services by the interviewees, we could consider that SweetWiki and BayFac simply extend and make more efficient existing functioning of Learn-Nett. On the one hand, reflection on tutors' practice and professional situations they experience exist since the first tutors' training in 2000. This training was already based on cases analysis in groups. SweetWiki allows keeping common traces of this reflection and access to new tutors in the training framework. On the other hand, the storage of documents also exist for a long time in Learn-Nett but it has never been systematic for giving an easy access to the documents. BayFac probably allows this activity to be more efficient.

In order to develop the uses of SweetWiki and BayFac, several concrete actions could be carried out:

- To enhance the usability of the SweetWiki pages editors. However, this action could probably not be easily implemented as the editor is an external module that is not directly developed by the SweetWiki team.
- To improve the usability of BayFac, especially by giving up or translating the references to the BibTex ontology, the possibility to empty the research fields after a request or the clarification of the difference between actor and author.
- To organise a collective training with the Learn-Nett tutors in which the technical handling of the tools would be developed as well as a common reflection on the scenario of use. This training could be organised together with the tutors' pedagogical training. A collective reflection on the use of SweetWiki tags could take place among other activities; this would allow defining concepts for describing tutors' practices.
- For the tutors, the reflective work of reification and formalisation of their practices is not obvious. Training to such a reflection approach could be organised.
- To simplify the common structure of the pages in SweetWiki.

In addition, ideas have been repeatedly expressed about the use of SweetWiki and BayFac by the students in addition to the tutors for writing the groups' reports and sharing the various resources they use. The tutors, as they are themselves involved in the students' work, would use the tools with them for other purposes and so develop their mastery.

Finally, about our study, our analysis on the basis of interviews, observations, and answers to a questionnaire could be validated through feedback from the CoP and developers. This is under way and could partly compensate the relative weak quantity of generated data. Other researchers not directly involved in this research have reviewed our first drafts; this has allowed pointing out some weaknesses of our methodology, notably our wide personal involvement both in the CoP and PALETTE project.

In addition, we also learned from our study that it is important, when evaluating the use of a technological tool by a group, to consider the complexity of the situation and context as a whole. Quite often, the non-use of a tool is simply explained through a bad ergonomics or ill-will of the users. But in fact, the use or non-use of a tool is rather due to interaction between all these factors within a complex situation. In our case, the development of the uses of SweetWiki and BayFac in the next months will jointly depend both on the usability of the services (SweetWiki editor and research interface of BayFac), the users' training, and the collective negotiation of the future uses of the tools.

7.5 TFT

7.5.1 Context

TFT CoP members are, on the one hand, teaching nurses and, on the other hand, nurses responsible for the welcome, the supervision and the coaching of the new nurses in hospitals. Both of them mainly work to the professionalization of these young people. Repeatedly, they have either to assess them or to help them making their own assessment. It is a delicate task, not so easy to achieve. Several discussions show that most of the procedures are local, leading to different outcomes and that is why TFT CoP members are trying to find shared solutions.

TFT means “transition formation-travail” and can be translated into “training-work transition”.

Knowledge and capitalization management are not developed at all. The CoP is in its creation step. They meet three times a year and, at first, it was rather a group than a CoP. Slowly, some members are on the way to start taking the initiative and assuming responsibilities. The role of the ULg team mediator in the CoP is to provide a basic hotbed for the CoP development through face to face meeting organization and animation, and to set up communication, sharing and exchange tools. Progressively, CoP members should replace ULg animators. This slow and delicate work is ongoing. That explains to which extent the observation work is quite difficult and must be led through individual interviews and activities whose objective is suggested but not commanded.

Members of the CoP do not master ICT tools and services very well. It means, for example, that they are able to send, reply and attach a document to an email using step by step procedures and without understanding what is happening when a problem occurs. They are also able to surf the Internet and to carry out elementary actions like cut and paste, but without perceiving all the subtleties of such an operation. In short, they are often stumped when an error occurs. So, it is not really imaginable to suggest them the use of tools or services not robust enough to avoid them thinking about how the software proceeds.

Before the first face-to-face meeting, the use of a wiki was completely unknown for a large majority of them. In the same way, they did not know for which purpose a mailing list was used.

It seems that the main difficulty for the TFT CoP consists in building its identity, taking itself in charge through roles played by the most active members. It explains why most of the trials will be done in that way. Nevertheless, several common practices exist in the CoP: trainees’ evaluation, coaching of new workers... implying a need to share, to exchange and, above all, to formalize and reify knowledge.

The weak ICT practice explains that we did not have many possible choices for tools and services. We had to choose simple ones: SweetWiki because, in a certain sense, it could look like a word processing program, and a mailing list, because they used to check their email once a day. The mailing list use has been suggested because CoP animators wished to regularly inform the members about any event that concerned the CoP (who made what) and intended to make some training or to send pieces of information by that way. Notice that, in an identity building context like this of TFT, services like CoPe_it! and eLogbook should have been, a priori, more adapted. However ICT inexperience of CoP members led us to prefer SweetWiki that allowed the following actions:

- With SweetWiki, you can edit collectively using an interface not too different from what people know using a word processor;
- By registering, the user provokes the automatic creation of a homepage he can easily complete;
- With SweetWiki, you can upload files and create links to them, so that people can share and exchange in a very simple way;
- SweetWiki generates Web pages which are very familiar environments for CoP members.

So, we can say that SweetWiki is probably not the most optimal PALETTE service, with respect to its contribution to the CoP (and its members) identity building. But one must choose the lesser of two evils. This comment is relatively important to understand the strategic choices for the CoP animation.

7.5.2 Hypothesis

Introduction

Research questions developed in section 5 (p. 15) are not so easy to apply to the TFT CoP. ICT culture of its members is globally weak and the questions do not really deal with ICT skills. They are considered like prerequisites, but to which extent? Answers to these questions might be biased because CoPs members really need very intuitive tools and services. For instance, we have noticed that they adopted a very different behavior when they used these kinds of tools and services. In such a situation, they finally had the opportunity to interact in a CoP perspective, what they found difficult to do before. That also means that the use of the services is a crucial issue and that PALETTE tools and services must be improved over and over again.

So, two solutions appeared: select research questions in section 5 that apply to the CoP (they are not very numerous) or define new research questions dealing with ICT skills. It is what has been done.

Objective

The main objective is to include the trials in a more global process trying to make the CoP autonomous. Presently very supervised, the animators wish it becomes self-sufficient, which needs members' involvement. That can explain why the scenario linked to the trial has been progressively built taking into account the CoP development and the CoP members reaction. The trial objective is to include the use of a PALETTE service and other external services in activities directly related to the CoP identity building.

Research questions

The main question consists in knowing to which extent PALETTE online services can help the CoP to build its identity. Do the members use these services to present themselves, to tell about their activities, to define the roles they want to play, to take responsibilities...? Do these services help the CoP to define itself? In which way? Another related question is to know if other tools and services do it better than PALETTE ones do and why. This can help us to make some additional recommendations both to the CoPs and to the developers.

Comment

We observe that we do not have a captive audience in the TFT CoP. People are very busy with their daily job. That means that trials must only be suggested activities and not commanded ones. For example, if people rarely complete their profile and/or their homepage, we have to understand the reason by taking the context into account.

Specific question

What can the PALETTE tools and services bring to an emerging CoP like TFT? The question can decline in a series of other questions for which answer indicators can be defined.

- What curbs the process of the CoP and its members' identity building through an online service?
- Which actions can be taken to reduce the effects?
- Which recommendations can be made to those who have to lead the development at the beginning?

To find the answers to the questions, we first chose dimensions to observe.

The first set of dimensions is about the members' technological skills and those related to a community work:

1. Digital culture of the CoP members (outside working context)
2. Knowledge and know-how of the CoP members concerning ICT use (mastery)
3. Experience as far as collaboration work and resource-collective creation are concerned
4. Representations of the work and action group continuity
5. Practice and know-how in knowledge reification

The second set concerns the possible fears related to information sharing.

6. Resistance to information sharing related to competition considerations between institutions
7. Vulnerability caused by the disclosure of personal or institution-related information

The third set wonders about the PALETTE project pertinence with regards to CoP project.

8. Relative importance of the problems to solve
9. Project adequacy to the group's objective pursue
10. Added-value of the project tools
11. Service acceptability level
12. Involvement of the CoP members in PALETTE project

One dimension takes an interest in the daily work constraint.

13. Availability, time

The last set is directly related to CoP identity building.

14. Feeling of belonging
15. Involvement of the members in CoP life
16. Motivation of the members

7.5.3 Familiarization process

The starting point for the CoP building was a meeting which occurred on 19th March. However, to tell the truth, a small group of a dozen people had met a couple of times since 2006 in the project framework, trying to collaboratively create an ontology for the CoP. However this kind of exercise did not delight the members because they did not understand the goal of such an activity very well.

On 19th March 2008, the animators of the small group contacted high schools and hospitals to inform them about the meeting and forty people attended it. The objectives were: 1- to realize that some health professionals get the same problems linked to the practice of their job: "the coaching of young professionals" and 2- to improve a first contact with SweetWiki, the more suitable PALETTE service.

Attendees had to fill a form providing personal information and notably, if they accepted a mail list subscription, what they had done. So the second service was built to allow the animators to contact the members whenever they wanted. Indeed, members seemed to be so cautious (with respect to ICT) that such a tool was essential to get the ball rolling each time it was necessary.

The activity using SweetWiki strove to meet at least the three following targets:

- Allow members to share "individually" their opinion about the debates they took part in;
- Get a first contact with an online service (different from the mail);
- Train using some elementary commands of SweetWiki.

Everything had been done to make the task easier. Thus one page per attendee had previously been created. Actually they only had to edit and save the page, to read the other ones and to tag them in order to retrieve them easily.

From 19th March until 30th April, they could go on reading the pages and adding some comments. Some of them did it, but it was not a full success. Animators used the mailing list to send them additional information at a distance, for example "how to fill one's homepage?" and "how to create a page?", and to supply them with instructions and some pieces of advice. The mailing list was also used to simulate a kind of awareness process. Indeed, when a member added some information on the wiki,

animators sent a message on the mailing list to warn the other members. A suggestion to write on the wiki a paper relating the project development was made. This one could be published either in a magazine or on a website.

A second meeting occurred on 30th April. The animators wanted, on the one hand, to deepen the training including exercises on the wiki and, on the other hand, to work on the CoP identity building. Two teams were constituted with the task of drawing a logo for the CoP. Three logos were produced by sub-groups. Later, CoP members were invited to poll online for the best logo. The attendees also discussed in face to face different roles they could play in the CoP. Some leaders appeared.

From 30th April until 6th November, the animators contented themselves with the watching of activities inside and outside the wiki. They kept in touch with CoP members asking them to answer an online questionnaire about their actions on the wiki and their use of ICT. Some of them were interviewed more lengthily.

Some CoP members took the initiative to organize face-to-face meetings with a smaller group. They published reports on the wiki. They informed the other members using the mailing list, and they collected resources about a particular topic they decided to upload on the wiki.

The third plenary meeting happened on 6th November. Fewer than twenty people attended this meeting, i.e. the most motivated ones. This time, the objectives were clearly to structure CoP and to determine who will be responsible for what. But it was also to exploit the experience of the small group to prompt the other members to act in the same way. Once again, training to use online services was at the agenda. It seemed very important to go on making the members trust in ICT through more and more different experiences. They notably learnt to use a poll service and to edit a document in a group. Learning has been very fast and was put into practice immediately.

Notice that, from the beginning, each activity has had two objectives:

- Help members to trust in ICT;
- Help the CoP to build its identity.

The objectives above help understanding why such an ongoing process has been built.

7.5.4 Data analysis

7.5.4.1. Sources

Data come from many sources and are of all kinds. They can be catalogued as follows:

- Data from CoP members' productions;
- Data from the semi-structured interviews of some of them;
- Data from the watching made by the animators during the CoP members' face-to-face meeting;
- Data from all the members' survey (questionnaire);
- Data from a poll to the members present during the third plenary meeting.

Data from CoP members' productions

Almost all of them come exclusively from the CoP wiki (<http://argentera.inria.fr/swikitft/>) because it was necessary to use an accessible tool which allowed productions realized with simple process (due to the mastery level of ICT by the members – as seen in the survey). Thus, Sweetwiki was just the right one for that.

Some information can also be got from the diffusion list put in place. However, it was mainly the animators who used the list in order to inform CoP members, as well as to simulate an awakening process to the events that occurred on the wiki.

Data from the semi-structured interviews of some members

Interview takes time. Thus, choices were required. CoP mediators used some of the information they had (people reactivity in face-to-face discussion, expressed interest, attendance to meetings, etc.) to select members with quite different profiles. Doing so, they hope to cover the field of needs, interests, expectations, impressions (subjective or not) as much as possible. Five people were questioned. The interviews were recorded and then transcribed to avoid any problems.

Data from watching made by animator-mediator

In view of the fact that it is an emerging CoP, that research hypothesis are essentially based on the CoP identity building and that there is not much time to carry out the search, it seemed useful to mediators to be the first CoP animators. At the same time, their main objective was that someone else takes over as soon as possible.

It means that a series of activities were set up with the intention of watching if the CoP members as well as CoP itself made the most of the occasions to build an identity. The idea was also to spot the visible signs of the identity building.

Data from all the members' survey

The three described sources miss a dimension supposed to be brought by the survey: representativeness dimension of the points of view in the whole CoP. So, asking short questions that needed short answers was a searching occasion on which the members' representations could converge. A survey of about under forty questions (see appendix 5, p. 145) was put online and important efforts were done in order a maximum of CoP members answer them.

Data from a poll to the members present during the third plenary meeting

Finally, after a first data analysis, it appeared some useful information was missing. During a meeting, complementary questions were asked to the present people. Answers were given either in a hand-up voting form, or in short answers that people gave according to what they wanted to say.

7.5.4.2. Hypothesis

In the particular case of the TFT CoP, it appeared initial conditions necessary to a CoP emergence and development were present. There was notably a known necessity for exchanging and sharing around a few or badly explained practice and a strong need of internal (personal identity) as well as external (CoP identity) recognition. However, it had some major difficulties to really start. To explain them, there was a certain amount of hypothetical answers. The data collection and analysis showed which ones were pertinent and which ones less. Here we have the answer analysis with a comment about pertinence – if it is necessary. The analysis leads to reports and recommendations that will be developed in the following sections.

Technological and community-work-related competences

1. Digital culture of the CoP members (outside working fields)

ICT culture is different for each person, according to their personal or professional practices. Their work forces them to use the computer every day. According to the survey, twelve people out of sixteen questioned use a computer many times a day and three out of them use it at least once a day. There is just one person who uses a computer less than once a day.

The survey brings out that the questioned people use more their computer to read mails (ten at least once a day, except on weekend, for four less than once a day) than to communicate or produce something (three of them answered that it happens, six that they do not use the computer in that way and seven said nothing about that).

After a quick survey over thirteen people present at a plenary meeting, it appeared that all of them had a computer at home with an Internet connection. Two of them specified that they seldom used it although they had a computer with an Internet connection at home.

The interview analysis reveals two types of people in the CoP: those who use computer in daily life practices, without any obligations, and those who still do not have the “Internet reflex”. One person recently told us that, until not so long ago, he phoned when he had to speak to someone. However, social pressure forced him into using emails. Now that he went through the first step, the most difficult one, he thinks of sending emails instead of phoning.

We could conclude saying that, even if everybody regularly use computers, they generally only do it at work. They do not get the reflex to use it. For a great part of them, numerical practice has not joined the natural uses yet.

2. Knowledge and know-how of the CoP members concerning ICT use (mastery)

This part is different from the previous one because it is not about ICT use frequency but it is about their efficiency.

Through the different information sources, it appeared CoP members mastered ICT at different levels. In the survey, the questioned people assessed themselves their own ICT skills. While seven people qualified themselves as “novice”, nine would say they are “regular”. None of them thought to be “expert”. Anyway, everybody say they have to produce computerized documents for their job. To do this, they use word processing software (fifteen out of sixteen questioned people) and presentation software (nine). At least once a week, they all read their emails, twelve out of sixteen surf the Web and nine use software specific to their job.

Thus, the questioned TFT CoP members use regularly ICT. However some of them do not feel ready to (intensively) work at a distance. Either it is because they do not master the existing numerical environment (eleven out of sixteen), or it is because they do not know the adapted communication tools (eleven out of sixteen).

Those people are aware of their limits and the difficulties resulting from them. To make up for these, they want to take training courses that could be quickly efficient (it could be word-processing software, presentation ones or Web working training courses). Very often, they also wanted to discover other services (tools that would allow them to choose the best one for them/the most appropriate for their needs).

During the interview, a woman said she could use the wiki because its use was explained to her. So, when she needed it, she took the notes written during the explanations and if they were not sufficient she phoned the mediator.

Thus, to answer to the dimension, we would say CoP members regularly use computers, informatic software and Internet, but not in depth. That is the reason why they do not feel ready to intensively work at a distance. Their tool mastery is limited to the use of identical and daily processes for a majority of them. Knowing their limits, they want trainings that would be useful for them in a near future.

3. Experience as far as collaboration work and resource-collective creation are concerned

Through the interviews, it appeared that some people work in a field where they have to do some tasks for which they felt without resource. They would need some help that would allow them to answer their many questions and to systemize their work. Others explain that collaboration was everywhere on their job place. Amongst the questioned people, some daily collaborate while others seldom do so.

The survey answers told us that nine out of the sixteen questioned men and women had already taken part in an exchange group over their job outside the institution. But the answers to the following

question were mixed: “Does the participants’ skill to formalize their practices (write it, clearly and carefully describe it vs. freely talk about it) impede intensive work at a distance?” Half people answered “yes”. Through the answers we notice that people who agree with the practice-formalization impeding distance-work are not inevitably the ones who had previously taken part in a collaboration work.

To gather information about the involvement in the CoP, we asked in the survey if they had already taken initiatives in the TFT framework. Actually, five out of sixteen did it, of which four previously took part in another working group.

To come back to the initial assertion, we can say that some people work in team every day while others are strongly isolated. For some, collaboration work is a habit thus. Therefore, the lack of experience stands in the fact that nobody has done it at a distance and that they hardly understand how it is possible to do so.

4. Representations of the work and action group continuity

In the interviews carried out, people expressed their wishes over the CoP development and the difficulties previously encountered in order to try to avoid them in the future. By paying attention to the different points talked about, they hope the CoP will see the light, develop and last.

The first point of importance is about people getting in touch. It often appears in discussions that people do not feel ready to work with unknown men or women. To make it possible, they need a first physical contact, or at least a phone one, before they can think about working or sharing together at a distance. One necessary step when getting in touch is sharing each other personal data in a formal way. One man told us he wanted to get in touch with another CoP member. However, he never found his personal data and it prevented events to go smoothly.

The second point is that it is necessary to identify one leader or leaders and common objectives amongst the different participants in order to work together. A woman mentioned that she had previously taken part in a group in which people were meeting and were speaking and exchanging about their problems. Nevertheless, they never got over another step than the one of non-formalized exchanges, and thus the group quickly got breathless.

The third point concerns the leader role. Some members’ experiences show that when the task is held by a person alone, there is a high risk of splitting for the group if the person at the head of the project and recognized as the leader left it for whatever reason. So it is better to imply as many people as possible by sharing the tasks. This way, everyone has responsibilities and feels more concerned as “important project member”.

The last point is about the importance of having a body in the background who sustains the group and gives it some impulse if dynamism fades away.

To sum up, the members’ different warnings are the following ones: a group works if there are personal contacts (rather than virtual ones), opportunities to establish the contacts rapidly (formal data exchanges), a hierarchy, common objectives and a task sharing that implies as many people as possible. Nevertheless, such an operation success also seems to be linked (at least in the CoP-emergence process) with the external support of experts who look after the respect of all those things, or ideally, with a similar expertise from the CoP animators.

5. Practice and know-how in knowledge reification

The interviews, discussions and watching clearly revealed the CoP members’ wish to build a databank with the different tools each of them had. The approach consisting in capitalizing is unmistakably felt as interesting from the moment that everyone can draw his inspiration from what he discovers and tries to get the best of it. The idea of building a common document based on capitalized resources together is also present. Members perceive quite well the point of trying to standardize the practices, to

adopt a common lexicon and working tools. Moreover, the wish to talk with a single voice is sometimes very present. For example, some ask for the new employees' skill evaluation, but also for the use of a common and unique model in order to make work easier, and thus could cause problems related this time to the institutions' identity.

According to a rapid survey, eleven out of the thirteen present people at the plenary meeting already had the opportunity to build a new document with their colleagues. However, in this case, it was not a building done at a distance.

As such a task has never been carried out at a distance; half the questioned people during the survey have a negative a priori as we said previously. The negative a priori concerns the restraint that the participants' capability to standardize their practice (write it, clearly and carefully describe it Vs. freely talk about it) at a distance could be.

Thus, the assumption is not totally pertinent since the kind of approach was already used by a certain amount of CoP members. However, and one more time, fears come from the distance working process.

Information-sharing-related fears

6. Resistance to information sharing related to competition considerations between institutions

In the survey, to the question: "what is your predisposition to exchange information over your job ?", thirteen people answered "complete", three "partial" and none of them "non-existent". The same is true when we ask (on a 0 to 5 scale) if their reluctance to exchange curbs intensive work at a distance: eleven people answer it is not important (0), three show a little important reluctance (1) and one person says it is important (4 on the scale). Two of them abstain.

To be more precise, if we take an interest in the restraint that institutional pressure to distance collaboration could be, the majority of the answers reveals it is not important (eight people answered 0) and the other answers are below the half, thus showing the little importance (one person answered 1, three answered 2 and three answered 3).

Interviews reveal that some people already share information in-house in written forms. Others explain sharing is not forbidden but the possible restrictions imposed by the direction generally follow upon one or another unfortunate experience. Finally, others say the direction agrees with the members taking initiatives within CoP.

Contrary to what one might think, reluctance to information sharing is not a restriction at a personal or institutional level (at least in the group with the most motivated people of the CoP). However, if the institutions generally give the full permission to the employees' involvement in the project, some people have to ask the permission to take part in it and to bring internal documents out. They can share, but not everything.

To sum up, if there is a sharing reluctance, it essentially comes from institutions and not from members who are ready to initiate all the approaches to make sharing possible.

7. Vulnerability caused by the disclosure of personal or institution-related information

Concerning vulnerability linked to personal or institution-related information disclosure, it appeared through the survey that seven people do not fear much and nine do not fear at all negative comments of their employer as regards certain exchanges. None of the questioned people fears that. On the other hand, in an interview, a woman told us she has to ask the permission to the direction (they are ready to exchange but not everything because they had previously suffered information and tool hijackings). This explains why caution is more proper today.

Concerning Internet use, people told in the survey answers that thirteen out of them had reasonable fears against three who did not fear as far as security and/or confidentiality is concerned. It is also true that Internet-use-related insecurity is not much or not at all a restraint to intensive distance work (five people answered 0, six answered 1, three answered 2).

Nobody related the fact of not having built his personal presentation page on the wiki with the information-disclosure fear.

This it does not seem that CoP members have fears as regards a possible transformation of information sharing into information disclosure.

Project pertinence

8. Relative importance of the problems to solve

In the survey, nobody thinks that the problems the CoP building is supposed to solve are not very important, or that it did not meet the different activity suggestions because of a lack of pertinence. Thus, there is quite an interest in the project and its activities, or at least there is not an asserted and showed lack of interest.

In an interview, a woman explains a small group in the CoP formed to work on a common subject important for them, that is to say the building of a model designed for the students' evaluation. The documents could be shared and discussed further with others. Other people announced their intention to meet to work on other themes.

In all the interviews, as well as during plenary meeting discussions, CoP members underline the importance to get out of their isolation and to work together to share the ideas and resources, and to standardize their practices in order to make work easier. Moreover, CoP members talk about it with their colleagues and the number of interested people who want to take part in it is increasing.

Although the interest is present and some people begin to act, the scale of the task could be a risk of abandonment: "My overall perception is that we are still in the general and it is quite difficult to see the end of the way. It seems so enormous. That's it, that's the scale of the task before we get something completed. It's true that it is not easy at all to go to meetings like that and when the executives asked what you have done, we answered we have done many things but I could bring nothing material, concrete, even if we know that we worked for something useful. That's like that!"

It appears, through the different interviews, that members sometimes have more ambitious objectives, like the woman who wants to build a common tool that could be introduced to the minister to help him taking decisions and standardizing practices. Another woman hopes for her participation to the TFT CoP helping to clearly define her post, her role and the means she has in order to notably be recognized in her place.

To sum up, we can say that every person who is present in the group sees the point of it as well as the increase in value it could add to the daily work (although they have not all taken part to concrete activities yet although they can feel fear and discouragement in view of the task scale).

9. Project adequacy to the group's objective pursue

The survey was also conducted in order to assess the adequacy or inadequacy of the service, the objective-pursue project. To the question "do you think the project is inadequate?", fourteen people answered "no" while two were "without opinion". Thus the project is not rejected. However, when the question was "do you think face-to-face meetings are the unique way to efficiently and validly exchange?", twelve people said "no", three had no opinion and only three others said "yes"...

By being more particularly interested in the way they see in SweetWiki an adequate means that can help their community to develop, members clearly differ in two groups. Nine people gave a 0/10 note

for the help brought by SweetWiki while one person gave 3/10. In the other group, two people gave a 6/10 note for SweetWiki increase of value to the CoP work, three people gave 7/10 and one gave 8/10. The possible report for all the results is that the majority does not have a favorable a priori in relation to the service as far as help brought in the work undertaken is concerned (whatever the reasons that justify it) (see previous hypothesis about ICT mastery, for example).

In an interview, the questioned person still moderates the results. He points out the advantages linked to such a tool use, as for example the interest of a distance tool like the diffusion list that allows to exchange with people we do not necessarily know. The case came when another person asked himself a question whose answer the first one had. They could help each other without necessarily knowing each other and it saved much time.

The CoP members recognize the project interest for the technological tool association to CoP work. However, more than half the questioned people think that SweetWiki is not the more adequate tool for CoP building and work to be done. It does not necessarily mean that this tool has not any good functionality but that it does not fully meet the CoP members expectations concerning such a tool (see the following point about SweetWiki use in connection with the considerations over ICT mastery).

10. Added-value of the project tools

The survey reveals twelve people think that the communication technologies can efficiently sustain the practice community development (against a person who thinks the contrary, and three who are without opinion). Despite that, only one person regularly consults SweetWiki, eleven occasionally do it and four never go on it. When we ask these people why they never use SweetWiki, they answer they do not think of doing so, they do not find anything pertinent or what they look for. Maybe should we relate that with the subjective evaluation of SweetWiki use? (see next point)

Nevertheless, the visit of wiki allowed observing that someone put meeting reports on it. During a discussion, one person told that computer support was essential in order he can take part in the CoP continuously in view of the geographical distance between the other members and he. Information would not circulate so well without tools such as the wiki.

One part of the people's view highlights the service increase of value in time, information diffusion and services done. In the positive comments, it appears interviewers would appreciate to have places in which there would be procedures that each new person could consult just as he likes. Once negotiated and established, the procedures would allow practice standardization. The coaches realize they have to train young people who currently use to work with the Internet. For the new employees, finding clever identical for all and available online procedures would make the work easier. The same is true for the coaches. It would save a considerable amount of time because information accessibility increases with the Internet. That's the reason why, although the practice change (it means move up from oral or paper to digital) is not that easy for those who have other habits, it still seems to be worth. It is interesting to note that the members' representation of what the project tools and services can bring is relatively positive, regardless of the difficulties encountered to use them.

11. Acceptability level of the services

The tool used by TFT CoP is SweetWiki. In the survey, eight people tell its use is complicated and five say the contrary (three people were without opinion). On the other side, we asked them a note over SweetWiki use on a scale from 0 to 10 (see the graphic below).

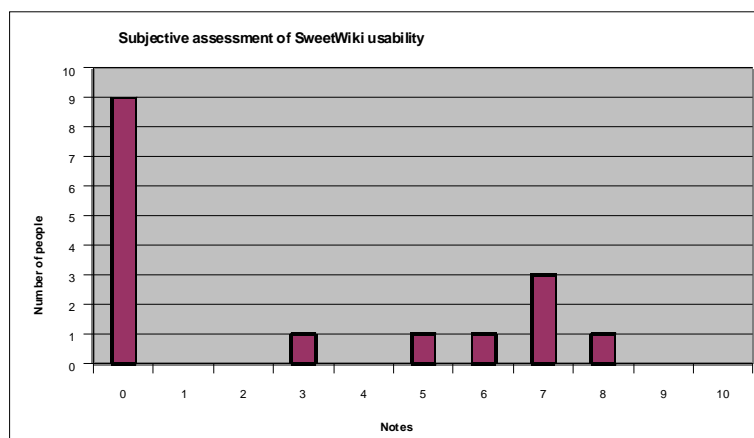


Figure 10 – Level of acceptability of services (TFT)

The results show that ten people out of sixteen gave to SweetWiki use a note lower than five, and amongst them, nine noted it 0/10. A survey permitted to shed light on the results.

Here is a list of the elements pointed out by TFT CoP members as being able to make the tool easier:

- A simpler URL would allow to know it easily and to reach the wiki from another computer than the one that has it in its favourites;
- A more personalized interface would allow to feel as we were reaching a space booked for CoP members when we connect the service (it would strengthen the group identity);
- A more structured interface that gives information about the approaches to do tasks would make the use and the information search easier (a lot of users find it difficult to evolve in SweetWiki, to find the information they want and to place resources in it; the incentive level of the operations is low);
- An automatic backup copy during the work would make the task easier and would avoid to daunt people who are used to computers on which automatic backup copy occurs and who produce writing effort before they lose what they did because they forgot to save on time;
- The automatic mail sending to the whole members when a modification is done on the wiki would encourage the other members to consult it to enquire about the changes; it would also avoid wastes of time...

The interviews also allow understanding more in depth and with finesse the reasons of the comments, the people's feelings. The CoP members master ICT at different degrees and do not always learn the good use reflexes. That's the reason why some do not use it or do not necessarily dare to search how to do.

A few examples often appear in discussions which are more usefulness questions. When someone changes things in the wiki, other members are not warned by mail over the amendments. One person says he does not use the wiki because it is a waste of time should nothing was added or because he does not know how to find the new information. Another one tells that if he has not realized a task himself on the wiki during plenary meetings he is unable to do so when he is alone at home. It means all the functionalities that were not introduced and tested in group are not learnt by some people and may never be used by them. It occurs with another person's comment explaining that when he receives a link by email inviting him to go and read new information, he systematically puts it in his bookmarks.

The old practice reflex is still well present. Actually, if we read the wiki content we can find a meeting report that stipulates that the more concerned people who were not present at the meeting had a phone call with the present people to have face-to-face information over what occurred. The different anecdotes underline the fact that some TFT CoP members are not used to work with ICT and that each

handling asks them some efforts. It explains why some balk at using numerical tools instead of oral and paper ones.

To sum up, we can say that the members see the tool interest in itself but they are curbed by their computing skills, on the one hand, and by the proposed tool use, on the other hand, when they have to use them. Although the different people think ICT can efficiently sustain CoP work, they do not see SweetWiki as the tool that met the needs the best way. They do not find it easy to use and encounter a series of difficulties curbing the use. Of course there are other reasons of SweetWiki choice and we continue thinking it was the best choice to do. Besides, wiki is alive even if many users criticize it. ICT confidence is not lost. We had, and still have, proofs of that.

12. CoP members' involvement in PALETTE project

A rapid survey during a plenary meeting pointed out ten out of the thirteen present people have a personal idea, but still quite vague, of the PALETTE project before they got more explanations. After a more detailed introduction, four people have difficulties to explain the project to another one yet.

During the interviews, members tell they have a personal idea about what a CoP is. On the other hand, they have some difficulties to understand the mediator's part in the project. TFT CoP members especially put a lot of themselves in the project because they have a real interest in working together as well as building the CoP.

Some of them explain they were suspicious when they decided to take part in the first meetings. They expected a theoretical approach from an academic department. They were afraid of what was expecting them and were suspicious about the actual intentions of the project. Then, they talk about a "relaxation" when they begin to put a lot of themselves in precise tasks.

Daily work constraints

13. Availability and time

The survey allowed assessing in which measure people claim to lack time to involve in the project. We asked the question "could you assess why your availability curbs intensive work at a distance". They answered with a 0 to 5 note, 0 for not important and 5 for very important: two people gave a 0 note, one person gave 1, two people gave 3, another two gave 4 and seven people gave 5. It means that three people think they are available to intensively work at a distance and eleven are not.

Three people justify the fact they never answered the different activity suggestion by lack of time. The same reason is given by one person who did not build his/her own page on the wiki and by two others who never consult the wiki or seldom do it.

During the interviews, the same comments regularly recur. The work to be done by members is substantial but, according to the year period, it splits differently. There are empty periods during which they have more time to stop and think about the problems. It also explains why many people think two or three plenary meetings a year is a reasonable amount. Thus, it allows to meet people in order they exchange over their projects, but also to remind them of their membership to the CoP and their duty to stop and think about it from time to time as well as to angle their practices.

Some people mention more personal problems to explain the lack of time. For example, a woman explains she does not want a project because she must hold a full time job with a part-time job. Another claims she does not suggest her idea of project but at the moment she does not feel sufficiently available to take exchanges and to sustain them to people interested in working on the theme with her. A third one says she did not complete her profile because she does not know how to do so and she does not have time to look for it. Finally, at least one does not log on the wiki and does not systematically open mail attached files because it depends on the time she has and the advantage it can give her in a near future.

CoP identity

14. Feeling of belonging

To check the hypothesis, the four information sources were exploited.

In the survey, thirteen people think the group of teaching nurses and ICAN (coaching) nurses forms a practice community, two think the contrary (i.e. they do not) and one is without opinion.

In the rapid collective survey, and after more information about CoPs theory, eight out of the twelve present people define themselves as belonging to a CoP while the others rather think they are still a group at the moment (however they are going to form a CoP in the future). When we ask them if they would form a more consistent practice community by splitting the posts (ICAN and teachers), eleven answer “no” while four say “yes” (one is without opinion).

In the interviews, a man explains he does not feel as a part of the CoP because, except his involvement in plenary meetings, he did not get in touch with other members and did not work on any subject yet. Moreover, he heard a small group formed but he is too far from it and thus cannot take part in it. In the future, he also wishes to take part in a workgroup over a particular theme. In another interview, a woman thinks the mixed CoP (as it is currently the case) is interesting because both groups can bring specific contributions. But on the long range, she prefers a simple CoP (only made of ICAN) in order to work on a bigger amount of subjects.

The logo and the personal page building on the wiki are also the signs of the group identity building. Eight people out of the sixteen questioned ones during the survey built their own page. Those people are generally the most involved in the CoP.

Despite the difficulties to attest online, we must admit the belonging feeling to a CoP or to a group that is going to become one is quite present. Some appreciate the CoP including people with two different jobs like this; others would prefer one made of person with the same job. According to the last one, it would allow to plan a larger amount of work themes.

15. Involvement of the members in the CoP life

“What do you think about the way the group’s members feel concerned by the project?” One person answered he feels “not much” concerned, nine feel “moderately” concerned and three “fully” concerned. If we ask them whereas they already got in touch with other group members to see in which measure they exchange, four answered “often”, six “seldom” and six “never”. The answers show quite a suspicion in relation to what will become the CoP as well as a hesitancy to embark on the project. The objectivity forces us to tell things have evolved in the right direction since the survey occurred.

In the interviews, people tell they join the CoP through the word of mouth. They heard of it and inquisitively came because they were interested in what was done. Since the moment, some have just a lot of them as work group pioneers for example. Thus, the new members currently enter the CoP through standard process rather than through an online contact. A point of view underlined in an interview mentions that the CoP is a place where people with the same job meet to “exchange in order to improve daily practices”. There is also a wish to standardize practices within the CoP and notably through the small group that formed. The person who is speaking feels a real will to act and wishes to form an alliance with that one. Nevertheless, he thinks it would be better to share tasks and/or to allocate functions so that more people put a lot of them. Thus, people would feel more concerned. That is why he wanted to act as an example and he took the initiative to organize the next plenary meeting in his institution.

These remarks let us think there was not direct link between the belonging feeling and the involvement at the beginning. However, the feeling is increasing and a raising number of people take the initiative,

which has a energizing effect on other CoP members. Actually, for a few time ago, many people have suggested action subjects and workgroup setting up (out of imitation).

16. Motivation of the members

The objectives pursued by individuals entering CoP are not all the same. The different starting points are the following ones:

- A need for practice and knowledge improvement in their respective institutions;
- A wish to exchange with a view of a quality search;
- A wish to make the function evolve through exchanges (they sometimes find it badly defined);
- A need to justify the function to superiors who do not always clearly understand “what is it about”;
- A wish to standardize practices to make the task easier for people in charge;
- A will to rebuild a team work (in hospitals, people who hold the office are often isolated while, at the beginning, they formed with a view to work in team; this profession side lacks and they see the opportunity to rebuild it through CoP participation);
- A will to form a pressure means (a person explains she wants to make a kind of practice notebook with other people; at the end she could introduce it to the minister to help him taking decisions in order he gives them more time and means to reach the objectives).

Motivation sources are numerous and we can hope for the apparition of many useful tasks as well as parts held by as many CoP development concerned people as possible.

7.5.5 Discussion

Atkinson & Raynor (1974) and Maslow's (1970) theories are interesting to work the hypothesis.

- In his theory, Maslow explains there are two ways of being in view of a task. Either the person seeks success, challenges himself and is ready to take failure, or he absolutely refuses to be brought face to face with failure and thus he acts accordingly, and only realizes tasks he can do.
- In their theory of task-difficulty auto-fixing, Atkinson & Raynor (1974) explain human being sets himself the difficulty of the tasks to be realized according to the prediction of the task success.

Both theories are interesting regarding the TFT CoP because it is an emerging CoP without actual habits. Thus we can expect such CoPs development not being directly related to the members' commitment will. It appears projects and motivations are not missing. Thus the CoP startup slowness and the members' weak involvement in a first time can surprise (although most of the members have belonging feelings to the CoP). Maslow and Atkinsons & Raynor's theories can explain the lack of involvement since it can be set against the ICT mastery level by CoP members, and overall in the way they assess the mastery themselves.

The latest CoP activities watching unmistakably shows that if an obstacle is overcome, and considering the importance of the belonging feeling, the involvement is no more a problem. For example, it took months before few CoP members took the initiative to put information on the wiki (while the need was felt) or before two or three people broadcast messages through the diffusion list. On the other hand, it took less than one hour before about ten people expressed themselves over their training needs on an online survey (Doodle) and before many members took part in the drafting of an online document (Buzzword) after one of them introduced the idea.

According to these reports, there is a certain amount of rules it is useful to take into account in a context where the CoP is emerging and whose ICT mastery average level of the members is relatively low.

In a first time, the presence of a mediator is absolutely necessary. He will have to suggest simple activities allowing CoP to build an identity step by step, if he is convinced of the existence of good initial conditions (as they appear in the best known theories about CoPs).

Technological tools are possible sources of demotivation if they do not respect the profile of the majority of the members. It means we have to favour the use of simple tools, intuitive ones whose interface conduces to act rather than interfaces that require an exploration in a great number of links in order to find the good one. Notice that if the action is known, it is not so difficult; however, the good application role is to suggest actions as well as to put them forward. To choose tools and/or services with clear guidance and an obvious symbolic logic is necessary in such a context.

The use of less intuitive tools is not banned because some of them have interesting functionalities. In this case, the tool interest has to be clearly negotiated within the CoP as well as to come with a training that emphasizes their ergonomic defaults. However, and whatever their interest, tools and services will not have to differ too much from the users' habits.

The mediation, instrumentation and instrumentalization questions are difficult to deal with concerning TFT CoP. However, we will try to give here some useful elements to take into account for other CoPs.

1) Instrumentation is about the collective appropriation of a tool by CoP.

As previously said ICT culture of CoP members is weak and the tools and services personally used are not numerous and are not varied. Moreover, a building CoP can not have built habits. As in all the cases where a CoP is led to build up, it only can do it through the impulse of a few members who work for the objective, in a first time. In this particular case, it is the ULg mediators' team. The team gathered the individuals, but also suggested tools and services they currently used, by making choices that seemed the best.

Moreover, the PALETTE project service as well as the diffusion list did not get the expected success, and if they are used today it is because we had to beat an important inactivity.

Actually, CoP members know few tools and they ask for information over them, as far as the information diffusion does not take too much time. Thus, they must stay closer to their more immediate concerns. For example, it is practically certain that such a tool offering many functionalities related to the CoP life is seen as useful for it, since the CoP functioning is still vague in its members' mind.

Must we say that the CoP threw back the first suggested tools? The expression is maybe a bit heavy. However, we can talk about a straight adoption. On the other hand, a simple service, a survey application, has immediately been adopted, or changed, as a tool that allows taking rapid organizational decisions. The adoption, such as the one of collaboration-edition tools like Google Docs and Buzzword are unmistakably related to the service conviviality, their ergonomic qualities (which disadvantages Google Docs) and the feeling of accessing information rapidly and easily. Nevertheless, as the mail use is quite common amongst the members, it is of course crucial to use this service to inject enthusiasm into the activities.

Finally, and obviously, we quite naturally pointed out that people who completed their personal page were also the ones who put a lot of themselves in the TFT CoP and actively took part in the meetings. Obviously, the type of activity and the results are interesting indicators for the CoP animators who have to try to rapidly involve people in the CoP identity building process.

2) Instrumentalization is about the evolution of a tool through its use by a CoP and construction of new uses of services by CoPs members.

As the tool and service use is quite reduced, it is rather difficult to develop considerations over instrumentalization. However, we can notice an evolution of the simple survey application whose success was such that it was practically used for discussion aims. It is noteworthy to point out that the application conviviality is such that the users are ready to submit to its decision. The approach simplicity probably has something to do with it.

Moreover, we notice that the fast transition from one tool or service to another is not possible as regards to the average level of ICT tool mastery by CoP members. Obviously the CoPs members do not have the reflex to wonder about the existence of other tools. They just have a quite mild will to change a service they start to know a little bit into another they do not know at all. It explains why they try to exploit to the maximum the known services. Thus, they used SweetWiki web as resource sharing space while other PALETTE services could have suited in absolute terms (thus without taking the context into account).

3) Mediation is about the way the CoPs plan and develop the use of the services regarding an issue or a need they concretely face.

As the skill level of using services and tools is limited, CoP members certainly tend to use the one they need to make their dreams come true. So, when sharing resources, members directly thought of using SweetWiki. The question is not “What is the tool or the service that would help me upload resources online?” but “Tell us how to upload resources using SweetWiki”.

We notice that when a tool is right for a quick interaction objective between members (what explains awareness systems are so important), the fact of choosing that tool results from the decision of one member to use it, and a limited use by the other members.

7.5.6 Follow-up to the developers and the CoPs

The TFT CoP experience must be replaced in the context of an emerging CoP, what means that members ignore they are part of a CoP simply because they do not know what a CoP is and the way a CoP can exist and develop. The other main point is what we called the very intermediate level of CoP members' skills using ICT. The last element is obvious and matches to an important motivation of the members, if not to be part of a CoP, well “to get together to be better and stronger”.

That part will be divided into two sections, the first one is an information feedback to TFT CoP members, the second one concerns PALETTE services developers and give them general but also essential information on the way to develop their tools.

Back to the CoP(s)

A CoP development success is linked to many important facts. It is difficult to delete one of them and even good circumstances are not necessary a way to success. A CoP is mainly based on the energy of its members.

Following observations and advice aim at helping CoP animators to detect what could increase their development and help them avoiding some regular traps.

The CoP identity building

Develop easy-to-do activities

Among those easy activities, we can talk about a logo creation, distinctive feature (for example using colors we will find back in WebPages), a flag or a banner the CoP could use to be known outside and recognized inside.

Create one or more CoP specific spaces (a wiki, a blog or a website...) that use the colors of the CoP. By the way, note that several PALETTE tools and services offer such functionalities.

Define the range of the CoP

The main point is to give you clever objectives, even if they are still global and supposed to be developed later. In the same way, it would be a shame for the CoP coherence not to put the different members' interests together when building the group.

ICT training

Chose technological tools adapted to the ICT skills of the average members

It means you have to measure those skills. Use and accessibility indicators to the Internet and numerical information can be really revealing. Choosing the tools could be done by taking into account received indications. So, if people use a few applications in similar contexts, it is better to first chose tools that remind them of what they already know.

Accept spending time to ICT training

Availability problem is a general purpose. So anybody turns to activities of utmost importance. Regarding to their priorities, it is recommended that members agree to spend some time to discover tools and services the CoP thinks it is useful to use. It is even more true if those tools are unknown and need an important training that will be all the more important as the tool use will be frequent.

Chose useful activities for the CoP as training

That training can be done as members meet at a same place. We could even imagine it could be done at a distance, but then it needs a little more work. So, the training to use a wiki could be the right moment to collect people's impressions over an important subject. It is to kill two birds with one stone.

Daily working process

No need to always find a consensus

CoP members are more concerned by this recommendation. A CoP is a sum of individuals sharing a common global worry that is more or less defined. Notice that the best it is defined, the highest will be the membership feeling. In the TFT CoP, the worry is based on the wish to solve problems that can appear between the training and the work sphere. Some members would like to separate the worries of the teachers and those of the managerial staff (ICAN), but others think, and they are obviously right, that the CoP would lose one of its main resource. Such a discussion can end quickly if we consider that subgroups can be organized around more precise subject and that a CoP can also be a build-up or dissolution of smaller cells, what makes the CoP develop and enhance its resources. The advice is thus to consider a proposition that would not reveal a major interest for yourself and gladden to see that other people get together to develop the resources of the CoP.

Avoid that some members become essential

A nice way to say it would be that "It will be more difficult for the beast to die if it has several heads". If the development of the members is essential, a trend could be to rely on more important involvement of some members. That is why it is useful to multiply the actions inside the CoP as well as the responsibilities. It could also be interesting to double the roles considered as more important.

Get help from an outside expert sight

In the particular context of a growing CoP, that sight looks essential. An expert should tell about his experiment in the ICT domain as well as in the CoPs development and understand the needs linked to the first domain as much as prevent from dangers of the second one.

Encourage interpersonal contacts

Many actions are born as soon as two people decide to start one. It is thus very important that a member could contact another one easily. We must give priority to services that allow anyone to give his personal data and try to encourage everyone to do it as seriously as possible.

Back to the software developers

An easy-to-remember URL allows people to remember it easily and connect to the wiki from any other computer than the one it is already set in the favourites.

We obviously face a cognitive skill problem linked to an availability problem. Since the beginning of the project, PALETTE service developers did their best to make task use easier to users. When the

project will be finished, most of them will put their resources available for CoPs. So it is useful to think about those two problems that would make users' work easier and would increase the interest in the offered services.

A more personalized interface would allow people to feel more comfortable when connecting to the service thanks to a member reserved space inside the CoP. This would also increase the group's identity.

The same remark is also proper as a CoP will get one of the project services: which will be the visual elements that will allow members to feel comfortable, to feel "like home", except the text parts on the screen? This question is food for thought.

A better structured interface that explains steps to realize tasks would make searching and use much easier (many users think it is difficult to develop in SweetWiki, to find searched information and even download resources; action stimulation is weak).

It is true that many PALETTE services developers focalized less on practicalities than on interfaces. A use analysis allowed correcting most important problems. The main point is now to develop more attractive interfaces and suggest actions by using graphic elements.

An automatic backup copy during the process would make work easier and would avoid daunting people who would lose their work if they forget to save it on time as they are used to work on systems where an automatic backup copy is systematic.

Concerning people who are not convinced by ICT, services must become stronger; otherwise, CoPs could quickly renounce to use them. It is recommended to work on backup copy aspects, but also protect the users against most errors (wrong handling or wrong action).

Automatic mail sending to all members when a modification has been done by anyone on the wiki would encourage other members to inform themselves about the changes; it would also avoid wasting time.

We have observed that several intuitive tool compilations with an easy awareness system (email based for example) are really efficient concerning resources and decision production dynamics. We insist once more on the fact that easy-to-use technological ways to inform users are essential for people who are not working all the time on a computer or do not have much time to surf the Net outside a working structure, if we want the PALETTE services to be approved by CoPs with the described profile.

To end this part, it is good to know that even if the CoP was unable to directly handle the tool and the PALETTE services, data analysis allowed to light up advice and recommendations that will hopefully be useful for new CoP members as well as PALETTE project developers who want to improve their product.

7.6 TIC-FA and TIC-EF

7.6.1 Introduction

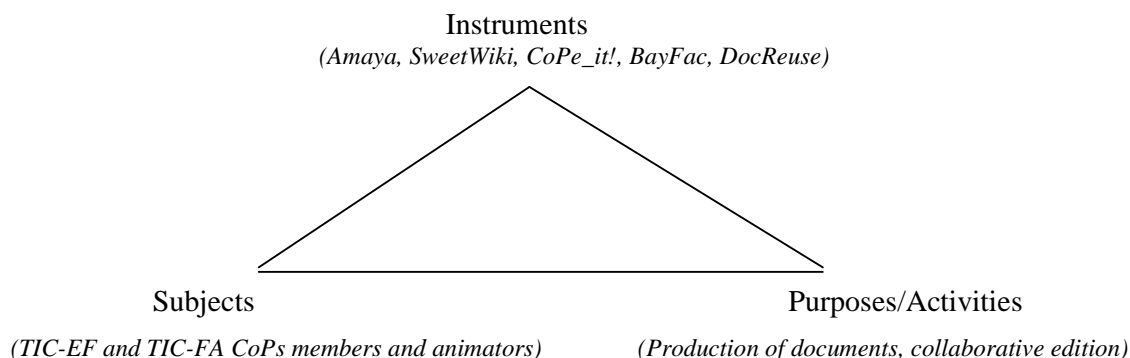
The TIC-EF and TIC-FA CoPs respectively concern members of the communities of learners related to the courses of « Technologies de l'Information et de la Communication pour l'Éducation et pour la Formation » (TIC-EF) and of « Technologies de l'Information et de la Communication pour la Formation d'Adultes » (TIC-FA).

The observation of the TIC-EF and TIC-FA CoPs activities reported hereafter focuses on the evolution of the members' representations and their practices referring to the use of different PALETTE tools or services supporting the collaborative edition and the production of documents. How do they appropriate these tools? Do they accept them? Do these ones become instruments that support their

current activities? Do they adopt the PALETTE tools and services to realize a particular task? We will also point some considerations about usability and acceptability from the CoPs animators who prepared and animated several activities.

Five PALETTE tools or services (Amaya, SweetWiki, CoPe_it!, BayFac and DocReuse) were exploited through different scenarios dealing with production of documents, collaborative edition and identity building and debate.

Figure 11 – PALETTE tools used by TIC-FA and TIC-EF



Before explaining our goals and protocol of research and its results, let us introduce on the one hand, the actors and the social context related to TIC-EF and TIC-FA communities. On the other hand, we will expose the uses of the PALETTE tools and services.

7.6.2 Actors and the social context

The TIC-EF and TIC-FA CoPs members are students of first master in Educational Sciences from the Faculty of Psychology and Sciences of Education at the University of Liège (Belgium).

During this academic year, in addition to the mandatory common part of their cursus, the learners also have to choose either the section “Teaching and research” or the section “Adults training”. Among the courses imposed in their section, the TIC-FA course is mandatory for the students having chosen “Adults training” and the “TIC-EF” course for those who have taken the option “Teaching”.

Concerning the learners’ profile, it is important to precise that the majority (even the near total) of the students followed a “bridge” to reach the second cycle at the university (two years of the master in Educational Sciences). Once graduate from High schools (three years of studies, but not at the university) in certain domains such as specialized educator, primary education schoolmaster/teacher, professor of secondary education... they had to follow a complementary year to prepare themselves to the master. So, rare are the students who are bachelors from the university (first cycle) and enter directly in the two years program of the master (second cycle) in Educational Sciences. Moreover, these students all are not identically familiarized with the ICT. Thus, they constitute a heterogeneous public in terms of competences and attitudes towards the ICT.

From an organizational point of view, each course gathers from ten (TIC-FA) to fourteen students (TIC-EF). At the end of their two years of master, the learners have to capitalize 120 credits. TIC-EF and TIC-FA courses have a weight of 6 credits (estimated to a workload of 144 hours). There are face to face activities (+30 hours) and distance or homework. Brigitte Denis, responsible for the two courses, and Perrine Fontaine, her assistant, train and supervise these activities. They are also considered as the animators of the CoPs. TIC-FA started mid-September and lasts until January. TIC-EF started at the same period but continues until April with a specific practical work program: participate to the Learn-Nett activities. The two courses deal with a global common topic: the use and the integration of ICTs in training and learning contexts. So it is a good opportunity to experiment the PALETTE tools and services, the hypothesis being that those one can support learning, interactions, capitalization of knowledge... among CoPs members or even among a community of learners.

7.6.3 Activities and the observed trials

Considering the institutional framework related to a training and learning curriculum, the challenge is to conceive activities integrating the PALETTE tools and services uses while respecting the objectives, the contents of the courses and by linking them to the generic scenarios and some instantiations suggested in the D.IMP.08. With this intention, several activities have been implemented within TIC-EF and TIC-FA CoPs: some are related to specific topics including several kinds of activities; others are used as threads of the course and linked to some punctual uses related to a particular task and proper to one of the two communities.

Specific scenarios

A. Analysis and comparison of educational environments through two models

Several activities fit into a specific scenario common to the TIC-EF and TIC-FA CoPs consisting to analyze and compare four educational environments (DES-TEF¹, e-Woccq², Learn-Nett³, “Préparation de conférence”⁴) through two theoretical models: the “DIAMANT”⁵ and the “Sept piliers de l’auto-formation” (Carré & Pearn, 1992).

The following table offers a synthetic view of the activities which are instantiations of generic scenarios related to the three teams and where Amaya, Sweetwiki, BayFac and DocReuse are exploited.

| <u>Generic scenarios</u> | | <u>Used Tools/Services</u> | <u>Specific activities</u> |
|---|---|----------------------------|--|
| Team | | | |
| 1. Management of members | Animation – Identity building Team 3 | Sweetwiki | <ul style="list-style-type: none"> * Register to the service and create a WikiName * Create some workpages for each CoP * Explore the created workpages proper to its CoP * Create a homepage (personal profile) * Tag the pages to create folksonomies according to the domain of the CoPs |
| 2. Production of resources 3. Reuse of resources | Reification of knowledge Team 1 | Amaya DocReuse | <ul style="list-style-type: none"> * Conceive templates recovering the theoretical models (done by the animators) * Allocate to different pairs of learners analysis model and a learning environment (LE) to analyze (done by the animators) * Analyze LE starting from a theoretical model and fill the templates * Edit the documents on the basis of templates * Reuse data to compare the results of the analysis resulting from the same model and the various facets coming from the two models suggested to visualize the differences and the similarities (done by the animator) |
| 6. Build Cop memory | Reification of knowledge Team 1 | BayFac | <ul style="list-style-type: none"> * Identify and create facets and their values to allow the classification of the documents (done by the animators) * Post resources produced (notably those with Amaya) to build a common repository and attribute them facets (by animators and learners) |

¹ <http://www.stecrifa.ulg.ac.be/destef/>

² <http://campus-woccq.ulg.ac.be/>

³ <http://learn-nett.org>

⁴ Sprumont, P.(2007). *Préparation de conférence*. Liège. Document interne.

⁵ Leclercq, D. & al. (2000). DIspositifs d'Apprentissage et Modèles Appliqués aux Nouvelles Technologies (DIAMANT). Liège. Service de Technologie de l'Éducation, Université de Liège. document interne.

| | | | |
|-------------------------|------------------------------------|---------------------|--|
| 7. Search for resources | Reification of knowledge Team 1 | BayFac SweetWiki | Search the documents produced by other pars according to certain facets and values Search documents from CoP tags |
|-------------------------|------------------------------------|---------------------|--|

B. Create a pedagogical scenario based on the use of ICT and live process of collaborative learning

Implemented only within the TIC-EF CoP, the scenario, which consists in creating a pedagogical scenario based on the use of ICT and living a process of collaborative learning, will not be the topic of analysis in this deliverable. But, the CoP animators intend to continue to use the Amaya PALETTE tool after the end of January (and so the end of the PALETTE project) with the template they created for this activity and play some parts of the scenario. They hope that DocReuse will be not only usable but also usable independently from the developers.

Identically with the preceding scenario, this sequence of the activities and the reuse of the data through different services will undergo certainly modifications in order to as well as possible be adjusted with the courses according to the usability, the acceptability of the tools/services and their level of development. For instance, the « DocReuse » service is also envisaged in the scenario to make comparisons intercategories (ex: establish or compare a list of technological competences or the modalities of evaluation...) within different pedagogical scenarios. Moreover, the animators of CoPs have the possibility in the new version of Amaya to create themselves their templates. But, will these functions be implemented and if so, in a usable and acceptable way for the members of the CoPs and their animators?

An overview of the activities of this generic scenario is presented in the following table.

| <u>Generic scenarios</u> Team | | <u>Used Tools/Services</u> | <u>Specific activities</u> |
|---|--|----------------------------|---|
| 1. Management of members | Animation – Identity building Team 3 | CoPe_it! | * Create the TIC-EF community * Join to the the TIC-EF community * Create workspaces for each CoP |
| 2. Debate and make a decision | Collaboration- Debate and decision Team 2 | CoPe_it! | Exchange, debate and negotiate by groups and decide the contents linked to the pedagogical scenario to be conceived collectively <i>For instance: the public concerned, discipline, didactical resources, ICT tools...</i> |
| 3. Production of CoP resources | Reification of knowledge Team 1 | SweetWiki | * Incorporate the essential ideas and decision makings of the debate in a descriptive form of the scenario * Tag the created pages * In a collaborative manner, produce a first draft of the pedagogical scenario by groups |
| 4.a. Reuse of CoP resources 4.b. Production of a new resource | Reification of knowledge Team 1 | Amaya | * Conceive the template relating to the pedagogical scenario * Transfer the data of the scenario coming from SweetWiki to centralize them * Restructure the pedagogical scenario on basis of a template and edit the final document |
| 5. Reuse of CoP resources Comment : This fonction can be an independant activity | Reification of knowledge Team 1 | DocReuse | Reuse and compare common parts of pedagogical scenarios conceived by learners in order to list and examine the definition of technological and transversal competences as well as the procedures of evaluation |

| | | | |
|--------------------------|------------------------------------|---------------------|--|
| 6. Build Cop memory | Reification of knowledge Team 1 | BayFac | Post produced resources to build a common repository and attribute them facets |
| 8. Research of resources | Reification of knowledge Team 1 | BayFac SweetWiki | Seek the documents produced by other pars according to certain facets and values or tags |

Threads

As well as for the TIC-EF CoP members as the TIC-FA ones, two common threads allow them to produce personal data (logbook and portfolio) and data to be shared (News).

A. *Keep a logbook (portfolio)*

The first thread is a tool for the students to analyze their own experience of learning. Every week, at the latest two days before the next course, the members fill their logbook and send them to their teacher. The goal is to help them to keep tracks of their learning process during the activities... and to collect data about the trials.

To sustain the members' reflections, the animator of the CoPs gives them some instructions but they have the freedom and the possibility to be creative about the logbook presentation. The logbook contains two parts: one private and one shared. The personal section is based on individual variables (Charlier, 1998) that the learners could not want to share with the CoP animator. The second part of the logbook leads each learner to take a new look at oneself and reflect on one hand, on the training activities compared to their expectations and on the other hand, on topics such as their ICT mastery, the production of documents, the collaborative edition, the usability and the acceptability of the proposed technological resources and the collaborative learning. These reflections are conserved in their portfolio where they capitalize their productions.

Each version of their logbook is edited with Amaya; the TIC-EF and TIC-FA CoPs members use this tool at least once a week. Therefore, related to the generic scenarios, this activity refers to the Team 1 which concerns the knowledge reification. It allows the members of these CoPs to facilitate the production of documents.

B. *Edit news about the ICT in Education (ICTE): the "WikiNews"*

The "WikiNews" activity represents the second thread of the courses for TIC-EF and TIC-FA CoPs. The learners have the possibility of editing particular information on ICTE (innovations, last novelties...). With this purpose, the students have access to the SweetWiki service where a specific page is dedicated to the news concerning the domain of their community. To guide the learners in the layout of the WikiNews pages, the animators give a common structure to describe the news (title, source, description and author with the publication date). As for the generic scenarios, the SweetWiki service allows to animate the CoP by managing one of those activities "WikiNews" (see Team 3).

→ Links to the public pages of the WikiNews of TIC-FA and TIC-EF CoPs

- <http://argentera.inria.fr/swikiulg/data/Main/WikiNewsTICFA.jsp>
- <http://argentera.inria.fr/swikiulg/data/Main/WikiNewsTICEF.jsp>

Punctual uses of PALETTE tools and services to carry out a particular task

First of all, let us remark that there have been more activities implemented within the CoP TIC-FA because these students have two courses a week contrary with the other CoP (only one course). Thus, the animators can spend more time with them to implement several activities including the PALETTE tools and services.

A. *Netiquettes*

In relation with the generic scenario on the animation of CoPs (Team3), the creation of “Netiquettes” with the SweetWiki service allows the learners to undergo an activity of collaborative edition. This one consists in conceiving charters collecting recommendations about the use of four types of services: Wiki (1), chat (2), email (3) and forum (4).

For each CoP, four different pages (one per service) are created in SweetWiki (N=8).

→ Links to the “Netiquette” pages of the TIC-FA CoP

- <http://argentera.inria.fr/swikiulg/data/Main/NetiquetteWiki.jsp>
- <http://argentera.inria.fr/swikiulg/data/Main/NetiquetteChat.jsp>
- <http://argentera.inria.fr/swikiulg/data/Main/NetiquetteCourriel.jsp>
- <http://argentera.inria.fr/swikiulg/data/Main/NetiquetteForum.jsp>

→ Links to the “Netiquette” pages of the TICE-EF CoP

- <http://argentera.inria.fr/swikiulg/data/Main/NetiquetteWikiTICEF.jsp>
- <http://argentera.inria.fr/swikiulg/data/Main/NetiquetteChatTICEF.jsp>
- <http://argentera.inria.fr/swikiulg/data/Main/NetiquetteCourrielTICEF.jsp>
- <http://argentera.inria.fr/swikiulg/data/Main/NetiquetteForumTICEF.jsp>

SweetWiki not being usable in a synchronous way by several users, the animators imagined a planning which makes the pages available to the members of CoPs to edit in a collaborative way during the course. In their respective CoP, the learners constitute groups of around three people who carry out a first draft of recommendations in SweetWiki. Then, a change of group participants takes place but a member remains for each topic. Once the new groups formed, the learners exchange and agree on the proposed rules in order to edit out improvements in SweetWiki. This activity is finished by a collective discussion with all CoP members.

B. *Analysis of LORs: MapCoP and adaptation of Yellows pages*

This activity was implemented only with the TIC-FA CoP. The first Learning and Organizational Resource (LOR) tested is named “MapCoP” (see <http://sweetwiki.inria.fr/swikipalette/data/Lor/MapCoP.jsp>). It consists in building a conceptual chart or a diagram representing the CoP. In group, the learners are brought to think over the place and the role of each CoP member, the shared interests, the way of working together, and the various ways towards which the CoP takes in the future.

The second LOR is an adaptation of “Yellow pages”. It deals with the constitution of a repository of contacts by creating personal pages in SweetWiki (see <http://sweetwiki.inria.fr/swikipalette/data/Lor/YellowPages.jsp>). Each individual provides information on its current work, professional qualifications, main interests... To complete their profile, they must add a photo and create a link towards another resource (example: another Web page). They also have to tag their pages in order to facilitate the retrieval of colleagues or specific expertise.

After each tested LOR, the learners have also to criticize and analyze activities on a page created into SweetWiki. This activity is attached to the generic scenario of the Team 3 on the CoP animation. Notice that this trial of the LOR (validation aspects) is reported in D.PAR.06.

→ Link to the page for “Analysis of LOR”

- <http://argentera.inria.fr/swikiulg/data/Main/AnalyseLOR.jsp>

C. *The ICT invariants*

In each community, the members are confronted to the concept of ICT invariant (Poisseroux, Lassaux, & Vandeput, 2008; Vandeput, 2006; Vandeput & Colinet, 2005). In their pedagogical scenario, the animators invite the learners to create themselves personal pages where they give their definition of invariant and some examples. The animator creates a general page within SweetWiki with hyperlinks

to the CoP member ones. This global activity is in line with the knowledge reification (Team 1) and more particularly, production of CoP resources.

→ Link to the page for “ICT invariants”

- <http://argentera.inria.fr/swikiulg/data/Main/InvariantS.jsp>

D. Tags web pages

Bound to the knowledge reification (Team 1), the function “Tag” is exploited on several occasions within the TIC-EF and TIC-FA CoPs since their members must allot tags to each page created in SweetWiki. They can seek, find their productions and/or reach the others’ ones and then have access to a common capital of knowledge located in their wiki pages. These tags will constitute the folksonomies of the two CoPs. Notice that they can also use other tools like de.licio.us to tag Web pages.

E. Debate on the feeling of belonging to a CoP

As the TIC-FA CoP is a recent community, a debate between their members takes place within the CoPe_it! service in order to exchange on their feeling of belonging to a community of practice. Also related to identity building, this activity focuses on the debate based on member’s representation and input from documents (see Team 2, generic scenario “Debate and Decide”). In addition, information resulting from the debate can be (re)exploited in the logbooks produced using the Amaya tool.

→ Names of workspaces in the Earth CoP area: “CoP TIC-FA Gr1”, “CoP TIC-FA Gr2”, “CoP TIC-FA Gr3”

F. Search for resources through facets and their values

The CoPs animators prepared documents to be classified and defined the “ontology” of the CoPs domain that permitted to the developers to create the facets and values used into the TICEF & TICFA space. TIC-EF and TIC-FA CoPs members use the BayFac space dedicated to their CoPs to search for resources. They had the instruction to try to define a question, search resources in the TICEF & TICFA BayFac space using one or more facets, write down the obtained results, examine the accuracy of the information, and comment the usability and the acceptability of the service. The TIC-EF CoP members also explore the BayFac space of the Form@HETICE CoP since the domain of this CoP is very close to theirs.

Later these CoPsmembers will provide documents to be uploaded and classified by themselves or by the animators. This activity is linked to the generic scenario related to reification of knowledge (cf. team 1).

→ BayFac space dedicated to TIC-EF and TIC-FA

- <http://prod.palette.tudor.lu/ticef/bayfac/index.php/>

Conclusion

Nine activities, including each one **trials of at least one PALETTE tool or service in context**, are the topic of analysis and data-gathering. In bond with the question of research, certain activities refer to the production of documents and others with the collaborative edition. Those are also attached to the generic scenarios and their instantiations suggested within the framework of the WP5-T4. TIC-EF and TIC-FA CoPs activities deal with the three teams topics insofar as they concern at the same time the **reification of knowledge**, collaboration with **debate and decision making** and finally, of the animation of the CoP seen under the angle of **identity building**.

| Team –Generic scenario | Tool(s) Service(s) | Trials Specific scenario | CoP |
|--|--|---|------------------|
| Team 3 – Identity building Team 1 - Knowledge reification | Amaya SweetWiki BayFac DocReuse | Analysis and comparison of educational environnements through two models | TIC-EF TIC-FA |
| Team 1 - Knowledge reification | Amaya | Keep a logbook | |
| Team 3 - Identity building | SweetWiki | The WikiNews | |
| | SweetWiki | Netiquettes | |
| | SweetWiki | Analysis of LORs | TIC-FA |
| Team 1- Knowledge reification | SweetWiki | The ICT invariants | TIC-EF TIC-FA |
| | SweetWiki | Tags | |
| | BayFac | Search for CoP topics centered resources | |
| Team 2 - Debate and Decide | CoPe_it! | Debate on the feeling of belonging to a CoP | TIC-FA |

7.6.4 Description of the initiation/familiarization process of the CoPs

Introduction

As the trials take place in an academic context, the animators can not leave the TIC-EF and TIC-FA CoPs to try the tools and services without a minimum of guidance for various reasons. Firstly, they are confronted with organizational constraints such as the time devoted to training and the pedagogical contract (including specific objectives...). Secondly, the development of the tools is always in progress. Consequently, all the tools are not completely operational and all the functionalities are not implemented yet. Moreover, this immaturity and/or the instability generate ergonomic problems to which it is necessary to face. For this reason, it is important to initiate the students to their use. Different methods have been used: presentation, demonstration, exercises, online course.... The preparation consists in informing the students by providing guidelines and by specifying the traps to be avoided. To do so, the animators have for instance recourse to the description of the tools by various experts (cf. the D.PAR.04) and to the training modules developed within the framework of the WP8-T3.

PALETTE project

During the first course for each CoP, the animators briefly present the PALETTE project and mention its Internet site (<http://palette.ercim.org/>). They insist on the principle of the participatory design. This introduction allows students to become aware of the context in which the PALETTE tools and services are designed and developed. This first explanation aims at supporting the acceptability of the PALETTE tools/services by the CoPs members and preparing them about the potential problems of usability of the tools proposed during the activities. Moreover, the concept of “Community of practice” is illustrated (conceptual framework, existing examples (e.g. PALETTE CoPs),...) and the hypothesis that the present group of learners can become a CoP or at least a community of learners is addressed. This topic will be deepened all along the learners’ activities.

Amaya tool

Amaya is the first tool presented to the CoPs members. Since the animator has already downloaded the software on the computers of the classroom, the installation of Amaya is not a task carried out by the members of CoPs. They will have to do it later at home on their personal computers. Their task is to create and edit a short document where they formulate their expectations in relation to the course.

Then, each document created is sent to the animator. The members of CoPs first handle the tool by trials and errors. Their recurrent activity with Amaya is the production of their logbooks. When a difficulty is encountered, the students initially try to solve the problem by themselves and in the second time, they ask their questions to the animators directly or through their logbooks. Answers are generally given during face to face session. This methodology is based on discovery and the **problem solving** and the **learning /teaching paradigm: “Experimentation/reactivity”** (Denis & Leclercq, 1995; Leclercq & Denis, 1998). Following these first uses, the animators explain the utility and the added value of the tool and give some recommendations of use which cannot be deduced intuitively (ex: the F2 key to select a paragraph). They structure the learning (explanations on the functions) and propose to participate in the Amaya⁶ online training module.

SweetWiki service

From the beginning, the members of each CoP are confronted with the use of SweetWiki since this service sustains the activity “WikiNews”. But, before using the service for this task and to prepare the students with his use, the animators invite the members of CoPs to create a personal page with their profile in SweetWiki in order to get acquainted to others. To introduce this service, a “mini” training given by the animators consists in explaining the concept of a Wiki. Then, the animators show examples (functionalities to be used) and the learners carry out the stages progressively to register and edit their homepage. Feedbacks are given to the students and online references are available to familiarize themselves with the service. Contrary to the initiation to Amaya, the methodology is connected more with the “**scaffolding**” (Bruner, 1993) and with the **learning /teaching paradigm: “practice/guidance”**.

CoPe_it! service

To introduce the service to the members of TIC-FA CoP, a researcher of the CRIFA (Julie Henry) made a demonstration of the goals and functionalities of CoPe_it!. She explained how the users must be registered, create, search/find and interact on a new workspace in a synchronous manner. As for the SweetWiki service, the methodology is connected more with the “scaffolding” and with the learning /teaching event: “guidance/practice”.

Beforehand, the animators of the CoP had defined the various types of objects to avoid ambiguities. Thus, the “idea” object (symbolized by a light bulb) meant the addition of new idea, suggestion or proposal. A reaction to an existing idea (comment, contribution...) was represented by the “Comment” object (symbolized by a speech balloon). The unknown objects (symbolized by a note pad with a question mark) were defined like the contribution of a consultable external document such as a for instance html or pdf documents, a picture, a video, a URL... Lastly, to differentiate them from the comment and the unknown documents, the animators imagined the notes as non available elements in the form of an external file (e.g. theoretical synthesis, reference, citation, example...).

For the realization of the activity, the mediator of the CoP created three workspaces (CoP TIC-FA Gr1, CoP TIC-FA Gr2, CoP TIC-FA Gr3) where each group of three students intervened in a synchronous way for debating about their feeling of belonging to the TIC-FA CoP.

Lastly, once registered, the students belonged to the Earth community. The ideal would have been to create TIC-FA CoP and to invite each member for the development of the CoP identity. But, the time constraints and the many already implemented uses of the PALETTE tools/services were decisive aspects in the planning of the activity in favor the Earth CoP. Nevertheless, the researcher of the CRIFA their showed the procedures to create a community within CoPe_it!

⁶ http://content.moschorus.com/Mospub/parcours_Amaya/index.html

BayFac Service

The CoPs members were familiarized with the use of the BayFac service through a demonstration done by the CoPs animators. Afterwards, they directly used the service to realize the activity described above.

7.6.5 Question and research goal

Research goal

To observe the evolution of the representations of CoPs members about the use of ICTs and the development of new practices related to the collaborative edition and the production of documents when and after they use various PALETTE tools and services.

Question of research

What evolves in the representations and the practices of the members of TIC-EF and TIC-FA CoPs following the use of the PALETTE tools and services concerning the collaborative edition and the production of documents?

7.6.6 Hypothesis

The use of the PALETTE tools and services modifies the representations relating to the production of documents and the collaborative edition as well as the acquisition of new practices in the sense of those prescribed by the developers.

7.6.7 Framework of research

Our study is focused on the evolution of the representations and of the practices of the users when *they* use the PALETTE tools and services dedicated to the collaborative edition and the production of documents. Thus, we collect data on the representations and the practices of the members of CoPs at various times.

A practice “*returns to a professional activity oriented at aims, goals and norms of a professional group. It results by the implementation of the knowledge, of the processes and competences in act of a person in a professional situation*” (Altet, 2002, p. 86). Within the framework of our research, we are centered on practice to which the learners state to adhere (declared practices). In complement, we will carry out observations to analyze the practices actually implemented during various activities (effective practices) without forgetting to confront them with the expected ones (prescribed practices) by the developers in connection with the use of the PALETTE tools/services.

In addition, the social representations seem to us to be good predictors of the attitudes (positive or negative) the students will first adopt towards the PALETTE tools and services supporting collaborative edition and production of documents. Those correspond to the product of knowledge of an individual interacting with a collective sphere. The social representations are the product of groups, broad or restricted, defined by the belonging to a common social or professional universe (Elejabarrieta, 1996). In other words, they correspond to a collective activity of interpretation and construction of the real which produces a knowledge whose the cognitive, emotional, symbolic contents play a central role in the way of thinking and on the daily action of the group’s members (Abric, 1994). We also have recourse to the social representations of members because they reflect and legitimate a social practice.

Thus, to collect the declared practices and the representations of the subjects allows us on the one hand, to *collect* data on the way they adopt the PALETTE tools and services on the individual and collective sides and on the other hand, to measure their impact in terms of learning and adhesion to new practices, competences.

The complementary types of data will enable us to define the appropriation as well as possible and the acceptability of the PALETTE tools/services by the CoPs and to highlight the possible changes *relating* to the tasks of collaborative edition and production of documents.

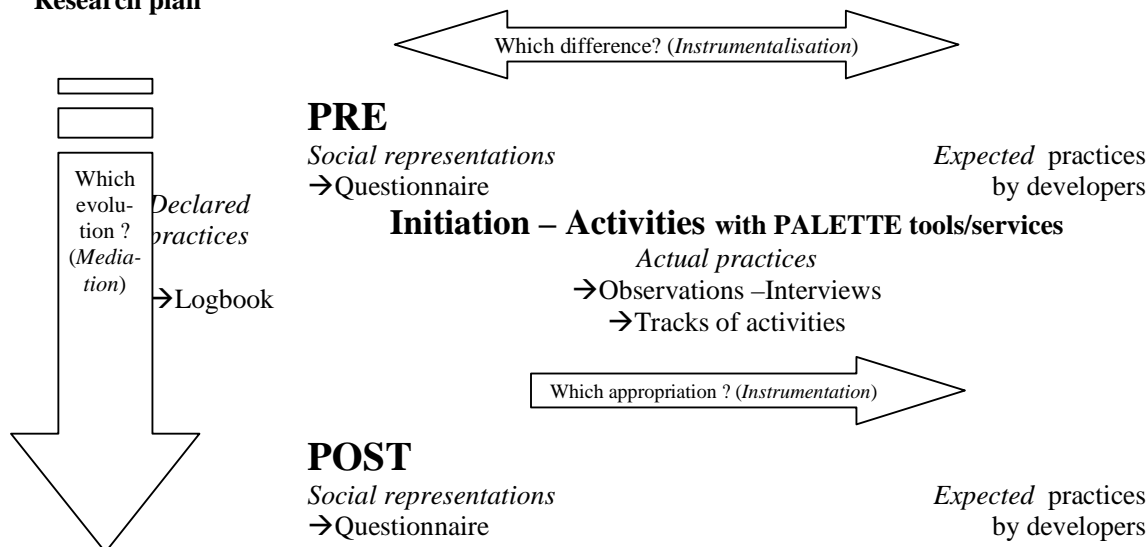
7.6.8 Instrumentation of research

Types of data

Four procedures *are* used to collect different kinds of data:

- The gathering of the student's **representations** is carried out by a **questionnaire** mainly *closed* collecting "prompted" data (such as the behaviors with regard to use of the ICTs or of the collaborative work...). The members of CoPs answer twice the questions between September and December 2008: before (PRE test) and after (POST test) the activities. Not being able to work on great numbers, the data analysis concerns a **descriptive approach** which leads to qualitative treatments highlighting the changes and describing the way in which the students adopt the PALETTE tools and services.
- As for the **declared practices**, **questions** are inserted in the **logbook** of the students in which they comment the activities. The logbook enables us to collect prompted data on the practices of the CoP members about the collaborative edition and the production of documents as well as the acceptability and the usability of the tools/services.
- Related to the **actual practices**, the animators carry out direct **observations** during the realization of the tasks by the students. These sparked off data allow approaching the question research in a more analytical manner. These observations of students using the PALETTE tools and services are completed by questions asked by the animators (a type of **semi-directed interview**) in order to go into detail vague points emerging from the first observations and tendencies.
- Lastly, we keep **tracks of the activities** realized by the learners within the framework of the collaborative edition and production of documents. These invoked data represent the **effective practices** of the students recovering on the one hand, the interactions, the negotiations, the individual and collective interventions at the time of the collaborative edition and on the other hand, the various stages (or various versions of a document) during the production process of the documents.

Research plan



Questions for the logbook and the interview

The following examples of questions illustrate what can be dealt in the shared part of a logbook, depending on the activity undertaken or during the interviews of interactions with the CoPs members.

Examples of questions:

- Did you have to carry out collaborative tasks with a technological tool/service? If so, which one? Which stages did you execute? Which were the functionalities used?
- Did you edit a document in a collaborative way with the SweetWiki service? Did you edit a document with Amaya tool? If so, how did you proceed?
- Would you use again one of these tools? And why?
- Does it influence your use of ICT tool? If so, how and why? To do what?
- What do you think about the tools/services used during this course? Which are their advantages and inconveniences? Which difficulties did you encounter? Are they easy to use? Why?
- What did you learn? Have you new practices with ICT tools?
- Do you feel member of a CoP?
- ...

Presentation and validation of questionnaire

The “questionnaire” has been validated preliminary to its submission to the CoPs members. This tool was tested by students that participated to “TIC-EF” and “TIC-FA” courses during the former academic year. Modifications were made following these making-tests of the instrument (see appendix 8, p. 156).

7.6.9 Ethics and deontology

Ethics principles are respected. The goal of the research has been presented to the CoPs members. They know they participate to a research action based on participative design. They have then the opportunity to live this kind of process which is also described in the content of their courses. They know they are free to give their (positive or negative) comments about the activities, the tools and services used. They are actors of a regulation process both for the organization of the courses and the PALETTE research. These activities can be considered as a practical work of the courses.

This research being carried out within an institutional framework with a hierarchical relationship between the actors and researchers, we take care to indicate the delicate character of certain questions, for instance a part of the logbook is strictly personal. Only those who want to express publicly the individual aspects about the way they live interactions with the teacher or private feelings for instance do it. Certain activities are mandatory for the course, but those remain oriented towards the students’ learning. This research is not inserting into privacy.

Only the teacher, her assistant and the researchers can access to the data. They are not anonymous since it permits to provide individual feedback to some students. They keep a copy of their answers to the questionnaire and of their logbooks. These documents are parts of their portfolio and become personal support to observe their evolution during the year (especially concerning their master of ICT tools, design and management of learning activities including ICT, etc).

From a deontological point of view, we are attentive with certain precautions such as the right not to answer or partially answer certain questions, the guarantee of confidentiality if they disagree with the fact to use their comments in reports, anonymity when their data are used and the right to react if they judge an offensive, intrusive, trapping, skewed, irritating or not relevant question or intervention.

7.6.10 Results

First of all, we present the representations and the declared practices of the members for each CoP before and after the use of the technological tools and services on the basis of the answers provided to the questionnaire. We compare them in order to notice if there are changes or not.

Then, we try to understand what occurred between the two tests by the analysis of data from the logbooks and a common synthesis written by one of the two CoPs. A particularly attention is paid to the problems of **usability and acceptability** which the learners encounter during the use of the PALETTE tools and services.

This part ends by a short synthesis and a conclusion about the essential elements resulting from this micro research.

7.6.10.1. Representations and declared practices before and after the trials

Preliminary remark: we indicate the percentage of answer to the item (ex: 30%) as well as the frequency i.e. the number of people (ex: 7 people on 14) having answered the question or having chosen this item. Even the number of people is lower than hundred, we expressed the data by percentage to support their legibility. Moreover, we also note the number of people who answered the question (ex: N=14) and which omitted to answer question (ex: O=0).

The TIC-EF CoP

1. Use of technological tools to produce documents

| | | |
|---|-----------|--------|
| <u>Question 1:</u> I use technological tools/services to produce documents. | | |
| N=14; O =0 | | |
| <u>Items</u> : Yes | | No |
| Pre | 100 14 | 0 0 |
| Post | 100 14 | 0 0 |

| | | |
|--|------|----|
| <u>Question 1b:</u> If so, which one and so to do what? | | |
| Answers cited by members in the open question and frequency of answers by item | | |
| N=14; O =0 | | |
| Word | Pre | 14 |
| | Post | 13 |
| Power Point | Pre | 10 |
| | Post | 11 |
| Excel | Pre | 8 |
| | Post | 7 |
| Hotmail – Msn messenger | Pre | 5 |
| | Post | 0 |
| Google | Pre | 2 |
| | Post | 2 |
| Facebook | Pre | 2 |
| | Post | 0 |
| Amaya | Pre | 0 |
| | Post | 10 |
| Sweetwiki | Pre | 0 |
| | Post | 1 |
| Freemind | Pre | 0 |
| | Post | 0 |

In the pretest, we can observe that all the members of this CoP (14/14) use technological tools to produce documents in particular those of Microsoft Office.

The use of Word, Power Point and Excel is reserved for the realization of homework (preparation of a lesson, production of reports...).

Internet (Hotmail, Google...) is used more for personal purposes like sending and reading mail or searching information on a topic.

Other tools and services were mentioned one by one of the members of CoPs.

The observations made in the pretest are also found in the post test. We remark only one difference. The Amaya tool is more frequently cited in the post-test in the tools used than in the pretest.

2. Use of technological tools to edit a document in a collaborative way

| | | |
|--|-------------|-------------|
| <p>Question 2: I use technological tools/services to edit documents in a collaborative way <i>N=14; O =0</i></p> | | |
| Items : | Yes | No |
| PRE | 21,42 3 | 78,58 11 |
| POST | 92,86 13 | 7,14 1 |
| <p>Question 2b: If so, which and so that to make? <i>N=13; O =0</i></p> | | |
| <p>Answers cited by members in the open question and frequency of answers by item</p> | | |
| Word | Pre | 1 |
| | Post | 0 |
| Power Point | Pre | 1 |
| | Post | 0 |
| Excel | Pre | 1 |
| | Post | 0 |
| Hotmail – Msn messenger | Pre | 1 |
| | Post | 0 |
| Google | Pre | 1 |
| | Post | 4 |
| Facebook | Pre | 1 |
| | Post | 0 |
| Outlook Express | Pre | 1 |
| | Post | 0 |
| Wikipédia | Pre | 2 |
| | Post | 1 |
| Amaya | Pre | 1 |
| | Post | 2 |
| Dreamweaver | Pre | 1 |
| | Post | 0 |
| Pinnacle | Pre | 1 |
| | Post | 0 |
| Wiki | Pre | 0 |
| | Post | 11 |
| Galanet | Pre | 0 |
| | Post | 1 |
| WebCT | Pre | 0 |
| | Post | 1 |
| Cope it | Pre | 0 |
| | Post | 0 |
| Forum | Pre | 0 |
| | Post | 1 |

In the pretest, contrary to the production of documents, **more of three quarters of the learners (11/14) do NOT use the technological tools when they produce documents in a collaborative way.** And when they use them, it is for **sharing** documents with others (not to produce).

In the post-test, the tendency is reversed: **almost the totality of the learners USE** the technological tools to produce documents in a collaborative way. The **“Wiki”** being the tool most frequently used.

Synthesis

For the first two questions, we retain that there are as many learners who use the technological tools to produce documents before and after the trials. There is one change in the tools used: the Amaya tool becomes a tool almost as cited as those of Microsoft Office.

On the other hand, an important evolution is to be highlighted in the collaborative edition. We pass from a poor percentage to a higher percentage of people who use the technological tools to edit in a collaborative way. The **“Wiki”** seems to be the service of reference associated with the collaborative edition following the implemented activities.

3. Degree of familiarity with the ICT

| <i>Questions 59-65: the use of ICT allows to:</i> <i>N=14; O=0</i> | | | | | | |
|--|-------------|------------------|----------------------------|-------------------|--------------------|-------------------------|
| (? = I do not understand the question) | | | | | | |
| <i>Items</i> | <i>Test</i> | <i>?</i> | <i>Completely disagree</i> | <i>Disagree</i> | <i>Agree</i> | <i>Completely agree</i> |
| 59. contribute to the capitalization of resources and knowledge | Pre | 7,14 1 | 0 0 | 0 0 | 71,42 10 | 21,42 3 |
| | Post | 7,14 1 | 0 0 | 0 0 | 85,71 12 | 7,14 1 |
| 60. manage ontologies | Pre | 100 14 | 0 0 | 0 0 | 0 0 | 0 0 |
| | Post | 35,71 5 | 0 0 | 0 0 | 64,29 9 | 0 0 |
| 61. manage folksonomies | Pre | 100 14 | 0 0 | 0 0 | 0 0 | 0 0 |
| | Post | 28,57 4 | 0 0 | 0 0 | 64,29 9 | 7,14 1 |
| 62. adopt standards offering the exchange of documents without problem | Pre | 0 0 | 0 0 | 14,28 2 | 85,72 12 | 0 0 |
| | Post | 7,14 1 | 0 0 | 7,14 1 | 71,43 10 | 14,29 2 |
| 63. conduct a debate generally leading to structure knowledge | Pre | 14,28 2 | 0 0 | 21,42 3 | 64,28 9 | 0 0 |
| | Post | 0 0 | 0 0 | 14,28 2 | 78,57 11 | 7,14 1 |
| 64. create a community to which identify myself | Pre | 7,14 1 | 7,14 1 | 42,86 6 | 42,86 6 | 0 0 |
| | Post | 0 0 | 0 0 | 7,14 1 | 85,72 12 | 7,14 1 |
| 65. increase the social interactions within a group | Pre | 0 0 | 0 0 | 0 0 | 100 14 | 0 0 |
| | Post | 0 0 | 0 0 | 7,14 1 | 71,43 10 | 21,43 3 |

For the pretest, as for the possibilities of the ICT, the totality of the TIC-EF's members (14/14) declares that their use increases the **social interactions**. Like another asset, a little less of the three quarters of the learners (10/14) also allot to the ICT the possibility of **capitalizing resources and knowledge**. From the same perspective, more of the three quarters (12/14) recognize that the recourse to technologies allows adopting **standards which enable them to exchange documents without problem**. Even if the percentages of answer differ a little, we observe the same tendencies in the post-test.

In addition before the trials, the learners seem more **divided** about the fact that the ICT offer the opportunity to create a community to which they identify themselves. But, at the post-test, they are 13 out of 14 has to be convinced about it.

Lastly, in a rather obvious way, two concepts are unknown by all the members: **ontology** and **folksonomy** in the pretest. And after a few months, they are more of two thirds to have adopted these terms in their vocabulary.

| <p><u>Questions 3-12:</u> Here are various suggestions, for each one, specify your degree of familiarity <i>(? = I do not understand the question)</i></p> | | | | | | |
|---|------|-------------------|--------------------|-------------------|--------------------|------------|
| Items | Test | ? | Never | Sometimes | Regularly | Always |
| 3. I use a word-processor to edit a collective document | Pre | 0 0 | 14,28 2 | 42,86 6 | 14,28 2 | 28,58 4 |
| | Post | 0 0 | 0 0 | 35,71 5 | 57,14 8 | 7,14 1 |
| 4. I use the mode "Follow-up of the modifications" in the word-processor | Pre | 0 0 | 92,86 13 | 7,14 1 | 0 0 | 0 0 |
| | Post | 7,14 1 | 35,71 5 | 42,86 6 | 7,14 1 | 7,14 1 |
| 5. I sometimes modify the style sheet of a document | Pre | 0 0 | 50 7 | 21,42 3 | 28,58 4 | 0 0 |
| | Post | 7,14 1 | 7,14 1 | 64,29 9 | 14,29 2 | 0 0 |
| 6. I have the reflex to use the "online help" | Pre | 0 0 | 64,28 9 | 7,14 1 | 28,58 4 | 0 0 |
| | Post | 0 0 | 42,86 6 | 50 7 | 7,14 1 | 0 0 |
| 7. I use a spreadsheet to manage statistical elements | Pre | 0 0 | 85,72 12 | 7,14 1 | 7,14 1 | 0 0 |
| | Post | 0 0 | 21,42 3 | 57,14 8 | 21,42 3 | 0 0 |
| 8. I have resort to the "templates" when I use a software of presentation assisted by computer | Pre | 28,58 4 | 28,58 4 | 35,72 5 | 0 0 | 7,14 1 |
| | Post | 7,14 1 | 21,42 3 | 50 7 | 14,29 2 | 7,14 1 |
| 9. I use ready-made models | Pre | 0 0 | 21,42 3 | 50 7 | 28,58 4 | 0 0 |
| | Post | 0 0 | 14,28 2 | 28,58 4 | 50 7 | 7,14 1 |
| 10. I use the navigation historic | Pre | 0 0 | 7,14 1 | 21,42 3 | 50 7 | 21,42 3 |
| | Post | 0 0 | 0 0 | 28,58 4 | 50 7 | 21,42 3 |
| 11. I annotate/tag my documents to classify and share them | Pre | 0 0 | 21,42 3 | 7,14 1 | 57,14 8 | 14,28 2 |
| | Post | 0 0 | 28,58 4 | 21,42 3 | 35,71 5 | 14,28 2 |
| 12. I use software to communicate and exchange my ideas with the others | Pre | 0 0 | 0 0 | 0 0 | 78,58 11 | 21,42 3 |
| | Post | 0 0 | 0 0 | 28,58 4 | 57,14 8 | 14,28 2 |
| 12.a. I surround which type of tool I use | | <i>Surrounded</i> | | | | |
| - E-mail | Pre | 13 | | | | |
| | Post | 13 | | | | |
| - Forum | Pre | 6 | | | | |
| | Post | 8 | | | | |
| - Blog | Pre | 7 | | | | |
| | Post | 4 | | | | |
| - Chat | Pre | 12 | | | | |
| | Post | 12 | | | | |
| - Videoconference | Pre | 4 | | | | |
| | Post | 4 | | | | |
| - Audioconference | Pre | 4 | | | | |
| | Post | 2 | | | | |

Before the implementation of the activities, we observe that the learners **do not use regularly the mentioned specific functionalities related to the software**. For instance: more half of the learners (9/12) do not use the online help; almost the totality of the CoP (13/14) does not use the mode “Follow-up the modifications”; half of the learners (7/14) never modifies a style sheet.... We venture the hypothesis that non-use of these functions or in low regularity is explained by ignorance and/or a superficial knowledge of the software.

In the post-test, we note a modification in the representations. Whereas the members of the CoP never used the specific functionalities, that starts to be present in the practices. At the beginning, more of two thirds of the learners did not use the online help, the same percentage of people use it now. The same tendency is observed about the follow-up of the modifications: we pass from only one person to more half of the learners who had recourse to this function. These two observations are not amazing since they match with the fact that the animators did not focus on these practices. With regard to the modification of the sheet style, whereas seven people never used it, there is only one after the trials who still does not use it.

In the pretest, the concept of use **templates** seems a little bit confusing. Compared to the others items this function appears difficult to understand by the members of the CoP. But, after the activities, only one person still does not understand this concept whereas they were beginning nearly a third of the learners before the trials. Moreover, we note an increase of 30% of use of the templates between the pretest (42,86%) and the post-test (71,42%).

At the pretest, when the members use the ICT, more of the three quarters (11/14) use them **to exchange with others**. Moreover, we find the **chat and the email** (services designed to communicate) as the most used tools. And, the members of the CoP **realize regularly elementary tasks** such as annotating a document (but it will appear that it was not understood as tagging documents), using ready-made models of design or the navigation historic. The results approximately are the same for the post-test.

Synthesis

If these questions limit the scope of the representation about ICT tools and their uses, they nevertheless provide some information that shows that before the trials, most of the TIC-EF CoP members had *not a very high degree of familiarity with regard to the ICT*. They used them in a *basic way*. But, there is an **evolution** in the declared practices; the level of ICT mastery seems a little bit to increase after the trials. The members use *most specific functionalities after the trials* except the tagging and the ready-made models whose uses do not increase whereas SweetWiki service and Amaya tool are supposed to encourage these practices by the users.

That it is for the pretest and the post-test, the learners always grant as much importance to the communication (**no change**). They mainly use the technological tools to *exchange* by *chat* and *email*. It is certainly why all of them agree with the idea that the ICT increase the social interactions.

4. Collaborative learning

| <i>Question 13: For me, the collaborative learning, it is...</i> | | | |
|--|------|--------------|----------|
| <i>N=14; O =0</i> | | | |
| Synthesis and reformulation of the CoP open answers | | | |
| In a “negotiations” perspective, it is build together by and with the others within a common project, purpose: “I build with others” | Pre | 42,86 | 6 |
| | Post | 14,29 | 2 |
| In a “mutual aid” perspective, it is share knowledge, experiment, documents, data... with others: “I give to others, I come to assistance with others” | Pre | 57,14 | 8 |
| | Post | 21,43 | 3 |
| Reciprocal/mutual learning by the confrontation of ideas “I exchange my point of view and I learn from you” | Pre | 0 | 0 |
| | Post | 21,43 | 3 |
| Management of project in group “I work with the others on an common interest/purpose” | Pre | 0 | 0 |
| | Post | 35,71 | 5 |

In the answers provided by the members in the pretest, two visions of the collaborative learning emerge. We have on the one hand, a vision of **“co-construction”** and on another hand, the vision of **sharing. The CoP members representation are enough shared between these two visions.** Sharing information is a little bit more cited. This can be put in parallel with the frequent recourse to the communication and exchange tools.

After the activities, we notice that the first two visions are always present but two new definitions appear. The first and most frequent vision is a **type of work by group starting from a common topic**. Contrary to the “negotiations” perspective, the topic of work comes not necessarily from the group. There is not necessarily a co-construction to obtain a consensus, but each one works with the others. The second facet which appeared in the post-test is **the “mutual learning” by confrontation of ideas**. It is while discussing, while exchanging on its experiments, its ideas that one learns.

| <u>Question 14: In general, I work in a collaborative way:</u> | | |
|--|------|-------------|
| N=12; O =2 | | |
| Items | Test | |
| Yes, with and without the ICT | Pre | 57,14 8 |
| | Post | 92,86 13 |
| Yes with the ICT | Pre | 14,28 2 |
| | Post | 7,14 1 |
| Yes without the ICT | Pre | 0 0 |
| | Post | 0 0 |
| No | Pre | 14,28 2 |
| | Post | 0 0 |

Two thirds of the CoP members (8/12) in the pretest and almost totality in the post-test work in a collaborative way with AND without the ICT. Thus, we can deduce that the different supports seem to be necessary and compatible. And even if the use of the ICT does not seem the only mode of functioning to work in a collaborative way, **no learner considers it without the using ICT.**

If we compare these data with the preceding results, we make the hypothesis that the “building” work would be carried out in face to face meeting (without the ICT) and that the “sharing” work would be carried out by email or chat (with help of the ICT).

| <i>Questions 16-28: the collaborative learning implicate</i> | | | | | | |
|---|-------------|----------|-----------------------------|---------------------------|---------------------------|-----------------------------|
| <i>N=14; O=0</i> | | | | | | |
| <i>(? = I do not understand the question)</i> | | | | | | |
| <i>Items</i> | <i>Test</i> | <i>?</i> | <i>Not at all agreement</i> | <i>Not agreement</i> | <i>Agreement</i> | <i>Completely agreement</i> |
| 16. an allocation of tasks by members of the team | Pre | 0 0 | 0 0 | 7,14 1 | 85,72 12 | 14,28 2 |
| | Post | 0 0 | 0 0 | 7,14 1 | 57,14 8 | 35,71 5 |
| 17. the definition of clear and precise stages | Pre | 0 0 | 0 0 | 0 0 | 57,14 8 | 42,86 6 |
| | Post | 0 0 | 0 0 | 7,14 1 | 57,14 8 | 35,71 5 |
| 18. the definition of deadlines | Pre | 0 0 | 0 0 | 7,14 1 | 50 7 | 42,86 6 |
| | Post | 0 0 | 0 0 | 0 0 | 64,29 9 | 35,71 5 |
| 19. meetings, regular contacts between all the participants | Pre | 0 0 | 0 0 | 0 0 | 50 7 | 50 7 |
| | Post | 0 0 | 0 0 | 0 0 | 64,29 9 | 35,71 5 |
| 20. autonomy of each person | Pre | 0 0 | 0 0 | 0 0 | 92,86 13 | 7,14 1 |
| | Post | 0 0 | 0 0 | 7,14 1 | 57,14 8 | 35,71 5 |
| 21. less time to produce a quality work than if I only did it | Pre | 0 0 | 0 0 | 71,42 10 | 28,58 4 | 0 0 |
| | Post | 0 0 | 7,14 1 | 64,18 9 | 14,28 2 | 14,28 2 |
| 22. let a total freedom to the group of learning (organization, work method...) | Pre | 0 0 | 7,14 1 | 64,18 9 | 28,58 4 | 0 0 |
| | Post | 0 0 | 7,14 1 | 57,14 8 | 28,58 4 | 0 0 |
| 23. a change in its work practices | Pre | 0 0 | 0 0 | 28,58 4 | 57,14 8 | 14,28 2 |
| | Post | 0 0 | 7,14 1 | 14,28 2 | 64,18 9 | 14,28 2 |
| 24. the use of the ICT to support the exchanges and the common production | Pre | 0 0 | 7,14 1 | 14,28 2 | 57,14 8 | 21,42 3 |
| | Post | 0 0 | 0 0 | 7,14 1 | 71,47 10 | 21,42 3 |
| 25. the presence of a mediator, a tutor | Pre | 0 0 | 7,14 1 | 7,14 1 | 64,18 9 | 21,42 3 |
| | Post | 0 0 | 0 0 | 14,28 2 | 71,47 10 | 14,28 2 |
| 26. work with people who one knows well to be effective | Pre | 0 0 | 21,42 3 | 50 7 | 28,58 4 | 0 0 |
| | Post | 0 0 | 7,14 1 | 71,47 10 | 21,42 3 | 0 0 |
| 27. have negotiated common rules of functioning | Pre | 0 0 | 0 0 | 0 0 | 71,42 10 | 28,58 4 |
| | Post | 0 0 | 0 0 | 0 0 | 57,14 8 | 42,86 6 |
| 28. establish precise roles for each one | Pre | 0 0 | 0 0 | 7,14 1 | 71,42 10 | 21,42 3 |
| | Post | 0 0 | 0 0 | 7,14 1 | 50 7 | 42,86 6 |

At the pretest, the quasi totality of this CoP declares that the collaborative learning implies a **definition of the precise roles** and an **allocation of the functions** by the participants. In the same proportion, they also admit the need for **negotiating functioning rules** and for **specifying clear stages** while leaving certain **autonomy to each one (but not a total freedom)**. Moreover, almost all the learners agree with the fact that the collaborative learning **requires to define deadlines** and to **maintain regular contacts** with the other members. Those contacts are managed by **the presence of a mediator** or a tutor as well as supported by **the use of the ICT**. Even if the percentages of answers are distributed a little bit differently between the items “agree and “completely agree”, we obtain the same observations in the post-test.

On the contrary of the precedent items, less of the three quarters of learners mention in the pretest **that** the production of a good quality collaborative work does **not take less time** than an individually work and that it is **not essential to work only with familiar people to be effective**. These tendencies are always present in the post-test even if some of them seem slightly reinforced or slightly weakened.

Let us venture some hypothesis on relations between different results. Before the activities, we thought that the requirements of the collaborative learning represented reasons for which the members of the CoP did not produce documents in a collaborative way using the ICT (or very little) and also because they had a weak degree of familiarity with the ICT. In the post-test, we find again these connections. Indeed, notably thanks to the trials and the use of PALETTE tools and services, the learners developed a higher ICT mastery and now, there is a greater number of learners who produce documents in a collaborative way with ICT. Moreover, we note also an increase in the answers to the question (quasi all members) relating to the collaborative learning with and without the ICT.

Synthesis

We retain that at the beginning, this CoP was aware of the constraints which imply the collaborative learning. **The trials came at the same time to widen and specify the representations of the learners with regard to this type of learning**. Their points of views are *wider than before* since we see the emergence of two new visions about the collaborative learning. The trials allow to the learners living this experiment; each one having lived and perceived it differently. Their visions are more *specific* because the activities also allow them to discover all dimensions of the collaborative learning; dimensions found in the answers of the members at the post-test.

Thus, even if these results cannot be only allotted to the trials, we can say that the use of PALETTE tools and **services** contribute to influence the representations of the learners about the collaborative learning.

5. Perceptions about the production of documents and collaborative edition

| <p><i>Question 15: Here a series of adjectives. Put mark in maximum 5 (by column) which make you think of the collaborative edition and the production of documents with the ICT.</i></p> <p><i>N=14; O=0</i></p> | | | |
|---|-------------------------|----|-----------------------|
| Items | Production of documents | | Collaborative edition |
| Effective | Pre | 8 | 1 |
| | Post | 13 | 7 |
| Innovative | Pre | 0 | 4 |
| | Post | 0 | 9 |
| Possible | Pre | 2 | 0 |
| | Post | 3 | 5 |
| Unknown | Pre | 0 | 3 |
| | Post | 0 | 1 |
| Time consuming | Pre | 1 | 10 |
| | Post | 0 | 1 |
| Interesting | Pre | 4 | 3 |
| | Post | 11 | 7 |
| Enhancive | Pre | 3 | 0 |
| | Post | 1 | 5 |
| Constructive | Pre | 4 | 4 |
| | Post | 6 | 10 |
| Useless | Pre | 0 | 0 |
| | Post | 0 | 0 |
| Constraining, restrictive | Pre | 0 | 7 |
| | Post | 0 | 1 |
| Sharable | Pre | 3 | 4 |
| | Post | 11 | 8 |

The data of the table for the pretest provide us two interesting findings. First of all, the highest frequency (by 8 members) in the adjectives is associated with **“Effective”** for the **production of documents**. Having a positive connotation, we can think that the learners have a favorable perception about this task. In the post-test, we find the same adjective but we have also **“Interesting”** and **“Sharable”**.

Then, before the activities, the members of the CoP chose the adjectives **“Time consuming”** and **“Constraining”** with a higher frequency (compared to other adjectives) to qualify the **collaborative edition**. But, the adjectives are not the same for the post-test. The learners choose in first the **“Constructive”** adjective which has a connotation more positive than the others. The **“Time consuming”** and **“Constraining”** adjectives are almost not chosen after the trials.

Synthesis

In the pretest, there are more negative perceptions as for the collaborative edition than for the production of documents. The trials made evolve the representations of the learners because the positive perception is reinforced for the production of documents and the negative connotation is disappeared for the collaborative edition.

6. Representations about the collaborative edition

| <i>Questions 29-36: A software of collaborative edition</i> | | | | |
|---|-------------|--------------------|---------------------------|--------------------|
| <i>N=14; O=0</i> | | | | |
| <i>(? = I do not understand the question)</i> | | | | |
| <i>Items</i> | <i>Test</i> | <i>?</i> | <i>True</i> | <i>False</i> |
| 29. allows creating a document with several in a synchronous way | Pre | 50 7 | 50 7 | 0 0 |
| | Post | 7,14 1 | 50 7 | 42,86 6 |
| 30. allows modifying an existing document, whatever is the author | Pre | 14,28 2 | 50 7 | 35,72 5 |
| | Post | 0 0 | 71,43 10 | 28,58 4 |
| 31. allows reifying of individual knowledge | Pre | 71,42 10 | 28,58 4 | 0 0 |
| | Post | 14,28 2 | 78,57 11 | 7,14 1 |
| 32. allows finalizing a diffusable document | Pre | 35,72 5 | 64,28 9 | 0 0 |
| | Post | 7,14 1 | 78,57 11 | 14,28 2 |
| 33. imply to give up partly the property of its ideas | Pre | 71,42 10 | 14,28 2 | 14,28 2 |
| | Post | 0 0 | 42,86 6 | 57,14 8 |
| 34. require to agree to the sharing of unfinished something | Pre | 64,28 9 | 28,58 4 | 7,14 1 |
| | Post | 0 0 | 78,57 11 | 14,28 2 |
| 35. at least require the presence of all authors at one time | Pre | 42,86 6 | 14,28 2 | 42,86 6 |
| | Post | 7,14 1 | 50 7 | 42,86 6 |
| 36. require an investment in time lower than an individual production | Pre | 14,28 2 | 42,86 6 | 42,86 6 |
| | Post | 7,14 1 | 7,14 1 | 85,71 12 |

| <i>Questions 51-53: A Web editor [(X)HTML]allows creating a document</i> | | | | |
|--|-------------|-------------------|--------------------|-------------------|
| <i>N=14; O=0</i> | | | | |
| <i>(? = I do not understand the question)</i> | | | | |
| <i>Items</i> | <i>Test</i> | <i>?</i> | <i>True</i> | <i>False</i> |
| 51. editable by several people | Pre | 21,43 3 | 78,57 11 | 0 0 |
| | Post | 0 0 | 85,71 12 | 14,28 2 |
| 52. accessible by anybody | Pre | 0 0 | 71,43 10 | 28,57 4 |
| | Post | 0 0 | 64,28 9 | 35,72 5 |
| 53. modifiable only by authorized/permitted people | Pre | 64,28 9 | 35,72 5 | 0 0 |
| | Post | 0 0 | 78,57 11 | 7,14 1 |

First of all, it is important to announce that the answers to the questions cannot be distinct in a dichotomic way. Indeed, they depend on many parameters. The purpose of the “true/false” items is to spark off questionings and cause thinking among members of the CoP.

Nevertheless, by analyzing the comments in the pretest, we note that at this stage of their learning, **nearly three quarters of items (8/11) are misunderstood by TIC-EF CoP**. In other words, the members are not yet able to provide a moderated and accurate answer on the various elements constituting the collaborative edition using a software or **with a weak certitude** (examples of comments: “I am not certain”, “I do not know (what it is)”; “Supposition ”...).

In the post-test, we observe that the learners **are able to provide an answer to the questions**. The activities on the collaborative edition thus allowed the students to more know some on the collaborative edition.

7. Representations about the production of documents

| <i>Questions 41-50;54-55: A Web editor [(X)HTML]allows creating a document</i> | | | | |
|--|-------------|-------------|---------------------------|-----------------------|
| <i>N=14; O=0</i> | | | | |
| <i>(? = I do not understand the question)</i> | | | | |
| <i>Items</i> | <i>Test</i> | <i>?</i> | <i>True</i> | <i>False</i> |
| 41. where it directly sees the result of what one publishes (WYSIWYG) | Pre | 35,71 5 | 42,86 6 | 21,43 3 |
| | Post | 14,29 2 | 71,43 10 | 14,29 2 |
| 42. which respects standards | Pre | 35,71 5 | 64,29 9 | 0 0 |
| | Post | 0 0 | 100 14 | 0 0 |
| 43. interpretable and displayable by any navigator | Pre | 28,57 4 | 64,29 9 | 7,14 1 |
| | Post | 0 0 | 85,71 12 | 14,29 2 |
| 44. of which elements (paragraph, table, list of items...) are coded in a transparent way | Pre | 78,57 11 | 0 0 | 21,43 3 |
| | Post | 21,43 3 | 50 7 | 28,57 4 |
| 45. in which one can allot a semanICT to various elements | Pre | 14,29 2 | 71,43 10 | 14,29 2 |
| | Post | 14,29 2 | 71,43 10 | 14,29 2 |
| 46. reusable in a document edited via a word-processing without losing its layout of page | Pre | 35,71 5 | 28,57 4 | 35,71 5 |
| | Post | 0 0 | 50 7 | 50 7 |
| 47. which guarantees the perennality of its contents (not lost because of versions evolution in the edition software) | Pre | 64,29 9 | 21,43 3 | 14,29 2 |
| | Post | 14,29 2 | 78,57 11 | 7,14 1 |
| 48. readable on various types of supports (computer, PDA, phone mobile.) | Pre | 14,29 2 | 71,43 10 | 14,29 2 |
| | Post | 14,29 2 | 78,57 11 | 7,14 1 |
| 49. which integrates multi-media elements | Pre | 35,71 5 | 64,29 9 | 0 0 |
| | Post | 7,14 1 | 92,86 13 | 0 0 |
| 50. which allows exchanging and reusing data with help (in) of the other softwares (without using the function “copy/paste”) | Pre | 28,57 4 | 57,14 8 | 0 0 |

| | | | | |
|--|------|-------------------------|---------------------------|--------|
| | Post | 28,57 4 | 57,14 8 | 0 0 |
| 54. including a system of annotations (tags) | Pre | 57,14 8 | 42,86 6 | 0 0 |
| | Post | 7,14 1 | 85,71 12 | 0 0 |
| 55. which allows creating links towards another Web page | Pre | 14,29 2 | 85,71 12 | 0 0 |
| | Post | 0 0 | 92,86 13 | 0 0 |

In this table, we notice the same tendencies as for the collaborative edition. In the pretest, we note that for 7 items out of 12, the majority of the CoP members have a correct idea production of document by a web editor. For the others items, they hesitate between “True” and “I do not know or do not understand the question”.

In the post test, the learners have an opinion for each question. They do not declare more that they do not understand them. Compared to question of the pretest, the members of the CoP have a “correct” vision about the production of documents, but in more for each item, the percentage of people giving the awaited answer is higher.

Synthesis

For the production of documents and the collaborative edition, we retain an important evolution about the understood items and the expected answers. The trials allows to the learners to become more competent in this two tasks. In other words, many learning come out from the use of the PALETTE tools/services. But, we think that these assets come more from the teaching activities than tools in themselves. In other words, the learnings resulting from the trials strongly depend on the way in which we exploit the PALETTE tools/services. It is important also to recall that other tools were exploited in the training. Therefore, it is difficult to allot its results only to the use of the PALETTE tools/services. We recognize that they take part in it.

The TIC-FA CoP

1. Use of technological tools to produce documents

| <i>Question 1: I use technological tools/services to produce documents.</i> | | |
|---|-------------------|-----------------|
| <i>N =9; O =0</i> | | |
| <i>Items :</i> Yes | | No |
| Pre | 100 (9) | 0 (0) |
| Post | 100 10 | 0 0 |

| <i>Question 1b: If so, which and so that to make?</i> | | |
|---|------|----------|
| <i>Answers cited by members in the open question and frequency of answers by item</i> | | |
| <i>N =9; O =0</i> | | |
| Word | Pre | 8 |
| | Post | 9 |
| Power Point | Pre | 6 |
| | Post | 8 |
| Excel | Pre | 4 |
| | Post | 6 |
| Internet (Hotmail, Mozilla, Firefox...) | Pre | 5 |
| | Post | 0 |
| Gimp2 | Pre | 1 |
| | Post | 1 |
| Photoshop | Pre | 1 |
| | Post | 1 |
| Photobase | Pre | 1 |
| | Post | 0 |
| Encarta | Pre | 1 |
| | Post | 0 |
| SweetWiki | Pre | 0 |
| | Post | 2 |
| Amaya | Pre | 0 |
| | Post | 6 |
| Freemind | Pre | 0 |
| | Post | 4 |
| Meda | Pre | 0 |
| | Post | 1 |

In the pretest, the totality of TIC-FA's members use technological tools to produce documents in particular those of **Microsoft Office**.

The use of Word, PowerPoint and Excel is reserved for the **realization of academic works** (thesis, notes, synthesis of courses, reports production, etc.) and in minor for **private tasks** like send curriculum vitae, keep a diary or traces of reunions.

Technological tools are also used to **realize video/sound/picture montages or to retouch photos**.

Internet (Hotmail...) is essentially used for **electronic mail or research information on a topic**.

In the post-test, in addition to confirming their practices of use, the members of the CoP add Amaya and FreeMind to the tools that they use. We venture the hypothesis that these tools entered in their practices after they discovered their existence and their functionalities during the course.

2. Use of technological tools to edit a document in a collaborative way

| <i>Question 2: I use technological tools/services to edit documents in a collaborative way</i> | | |
|--|---------------------|--------------|
| <i>N =9; O =0</i> | | |
| Items : | Yes | No |
| Pre | 55,56 (5) | 44,44 (4) |
| Post | 100 10 | 0 0 |

| <i>Question 2b: If so, which and so that to make?</i> | | |
|--|------|---|
| Answers cited by members in the open question and frequency of answers by item | | |
| <i>N =9; O =0</i> | | |
| <i>Esprit</i> | Pre | 1 |
| | Post | 0 |
| <i>Msn- Hotmail</i> | Pre | 1 |
| | Post | 0 |
| <i>Wikipédia</i> | Pre | 1 |
| | Post | 0 |
| <i>Emule</i> | Pre | 1 |
| | Post | 0 |
| <i>Omnipro</i> | Pre | 1 |
| | Post | 0 |
| <i>Ultragenda</i> | Pre | 1 |
| | Post | 0 |
| <i>IRC</i> | Pre | 1 |
| | Post | 0 |
| <i>Googledoc</i> | Pre | 0 |
| | Post | 7 |
| <i>WebCT</i> | Pre | 0 |
| | Post | 1 |
| <i>Copelt</i> | Pre | 0 |
| | Post | 1 |
| <i>SweetWiki</i> | Pre | 0 |
| | Post | 7 |
| <i>Word</i> | Pre | 0 |
| | Post | 1 |
| <i>Amaya</i> | Pre | 0 |
| | Post | 1 |

Contrary to the TIC-EF CoP, **before the trials the majority of the students (5/9) use the technological tools when they must produce in a collaborative way**. When they use them, it is especially to **discuss** and **debate**, for exchanging practices or making decisions about a collaborative work. But, as for the other CoP, it is not to produce a document. The technological tools are used at the stage of negotiations before the phase where the authors produce together.

As for the post test, it shows us that following the courses, the majority of the members of TIC-FA CoP use mainly SweetWiki and Google.Docs to edit a document in a collaborative way.

Synthesis

For the first two questions, we retain that there are as many learners who use the technological tools to produce documents than before and after the trials. But, an **evolution** is to be highlighted in the collaborative edition. The percentage of people who use the technological tools to edit in a collaborative way doubled.

3. Degree of familiarity with the ICT

| <i>Questions 59-65: the use of ICT allows to:</i> | | | | | | |
|--|-------------|-------------------|-----------------------------|----------------------|-------------------|-----------------------------|
| <i>N=9; O =0</i> | | | | | | |
| <i>(? = I do not understand the question)</i> | | | | | | |
| <i>Items</i> | <i>Test</i> | <i>?</i> | <i>Not at all agreement</i> | <i>Not agreement</i> | <i>Agreement</i> | <i>Completely agreement</i> |
| 59. contribute to the capitalization of resources and knowledge | Pre | 11,11 1 | 0 0 | 0 0 | 88,89 8 | 11,11 1 |
| | Post | 0 0 | 0 0 | 0 0 | 70 7 | 30 3 |
| 60. manage ontologies | Pre | 77,78 7 | 0 0 | 0 0 | 11,11 1 | 11,11 1 |
| | Post | 20 2 | 0 0 | 0 0 | 70 7 | 10 1 |
| 61. manage folksonomies | Pre | 66,67 6 | 0 0 | 0 0 | 22,22 2 | 11,11 1 |
| | Post | 20 2 | 0 0 | 0 0 | 70 7 | 10 1 |
| 62. adopt standards offering the exchange of documents without problem | Pre | 11,11 1 | 0 0 | 0 0 | 77,78 7 | 11,11 1 |
| | Post | 0 0 | 0 0 | 0 0 | 70 7 | 30 3 |
| 63. conduct a debate generally leading to a structuring of knowledge | Pre | 11,11 1 | 0 0 | 0 0 | 66,67 6 | 11,11 1 |
| | Post | 0 0 | 0 0 | 0 0 | 90 9 | 10 1 |
| 64. create a community to which be identified | Pre | 11,11 1 | 0 0 | 0 0 | 77,78 7 | 11,11 1 |
| | Post | 0 0 | 0 0 | 10 1 | 60 6 | 30 3 |
| 65. increase the social interactions within a group | Pre | 11,11 1 | 0 0 | 0 0 | 66,67 6 | 22,22 2 |
| | Post | 0 0 | 10 1 | 0 0 | 70 7 | 20 2 |

Firstly, the concepts of **ontology** and **folksonomy** seem problematic for the CoP in the items of the pretest. We notice in the post-test that these terms are understood by 70% of the learners.

Regards to other items, **whereas the quasi majority of CoP declare that the use of ICT offers various possibilities, they are even more numerous to affirm it in the post-test.** They think that the ICT allow to contribute to the capitalization of resources and knowledge, adopt standards offering the exchange of documents without problem, conduct a debate generally leading to a structuring of knowledge, create a community to which be identified and increase the social interactions within a group. So, they are almost all of agreement with the proposed items.

| <i>Questions 3-12: Here various suggestions, for each one, specify your degree of familiarity</i> <i>N=9; O =0</i> <i>(? = I do not understand the question)</i> | | | | | | |
|--|-------------|-------------------|----------------|------------------|------------------|----------------|
| <i>Items</i> | <i>Test</i> | <i>?</i> | <i>Never</i> | <i>Sometimes</i> | <i>Regularly</i> | <i>Always</i> |
| 3. I use the word-processor to edit a collective document | Pre | 0 0 | 0 0 | 33,33 3 | 55,56 5 | 11,11 1 |
| | Post | 0 0 | 0 0 | 10 1 | 90 9 | 0 0 |
| 4. I use the mode "Follow-up of the modifications" in the word-processing | Pre | 44,44 4 | 55,56 5 | 0 0 | 0 0 | 0 0 |
| | Post | 0 0 | 60 6 | 30 3 | 10 1 | 0 0 |
| 5. It sometimes happens to modify the style sheet of a document | Pre | 22,22 2 | 11,11 1 | 66,67 6 | 0 0 | 0 0 |
| | Post | 10 1 | 20 2 | 60 6 | 10 1 | 0 0 |
| 6. I have the reflex "online help" | Pre | 0 0 | 55,56 5 | 44,44 4 | 0 0 | 0 0 |
| | Post | 0 0 | 0 0 | 90 9 | 10 1 | 0 0 |
| 7. I use the spreadsheet to manage statistical elements | Pre | 33,33 3 | 55,56 5 | 11,11 1 | 0 0 | 0 0 |
| | Post | 0 0 | 20 2 | 50 5 | 20 2 | 10 1 |
| 8. I have resort to the "templates" when I use a software of presentation assisted by computer | Pre | 77,78 7 | 11,11 1 | 0 0 | 11,11 1 | 0 0 |
| | Post | 10 1 | 50 5 | 20 2 | 20 2 | 0 0 |
| 9. I use ready-made models of design | Pre | 0 0 | 11,11 1 | 22,22 2 | 66,67 6 | 0 0 |
| | Post | 0 0 | 0 0 | 50 5 | 30 3 | 20 2 |
| 10. I use the navigation historic | Pre | 11,11 1 | 22,22 2 | 0 0 | 44,44 4 | 22,22 2 |
| | Post | 0 0 | 0 0 | 10 1 | 60 6 | 30 3 |
| 11. I annotate/tag my documents to classify and share them | Pre | 11,11 1 | 11,11 1 | 11,11 1 | 55,56 5 | 11,11 1 |
| | Post | 0 0 | 10 1 | 20 2 | 40 4 | 30 3 |
| 12. I use software to communicate and exchange my ideas with the others | Pre | 0 0 | 0 0 | 22,22 2 | 66,67 6 | 11,11 1 |
| | Post | 0 0 | 0 0 | 10 1 | 50 5 | 40 4 |
| 12.a. I surround which type of tool I use | Test | <i>Surrounded</i> | | | | |
| - E-mail | Pre | 8 | | | | |
| | Post | 10 | | | | |
| - Forum | Pre | 5 | | | | |
| | Post | 8 | | | | |
| - Blog | Pre | 4 | | | | |
| | Post | 8 | | | | |
| - Chat | Pre | 7 | | | | |
| | Post | 9 | | | | |
| - Videoconference | Pre | 2 | | | | |
| | Post | 3 | | | | |
| -Audioconference | Pre | 4 | | | | |
| | Post | 4 | | | | |

When we observe the second table at the pretest, we note that **more half of the members of TIC-FA use some more particular functionalities of the software**. Indeed, the learners declare that they very regularly (even always) use the **word-processor to edit a collective document** and the software to **communicate and exchange** their ideas with others without forgetting to **annotate their documents** to classify them and to share them. Moreover, in the same proportion, they say to **use ready-made models** and the **historic of navigation**. In a less frequent way, approximately two thirds of the students **modify sometimes the style sheet** of a document. The “**follow-up of the modifications**”, the “**online help**” or the use of “**a spreadsheet**” are functions not used by at least half of the members. **Three concepts** also draw the attention since those seem misunderstood or cause reflections among members: the **spreadsheet**, the **templates** and the **follow-up of the modifications**. This result would explain certainly their weak use (quasi non-existent frequency compared to the other functions). As for the most used tools, we find for TIC-FA CoP the **email** and the **chat**. But, even if the frequency of use is inferior, the members of this community have recourse also to other tools (forum, blog, audioconference) and, even more tools than those of TIC-EF CoP.

The post-test shows us different results. First of all there are the functions already used by the members of the CoP which are still more present than in the pretest. It is the case notably for « the word-processor » to edit a collective document. Five people had answered in the pretest that they regularly used it, whereas they were nine in the post test. We also observe progressions about the use of the navigation historic, the tags and the use of software to communicate the ideas with others.

Then, certain ICT functions were never used before the trials but are used now. For examples, the online help was used sometimes by a little less than half of learners and in the post test, is used by almost the totality of them but also for the use of spreadsheet to manage statistical elements which passes to him from 11% to 50%.

Finally, there exists a last category of results. There are unknown functions or not often used (follow-up of the modifications and the templates) during the pretest and which are it in the post test. A little less than half of learners start to use them in various frequencies.

Synthesis

Before the trials, the TIC-FA CoP members have medium degree of familiarity with regard to the ICT: they use them but not in an intensive way. These learners have a broader vision of the ICT uses than TIC-EF CoP and do not restrict it to exchange documents and to interact with others. We note that they have a larger view about what the use of the ICT can offer. And, the trials reinforced this tendency. Indeed, there is an **evolution** in the declared practices; the level of ICT mastery seems to increase a little after the use of PALETTE tools and services. The members use most specific functionalities after the trials or continue to use the same functions but most frequently.

4. Collaborative learning

| <u>Question 13: For me, the collaborative learning, it is...</u> | | | |
|---|-------------|--------------|----------|
| Synthesis and reformulation of the CoP open answers <i>Pretest N=9; O=0 Post-test N=10; O=1</i> | | | |
| Reciprocal/ mutual learning by the confrontation of ideas “I exchange my point of view and I learn from you” | Pre | 55,56 | 5 |
| | Post | 40 | 4 |
| Management of project in group “I work with the others on a common interest/purpose” | Pre | 44,44 | 4 |
| | Post | 50 | 5 |

In the pretest and the post-test, two keywords appear systematically in each definition of the collaborative learning according to the answers of the members. Even if the difference is not obvious, the majority of the learners define this concept as an exchange of **ideas** with an aim of **learning with the others**. This observation can be put in parallel with the use of the technological tools during a collaborative production essentially to debate and discuss. The other members see the collaborative learning as a **project** conducted in **group** where the people work together around a shared interest. There is not really a prevalent vision of this concept.

By comparing the representations of the two communities in the pretest, we notice that the sharing for TIC-FA CoP is centered mainly on the **ideas** whereas TIC-EF CoP it is more on the documents, knowledge and experiments. Moreover, we do not find in a so obvious way the side “co-construction” in the TIC-FA CoP as in the other CoP. But, we have the notion of **project** which is common to the two CoPs. And in the post-test, the representations of the two CoPs seem to join and be more homogeneous.

| <u>Question 14: In general, I work in a collaborative way:</u> | | | |
|--|------|--------------|---|
| <i>N=9; O=0</i> | | | |
| Items | Test | | |
| Yes, with and without the ICT | Pre | 77,78 | 7 |
| | Post | 90 | 9 |
| Yes with the ICT | Pre | 0 | 0 |
| | Post | 10 | 1 |
| Yes without the ICT | Pre | 11,11 | 1 |
| | Post | 0 | 0 |
| No | Pre | 11,11 | 1 |
| | Post | 0 | 0 |

More of the three quarters in the pretest and almost the totality in the post-test of the CoP TIC-FA's members work in a collaborative way with AND without the ICT. Like TIC-EF CoP, the two processes seem complementary and inseparable; each one being used in alternation and having a particular function.

| <i>Questions 16-28: the collaborative learning implicate</i> <i>Pretest N=9; O=0 Post-test N=10; O=0</i> (? = I do not understand the question) | | | | | | |
|---|-------------|-------------|-----------------------------|----------------------|-------------------|-----------------------------|
| <i>Items</i> | <i>Test</i> | <i>?</i> | <i>Not at all agreement</i> | <i>Not agreement</i> | <i>Agreement</i> | <i>Completely agreement</i> |
| 16. an allocation of tasks by members of the team | Pre | 0 0 | 0 0 | 22,22 2 | 66,67 6 | 11,11 1 |
| | Post | 0 0 | 0 0 | 40 4 | 50 5 | 10 1 |
| 17. the definition of clear and precise stages | Pre | 0 0 | 11,11 1 | 11,11 1 | 44,44 4 | 33,33 3 |
| | Post | 0 0 | 10 1 | 20 2 | 60 6 | 10 1 |
| 18. the definition of deadlines | Pre | 0 0 | 0 0 | 0 0 | 66,67 6 | 33,33 3 |
| | Post | 0 0 | 10 1 | 0 0 | 70 7 | 20 2 |
| 19. meetings, regular contacts between all the participants | Pre | 0 0 | 0 0 | 22,22 2 | 55,56 5 | 22,22 2 |
| | Post | 0 0 | 0 0 | 10 1 | 50 5 | 40 4 |
| 20. autonomy of each person | Pre | 0 0 | 11,11 1 | 0 0 | 66,67 6 | 22,22 2 |
| | Post | 0 0 | 0 0 | 10 1 | 70 7 | 20 2 |
| 21. less time to produce a quality work than if I only did it | Pre | 0 0 | 0 0 | 55,56 5 | 22,22 2 | 22,22 2 |
| | Post | 0 0 | 10 1 | 70 7 | 10 1 | 10 1 |
| 22. let a total freedom to the group of learning (organization, work method...) | Pre | 0 0 | 22,22 2 | 44,44 4 | 33,33 3 | 0 0 |
| | Post | 0 0 | 0 0 | 70 7 | 20 2 | 10 1 |
| 23. a change in its work practices | Pre | 0 0 | 0 0 | 33,33 3 | 33,33 3 | 33,33 3 |
| | Post | 0 0 | 0 0 | 10 1 | 60 6 | 30 3 |
| 24. the use of the ICT to support the exchanges and the common production | Pre | 11,111 1 | 0 0 | 0 0 | 77,78 7 | 11,11 1 |
| | Post | 0 0 | 0 0 | 10 1 | 50 5 | 30 3 |
| 25. the presence of a mediator, a tutor | Pre | 0 0 | 0 0 | 22,22 2 | 66,67 6 | 11,11 1 |
| | Post | 0 0 | 10 1 | 20 2 | 50 5 | 20 2 |
| 26. work with people who one knows well to be effective | Pre | 0 0 | 22,22 2 | 22,22 2 | 44,44 4 | 11,11 1 |
| | Post | 0 0 | 10 1 | 70 7 | 20 2 | 0 0 |
| 27. have negotiated common rules of functioning | Pre | 0 0 | 0 0 | 11,11 1 | 77,78 7 | 11,11 1 |
| | Post | 0 0 | 0 0 | 20 2 | 40 4 | 40 4 |
| 28. establish precise roles for each one | Pre | 0 0 | 11,11 1 | 22,22 2 | 55,56 5 | 11,11 1 |
| | Post | 0 0 | 0 0 | 20 2 | 70 7 | 10 1 |

Before the trials, a large part of the CoP members (at least two thirds) agrees or completely agrees with a lot of proposals about implications generated by the collaborative training. Indeed, they admit that this type of learning requires distributing the tasks, defining clear stages, negotiating common rules of functioning and establishing roles for each one. According to the same proportion of answers, the collaborative learning also implies the presence of a mediator or tutor, the recourse to the ICT, the definition of deadlines and regular contacts between the participants. The number of people having answered in this manner remains quasi similar between the pre and the post tests.

However, in the pretest, some items make exception. In fact, even if almost the totality of the members declares in the precedent question that it is important to **let autonomy to each person**, nearly two thirds of the members mention that this freedom should not be total. Moreover, there are almost as many learners who say than a collaborative work takes **less time** than a work completed individually than those which say the opposite. It is the same for the importance attached to **familiarity of the people** with whom one works to be effective. The results for these three items are the same in the post-test except they are more of two thirds to declare it. Lastly, although more majority of the TIC-FA's members say in the pretest that the collaborative learning represents a **change in the practices**, there is always a third of the students who think the contrary. And after having experimented the collaborative learning with the PALETTE tools and services, it remains only 10% of the learners who mention it.

Synthesis

We observe that there are **not big changes between the pre and the post tests for TIC-FA CoP about the collaborative learning process.** In fact, the CoP TIC-FA plans to work together using the ICT either to produce documents or to edit in a collaborative way. This community **is enough shared to define the concept of collaborative learning** between mutual learning with exchange of ideas and project managed in group. The members are aware of the constraints demanded by the collaborative learning. This explains certainly why they do not use only the ICT to operate in group or to debate; they also employ several functioning processes (with or without ICT) to satisfy these requirements. So, after the use of some PALETTE tools and services, there is certainly an evolution but in the same direction. It is a small accentuation of the tendencies of the pretest; the trials only reinforced the (pre)skills of the learners.

5. Perceptions about the production of documents and collaborative edition

| <i>Question 15: Here a series of adjectives. Put mark in maximum 5 (by column) which make you think of the collaborative edition and the production of documents with the ICT.</i> | | | |
|--|------|-------------------------|-----------------------|
| Pretest N=9 ; O=0 | | Post-test N=10 ; O=0 | |
| Items | | Production of documents | Collaborative edition |
| Effective | Pre | 9 | 4 |
| | Post | 10 | 4 |
| Innovative | Pre | 2 | 8 |
| | Post | 3 | 9 |
| Possible | Pre | 8 | 5 |
| | Post | 5 | 7 |
| Unknown | Pre | 0 | 4 |
| | Post | 0 | 0 |
| Time consuming | Pre | 5 | 2 |
| | Post | 0 | 1 |
| Interesting | Pre | 9 | 9 |
| | Post | 7 | 6 |
| Enhancive | Pre | 1 | 5 |
| | Post | 4 | 1 |
| Constructive | Pre | 8 | 5 |
| | Post | 8 | 9 |
| Useless | Pre | 1 | 0 |
| | Post | 0 | 0 |
| Constraining, restrictive | Pre | 3 | 2 |
| | Post | 0 | 3 |
| Sharable | Pre | 8 | 9 |
| | Post | 4 | 6 |

In the pretest, even if the two concepts evoke different adjectives at the members from TIC-FA CoP, we observe that **the qualifiers are relatively positive**. For the production of documents, the selected words are “Effective”, “Possible”, “Interesting”, “Constructive” and “Sharable”. The learners choose “Innovative”, “Interesting” and “Sharable” when they refer to the collaborative edition. These results highlight the fact that **the collaborative edition is perceived in a more positive way by TIC-FA CoP than TIC-EF CoP**. In other words, the latter CoP has more resentment with respect to the collaborative edition than TIC-FA CoP.

Moreover, for the pretest, we find again this difference in the question (N°2) about the collaborative edition with the use or not of technological tools. For recall, more of the three quarters of the TIC-EF’s members do not use the ICT to write with many people compared to a little more half of the TIC-FA’s members which do it.

In the post-test, we observe the same adjectives linked to the concepts even if the frequencies different a little.

Synthesis

For the TIC-FA CoP, there is no particular evolution about the perceptions about the collaborative edition and the production of documents.

At the same time, we can affirm that the problems of usability of tools or their level of development negatively do not influence perceptions of the learners when they produce documents and edit in a collaborative way.

6. Representations about the collaborative edition

| <i>Questions 29-36: A software of collaborative edition</i> | | | | |
|--|-------------|----------------------|--------------|--------------|
| Pretest N=9 ; O=0 | | Post-test N=10 ; O=0 | | |
| (? = I do not understand the question) | | | | |
| <i>Items</i> | <i>Test</i> | <i>?</i> | <i>True</i> | <i>False</i> |
| 29. allows creating a document with several in a synchronous way | | 55,56 | 44,44 | 0 |
| | Pre | 5 | 4 | 0 |
| | Post | 0 | 10 | 0 |
| 30. allows modifying an existing document, whatever is the author | | 11,11 | 55,56 | 33,33 |
| | Pre | 1 | 5 | 3 |
| | Post | 0 | 7 | 30 |
| 31. allows reifying of individual knowledge | | 77,78 | 22,22 | 0 |
| | Pre | 7 | 2 | 0 |
| | Post | 20 | 8 | 0 |
| 32. allows finalizing a diffusable document | | 33,33 | 66,67 | 0 |
| | Pre | 3 | 6 | 0 |
| | Post | 10 | 9 | 0 |
| 33. implies to give up partly the property of its ideas | | 55,56 | 22,22 | 22,22 |
| | Pre | 5 | 2 | 2 |
| | Post | 0 | 6 | 40 |
| 34. requires to agree to the sharing of unfinished something | | 55,56 | 33,33 | 11,11 |
| | Pre | 5 | 3 | 1 |
| | Post | 10 | 8 | 10 |
| 35. at least requires the presence of all authors at one time | | 33,33 | 33,33 | 33,33 |
| | Pre | 3 | 3 | 3 |
| | Post | 0 | 5 | 50 |
| 36. requires an investment in time lower than an individual production | | 33,33 | 33,33 | 33,33 |
| | Pre | 3 | 3 | 3 |
| | Post | 0 | 30 | 70 |

| <i>Questions 51-53: A Web editor [(X)HTML]allows creating a document</i> | | | | |
|--|-------------|-------------------|-------------------|--------------|
| <i>N=9; O=0</i> | | <i>N=10 ; O=0</i> | | |
| (? = I do not understand the question) | | | | |
| <i>Items</i> | <i>Test</i> | <i>?</i> | <i>True</i> | <i>False</i> |
| 51. editable by several people | Pre | 44,44 4 | 44,44 4 | 11,11 1 |
| | Post | 10 1 | 50 5 | 40 4 |
| 52. accessible by anybody | Pre | 33,33 3 | 55,56 5 | 11,11 1 |
| | Post | 0 0 | 60 6 | 40 4 |
| 53. modifiable only by authorized/permitted people | Pre | 44,44 4 | 33,33 3 | 11,11 1 |
| | Post | 0 0 | 80 8 | 20 2 |

As we saw previously for the pretest, certain members have recourse to the technological tools to edit in a collaborative way. Those are in majority but the difference between the users and not users is rather small. These results can be put in relation to those from these tables before the trials. Indeed, **this task still presents many unclear points** since many items are misunderstood by the members (e.g. concept of reification) or cause questions among members. And, identically with TIC-EF CoP, the members who answer one of two items express their uncertainty.

Identically to TIC-EF CoP, we note in the post test that much less problems in the comprehension of the items were met. The members of the CoP had time between these two tests to inform themselves about the collaborative edition (notably thanks to SweetWiki).

They are every time at least more of two thirds of the learners that declare that software of collaborative edition enables them to create a document with others in a synchronous way (100%), to modify an existing document (70%), to finalize a document that can be diffused (90%) and to reify of individual knowledge (80%).

The learners are also 80% to affirm that this type of software requires an agreement to share unfinished documents and an investment in time more important than for an individual production (70%). The “property of ideas” and “the presence of all authors at one time” items are most divided.

7. Representations about the production of documents

| Questions 41-50;54-55: A Web editor [(X)HTML]allows creating a document | | | | |
|--|------|--|------------|------------|
| Pretest N=9 ; O=0 | | Post-test N=10 ; O=0 | | |
| | | (? = I do not understand the question) | | |
| Items | Test | ? | True | False |
| 41. where it directly sees the result of what one publishes (WYSIWYG) | Pre | 55,56 5 | 44,44 4 | 0 0 |
| | Post | 20 2 | 80 8 | 0 0 |
| 42. that respects standards | Pre | 33,33 3 | 66,67 6 | 0 0 |
| | Post | 10 1 | 90 9 | 0 0 |
| 43. interpretable and displayable by any navigator | Pre | 33,33 3 | 33,33 3 | 33,33 3 |
| | Post | 0 0 | 80 8 | 20 2 |
| 44. of which elements (paragraph, table, list of items...) are coded in a transparent way | Pre | 33,33 3 | 66,67 6 | 0 0 |
| | Post | 10 1 | 70 7 | 20 2 |
| 45. in which one can allot a semantic to various elements | Pre | 77,78 7 | 22,22 2 | 0 0 |
| | Post | 30 3 | 60 6 | 10 1 |
| 46. reusable in a document edited via a word-processing without losing its layout of page | Pre | 11,11 1 | 77,78 7 | 11,11 1 |
| | Post | 0 0 | 50 5 | 50 5 |
| 47. which guarantees the durability of its contents (not lost because of versions evolution in the edition software) | Pre | 66,67 6 | 33,33 3 | 0 0 |
| | Post | 20 2 | 80 8 | 0 0 |
| 48. readable on various types of supports (computer, PDA, phone mobile.) | Pre | 33,33 3 | 66,67 6 | 0 0 |
| | Post | 0 0 | 90 9 | 10 1 |
| 49. which integrates multi-media elements | Pre | 55,56 5 | 44,44 4 | 0 0 |
| | Post | 0 0 | 90 9 | 10 1 |
| 50. which allows exchanging and reusing data with help (in) of the other softwares (without using the function "copy/paste") | Pre | 55,56 5 | 44,44 4 | 0 0 |
| | Post | 20 2 | 50 5 | 30 3 |
| 54. including a system of annotations (tags) | Pre | 77,78 7 | 22,22 2 | 0 0 |
| | Post | 0 0 | 90 9 | 10 1 |
| 55. which allows creating links towards another Web page | Pre | 33,33 3 | 66,67 6 | 0 0 |
| | Post | 0 0 | 90 9 | 10 1 |

Once again, we note that **many concepts raise difficulties in the pretest for the production of documents**. On the other hand, we observe something interesting. In the provided answers, it is often the “true” item which was selected. The answers refer almost all to the shutter “**interoperable**” and “**reusable**”. **We can deduce from it that this concept is assimilated by the members of TIC-FA CoP**. It is a kind of knowledge which appears assimilated among this CoP to the production of documents.

The post test shows for the majority of the items (10/12) that more of three quarters of learners understood the aspects associated with the creation of documents by a Web editor and know his fundamental functionalities.

Synthesis

About the production of documents and the collaborative edition, we retain **an important evolution concerning the understanding of the contents (meaning and accuracy or nuance)**. The trials allow the learners to become more competent in these two tasks. In other words, the use of the PALETTE tools and services led to learning outcomes.

7.6.10.2. Logbooks, synthesis and interviews

The analysis of the questionnaires enabled us to perceive a difference between *before* and *after* the use of the PALETTE tools/services in the representations and the declared practices of the TIC-FA and TIC-EF CoPs members.

To deepen this study, we also analyzed the **data from the logbooks** filled week after week by each CoPs member in order to **understand what occurred between the two tests**. We also asked the TICFA learners to write down a common synthesis about their master of ICT and the use of PALETTE tools and services. This document has been edited using Google Docs that allowed them to work collaboratively and synchronously. Since they are related almost to the same themes than those dealt in the logbooks, the data are also treated in this part. Since the use of DocReuse only concerned the animators, we will mention their comments (coming from interviews or discussions with the mediator) about the evolution of their perception of the service and how they lived the preparation of the activities and the implementation of their scenarios.

We focused the analysis on the same topics as those mentioned in the questionnaire. But the structure of this part of the report is different: we present here the observations related to the trials **tool by tool** while trying to understand in which way these ones supported the CoPs members ICT mastery, production of documents, collaborative edition and learning. The study of the instrumentation process (tool/service and their schemes of use) is centered more particularly on the problems of **usability and acceptability** which the learners encountered during the appropriation of the tools/services. This type of data allows determining the impact of the trials and understanding the effects of the uses of the PALETTE tools and services by the two communities of practice.

The method of analysis of the logbooks takes into account the fact that the learners have some freedom to present their reflections. They are not obliged to complete all the suggested aspects, they have no grid to systematically observe themselves their activities or check some operations during or after a specific task. Moreover, it is a personal document about the learning carried out during the courses and thus, all the students do not retain the same thing at the same time or in the same way. This explains why we systematically do not find the same kind of information through the logbooks for each course. The data are distributed into the various writings of the learners. So, we used a qualitative method based on an **analysis of contents** by highlighting the aspects which appear important to us to underline. There are thus often practices and/or representations declared by one or some learners (and not all of them at the same time).

This content analysis is **based on the one hand on ten series of logbooks of fourteen TIC-EF CoP members (149 documents) and, on the other hand, on the logbooks of nine TIC-FA CoP**

members who filled them at least once a week, sometimes twice since they have two sessions per week (119 analyzed documents).

The TIC-EF CoP

ICT mastery

The logbooks of the first courses expose certain **fears** and **concerns** among TIC-EF CoP members. The learners have the impression to have some (big) lack of knowledge about the computers uses and feel unable to teach them effectively. Even if certain questions remain in suspend and certain competences are not mastered yet, we observe that progressively, the learners declare to be **less lost** than before **when they use new interfaces** and to become able to **explore different tools in an autonomous way**. Two students explicitly attribute this increase of confidence to the discovery of **various technological tools**. So, it seems that the learners feel more competent and confident with the ICT than before they started the activities because they have been confronted with several technological universes, in particular PALETTE tools/services (Amaya, SweetWiki and BayFac).

Proposing repetitively **several tools/services** which help the CoP members to become competent regard to the ICT and trains them in solving problems they could encounter with such kinds of tools.

Use of Amaya tool

For the CoP members, the Amaya tool is considered as a word processor as well as the MSWord or the OpenOffice Writer software. The learners compare these tools and understand the interest to privilege Amaya for its dimensions “**Respect of standards (HTML)**” and “**Accessibility by others**”. A member of TIC-EF CoP declares “*J’ai compris l’intérêt de bien éditer avec Amaya en version HTML car cela permet à toute personne d’ouvrir nos documents avec un affichage standard et donc accessible*”. Even if there is some error (cf. the expression “standard display”) or imprecision in the formulation of this reflection, we can say that they have noticed some of the added values of Amaya about the **production of documents**. But sometimes it takes time to deeply understand the fact that the documents produced with Amaya are really easily accessible and sharable without compatibility problems “*Ah effectivement je n’avais pas envisagé le fait que madame P. puisse utiliser Amaya aussi... Pas très subtile de ma part c’est vrai. ;-)*”, message just followed by “*Aïe, j’ai encore fait une gaffe... C’est vrai qu’Amaya n’est même pas nécessaire pour ouvrir ce type de document... Je finirai bien par m’y faire un jour!*”.

As to the **collaborative** learning, being able to exchange documents respecting standards allows the learners to send/to receive productions to/from others, so it increases the exchanges of resources.

Moreover, the use of Amaya enables them to discover another way to edit documents and by comparing it with Word, the CoP members learn transverse functions present in a lot of software dealing with the same kind of task. Then, they are aware of several invariants, what increases their knowledge on the **ICT**.

Nevertheless, the TIC-EF CoP members do not adhere yet to this tool. The acceptability of Amaya is not yet sufficiently developed so that the learners use it apart from the obligation of the courses. The first reason is linked to the difficulty of understanding it during the first uses. They must search for a long time in the interface and in the scrolling lists to find the desired functions. “*J’espère que l’on apprendra davantage à propos d’Amaya car il est difficile de s’y retrouver au début. Il y a des options que je désirais parfois utiliser mais que je parvenais pas trouver*”. For them, at the beginning, its use requires an important **time of familiarization and complementary explanations**. More, the **problems of usability** do not support either its acceptability. Some members encounter difficulties to “control” certain functions. The major problems refer to the:

- installation of the tool
- width of the columns for a table
- orthographical corrector
- addition of pictures, objects and geometrical forms

- spacing between words
- lines spacing
- indent of first line (or before a text)
- addition of bullets and numbering
- underlining of words or part of text

The analysis of the logbooks edited with Amaya allows observing a **catachresis phenomenon** as for the production of documents. The learners use the levels of title to highlight words or parts of phrase; they want to draw the attention of the reader to the essential ideas because they have difficulties with the functions related to the font (choice of the font, size and colors of the characters...). However, the recourse to this function does not correspond to this type of use.

Lastly, we also note a **clear evolution** in the use of the Amaya tool. The first documents present no layout, neither the addition of images, nor of tables whereas the last productions are more sophisticated in their form. In parallel, the learners declare that they are progressively more and more at ease with this tool as one goes along the weeks. A learner says *“Je me sens plus à l’aise avec le logiciel Amaya. C’est avec beaucoup plus de facilité que je rédige mes textes et que je m’y retrouve dans les différentes fonctions de mise en page et styles d’écriture...”*.

Use of SweetWiki service

Concerning the SweetWiki service, the assets expressed by the TIC-EF CoP members are multiple. First of all, they had a rather ‘negative’ representation with regard to the collaborative edition and more particularly, the creation of Web page. They believed this task was very difficult. *“L’édition de la wikinews m’a paru beaucoup plus facile à réaliser que ce que je pensais”*. The use of SweetWiki allows to the learners realizing that **the creation of Web page with this service does not require a great knowledge and mastery of the ICT**. *“J’ai créé une page web !!! Jamais je n’aurais pu imaginer que j’y arriverais un jour. Ce n’est pourtant pas si compliqué”*. Moreover, the majority of accounts express a certain **pride** related to their page creation: *“Je suis assez fière de ma page web!”*. The members of CoPs (re)take **self-confidence**; the use of SweetWiki eliminates or decreases certain fears (fear not to be able...) with regard to the **ICT**.

Then, in a recurring manner, we can read in the logbooks that SweetWiki is perceived in a positive way by the learners and notably thanks to its usability. *“Sweetwiki est très intéressant et facile à utiliser !”* We did not note any major ergonomic problem in their comments; its **usability** is recognized by almost the totality of the CoP.

Tag and create themselves Web pages represent tasks little frequently carried out by the members of this CoP. At the end of the trials 35 pages were created and used by the TIC-EF CoP (two animators and fourteen members). We think that to be able doing it thus increases the **motivation** and the **will to better know the service**. Besides several of them declare that they use the service apart from the courses sessions and that they want to prolong its use after the trial. We can thus affirm that this tool is rather well accepted by the CoP (**acceptability**).

As for the collaborative learning, the use of SweetWiki supported the exchanges between the members of the CoP. *“Grâce à SweetWiki, on partage, on crée quelque chose ensemble, on complète les idées des uns et des autres, on s’informe... Nous avons travaillé par, pour et avec les autres : je pense que les apprentissages sont bien plus riches lorsqu’on collabore ensemble”*. Thus, the learners declare exchanging ideas and producing documents together in a collaborative way... and do so during the proposed activities.

Moreover, the use of SweetWiki also allowed to the TIC-EF CoP members to refine their representations on the **collaborative edition**. *“J’ai pu donner du sens au terme “édition collaborative”, j’avais mal interprété ce terme car nous ne l’avions jamais vraiment verbalisé en classe et donc je n’en connaissais pas le terme exact : éditer tous ensemble, (r)ajouter des informations sur un sujet en utilisant un programme...”*.

We read frequently that the use of SweetWiki takes part favorably in the construction of the **feeling of belonging to a CoP**. Here are many extracts of logbooks which abound in this direction:

- *“Le fait de produire des pages par groupe et de suivre simultanément celles des autres a vraiment concrétisé pour moi l'idée d'une CoP TIC-EF”.*
- *“Chacun apportait des nouvelles idées ou modifiait celles déjà pensées par le groupe. Au final, on avait des documents qui comportaient les savoirs de chacun. Chacun apporte ses savoirs et de cette façon, c'est tous ensemble que l'on apprend. Dans ce cadre, je me sens membre d'une CoP”*
- *“Le fait de m'inscrire dans SW m'a permis de me sentir dans une large communauté d'apprenants nous intéressant à des sujets communs, notamment l'enseignement”.*
- *“Je ressens un peu plus la notion de communauté d'apprenants au fil des séances en travaillant sur SW. On appartient à une sorte de réseau dans lequel on peut tous publier et échanger nos savoirs”.*
- *“Durant le cours aujourd'hui, je me suis sentie pour la première fois membre de la CoP TICEF. En effet, le travail effectué sur SW consistant en une édition collaborative de Netiquettes m'a montré ce que c'était d'échanger ses connaissances avec d'autres apprenants.”*

The concerns related to the use of this service refer more to this **mode of exchange** and edition rather than to the service itself. Indeed, the learners are afraid to edit documents **by fear of the other member's opinion**. The productions are subjected to the criticism of others what can paralyze certain users. *“Pour de ce qui est de mettre des news sur le site, j'ai un peu peur parce que je ne sais pas si ce que je trouverai comme articles sera intéressant et pertinent pour les autres”*. The members bring the **relevance of edited information** into question. The “Web page” side makes that the users launch less easily into a collaborative edition because the “drivel” is seen by everyone. *“J'ai trouvé des documents intéressants que je souhaiterais faire partager aux autres par l'intermédiaire de SW mais j'ai peur de faire une "bourde"”*.

Lastly, the interest in this service by the CoP members also results from its **accessibility**. The Web pages are easily accessible and visible by everybody. *“Le fait de les éditer sur SW permet de mettre les réalisations à portée de tous ; je trouve cela plus simple que de se les envoyer par mail par exemple”*.

Use of BayFac service

The use of BayFac is considered by the learners as interesting because it provides them a common space where they can post and consult various documents. That contributes to capitalize resources and to constitute a collective database to which they can refer according to their needs. The learners find the interface easy to use to search for information; they find readily the expected functions. But, they encountered difficulties to carry out the two tasks proposed first (exploration of the Form@HETICE space whose topics are very close to the TIC-EF ones), what had an influence on its **utility perception**. In fact, they had to discern the difference between searching in the Web and in a dedicated space. More, as at that moment, they could not post their own documents and search resources efficiently, so they did not perceive the interest to use this service. Later, a presentation of their own BayFac space and a demonstration of its use to post and classify documents with facets values helped some of them to better understand the service and some declared to be motivated by the project of posting their own productions (after a validation by the animator).

The TIC-FA CoP

Use of Amaya tool

As the TIC-EF CoP, the TIC-FA CoP members assimilate the Amaya editor to a word processor like MSWord. But, the majority of these CoP members do **not see the difference between the two tools**. *“J'ai peut-être découvert un nouveau logiciel mais j'avoue ne pas encore comprendre en quoi il est effectivement plus utile et fonctionnel que Word. Non seulement, je ne parviens pas encore à situer l'intérêt de l'utiliser mais j'ai également besoin d'explications quant à la façon dont ce programme fonctionne”*. Many members denounce the fact that Amaya **cannot offer “as many possibilities as Word”** about the layout of the documents. *“Je regrette qu'il n'y ait pas plus de fonctions pour*

personnaliser ma page Amaya”. They have the impression that the edited document is less sophisticated and that it is impoverished. For that reason the members of the CoP do not perceive the interest to privilege this software. In other words, since they are familiarized with MSWord, they do not want to invest and adopt new software which seems less rich according to their point of view. In fact, they did not understand its added value and what have been explained about it. Moreover some **reluctance about the changes of practice** reinforces this difficulty of adoption. *“Je fais face ici à ma rigidité face au changement de mes habitudes”*. This seems to influence the perception of the utility of the tool and its acceptability. It seems that the form of the document supplants the contents for these users. The major advantage of Amaya use results from the comparison inter tools which allows to the learners discovering the common functions (ICT invariants) between different software devoted to the edition of documents and consequently, to **broaden their knowledge on the ICT**.

To **produce their documents**, the learners encountered many difficulties what probably gives them this general feeling of “heaviness/slowness” and “not very pleasant”. *“Je dois bien avouer qu’Amaya ne me séduit pas beaucoup, il est un peu lourd”*. At the beginning, the first recurring problem referred to the selection words or sentences (even if the animator explained that a paragraph is selected by using F2 or ESC):

- *“La sélection des titres est moins aisée dans ce programme ; parfois ma souris a tendance à prendre plus que ce je devais sélectionner”*
- *“Quand j’utilise Amaya, j’ai intérêt à sélectionner une phrase du haut vers le bas et non l’inverse car alors, je perds ma sélection”*
- *“Sur Amaya, je dois sélectionner un groupe de mots façon “arabe”; de gauche à droite. Si je le fais dans le sens contraire, la sélection de la phrase ne prend pas et je la perds”*.

The **underlining of words or sentences** also provokes some questions. The learners do not associate this layout to hyperlinks and thus, they think that the Amaya tool does not offer the traditional functions of layout: *“Je n’arrive pas à souligner les mots dans Amaya. Je me demande si cette option existe comme dans le programme Word”* or *“Problème de soulignement des mots : impossible à réaliser”*.

The recourse to the **templates** does not make either the unanimity; some learners cannot open them and/or cannot display their documents with the correct layout (ex: cells of the template juxtaposed and illegible). *“Pas moyen d’ouvrir les templates envoyés. J’ai essayé avec Fichier/ouvrir mais je ne trouve pas”*.

Among others, the members seem enough divided about the **installation of Amaya tool**. For the ones this task was carried out easily for others it was problematic.

In spite of the reported difficulties, we can observe **an evolution in the use of the software**. *“Pour ce qui est d’Amaya, une certaine routine s’installe. Ce logiciel ne me cause plus trop de problème”*. Progressively, we notice that the logbooks are **more sophisticated** than in the beginning. The layouts of the documents are more sophisticated and structured than before; the insertion of pictures and tables as well as hyperlinks is present. *“Suite aux travaux réalisés à partir d’Amaya, je suis persuadé de maîtriser les fonctions principales de ce logiciel”*. They feel a certain satisfaction with the realization of the last logbooks. *“Je suis assez content de la mise en page avec le logiciel que j’utilise”*. Nevertheless, the learners also have the feeling that the appropriation of the tool is not finished. *“Je ne suis pas sûre d’avoir encore suffisamment exploré l’outil pour savoir jusqu’où je peux aller, tout ce qu’il me permet de faire”*. To adopt it in a more completely way, it still remains to them many functionalities to explore. *“J’ai l’impression que d’autres fonctionnalités peuvent encore être abordées. Ce qui me donne cette impression c’est le nombre d’icônes et de fonctions que nous avons à l’écran lorsqu’on travaille sur Amaya”*.

We retain that also for this CoP that the use of Amaya requires an **important time of familiarization** to apprehend the tool in its entirety. The fact that the training module is only available in **english** also represented a brake for certain users. *“Ce que je regrette c’est qu’il soit en anglais”*.

Use of SweetWiki service

The reading of the TIC-FA CoP logbooks reveals tendencies very different than those from the TIC-EF CoP. Indeed, the general feeling towards SweetWiki for TIC-FA is mitigated whereas for TIC-EF CoP, the learners tend to be positive about the use of this service.

First of all, the members of this CoP completely do not determine the **utility** of the service. Many members directly do not perceive the advantages of using SweetWiki. *“Je ne maîtrise pas encore les différentes fonctions de Sweetwiki et je me demande également quels sont les avantages de ce site par rapport à d’autres qui lui sont similaires”*.

Nevertheless, the learners appear satisfied to create Web pages. However, their realization is strenuous for them. The usability of SweetWiki is appraised by its **instability**. The learners carry out certain procedures which succeed sometimes and sometimes not. And they cannot know if they are responsible of this problem or if it is a bug within the service.

- *“Le Sweetwiki me pose quelques problèmes. Je ne sais pas s’il y a des bugs ou si c’est moi qui ne respecte pas une procédure”*
- *“J’ai réussi à rédiger ma fiche mais quand je veux l’enregistrer, un gros message d’erreur s’affiche. S’agit-il d’une mauvaise manœuvre ? Où est-ce le logiciel ?”*

The members of the CoP have thus the impression not to have control on their actions and the feedbacks given (even inexistent) by the service do not enable them to understand their errors and solve the problem. This situation leads to a feeling of discomfort. *“Je ne suis pas encore très à l’aise avec ce programme”*. The backup and changes of the pages also represent problematic tasks:

- *“Mon profil est ok mais je ne peux le modifier sans que le système ne plante. Je suis pourtant les consignes de sauvegarde régulière.”*
- *“J’ai éprouvé quelques problèmes pour éditer ma news dans le wikinews TICFA. A chaque tentative d’enregistrement, une page d’erreur s’affichait.”*

A difficulty often expressed by the learners is attached to the principle of **awareness**. Indeed, the learners denounce the difficulty in visualizing the changes in the page operated by others. They have to go back the previous versions what is not a very effective practice according to them. Moreover, they expect to be alerted when someone has changed something in the page he/she has edited. *“Pour ce qui est de la modification des textes, il serait bien que le dernier rédacteur de celui-ci soit prévenu par un système d’alerte”*. The members also expressed their disappointment about **the impossibility to edit a SweetWiki page with several people at the same time**. *“L’impossibilité d’entrer dans un même document à plusieurs pouvait être générateur d’inconfort voire même d’agacement pour certains membres du groupe”*.

We observe that these difficulties represent brakes to the appropriation and the acceptability of the service by the members of TIC-FA CoP.

- *“Le travail collaboratif a provoqué un léger rejet du sweetwiki voire même un gros rejet car cela n’allait pas assez vite (et je ne parle pas ici des PC qui parfois rament un peu, ce qui en rajoute une couche sur ces perceptions)”*
- *“La sensation de perte de temps durant l’utilisation du sweetwiki ne le rend pas très séduisant à mes yeux”*

SweetWiki seems to present some assets which compensate these disadvantages. Indeed, SweetWiki developed learning about the **collaborative learning**. In the precision of their perceptions, the trials with SweetWiki highlight the need for building a consensus about common rules to behave, similar work method and negotiated objectives, setting of deadlines. *“Rédiger ensemble à distance impose de discuter afin de se mettre d’accord sur la méthode de travail, sur l’organisation et donc entraîne une planification de la tâche. Cela permet de fixer des échéances et des objectifs et aide les membres du groupe à mieux voir dans quelle direction ils se dirigent et à mieux se situer dans le processus”*. This experiment of collaborative work taught to the students certain modes of exchange which implicate

certain requirements. “A travers SW, nous avons pu nous rendre compte de la difficulté de produire un résultat quand on ne peut pas dialoguer réellement avec la ou les personnes concernées”. Therefore, the students familiarize themselves with the collaborative learning process thanks to SweetWiki. It seems that this type of functioning becomes a means of learning more and more recommended/used by this CoP. “De plus, pour en revenir au fonctionnement de la CoP, il me semble que l'apprentissage collaboratif entre de plus en plus dans les "mœurs", certains textes ayant été modifiés à plusieurs reprises après les cours.”

We also observe that the representations of **the collaborative edition** evolved favorably. This task was perceived as something difficult. Now, we can read most positive comments and notice a certain motivation to continue to do such collaborative task. “J’éprouvais quelques doutes par rapport à SW. Je pensais que ça allait rendre la collaboration entre les membres du groupe difficile. Or, je m’aperçois que je me suis trompé car j’ai trouvé que ce travail a permis à tous les membres du groupe d’apporter sa pierre à l’édifice”.

We notice that the learners know the difficulties generated by the collaborative edition but, that they are ready to make the effort to obtain a work of quality. “Il me semble que le fait que nous soyons à plusieurs à travailler sur un même document pousse à être plus vigilant quant au vocabulaire et à la syntaxe utilisés. J’ai donc l’impression que l’élaboration du document est plus lente mais que son contenu gagne en qualité”.

As for the feeling of belonging to a CoP, we find identical remarks that those written down by the TIC-EF CoP members. The fact that the learners have to complete a work with several people using the same service concretizes the CoP identity and implies the participation of all. By this shared interest, the use of SweetWiki contributes to the feeling of belonging to a community by supporting their activities. Several comments express this:

- “Je me réjouis de voir comment l’utilisation de SweetWiki va évoluer, cet outil reflète à mon avis le mieux notre fonctionnement en tant que communauté de pratique”.
- “Le travail avec sweetwiki a bien fonctionné. Cela nous permet de renforcer les liens qui existent déjà et d’en créer de nouveaux”
- “Au travers de sweetwiki, l’apprentissage collaboratif commence à s’ancrer en moi. Nous devenons une communauté avec ses règles et son mode de fonctionnement qui viennent de naître et qui font leur chemin.”
- “Le fait de construire un savoir en groupe, de nous faire travailler ensemble et de produire un document diffusé sur le web fait que non seulement, je me sens appartenir à une CoP (en lui apportant quelque chose et en recevant des autres) mais le travail produit concrétise à mon avis l’existence de la cop.”
- “J’ai eu un sentiment d’appartenance à la CoP TIC-FA car nous travaillons tous ensemble et nous pouvions nous enrichir les uns des autres grâce à nos idées. Chacun a contribué à cette page, chacun a dit ce qu’il pensait des logiciels utilisés, qualités, défauts...”
- “J’ai eu vraiment le sentiment d’appartenir à une CoP car nous avons tous la même mission, critiquer le dispositif sur sweetwiki pour le faire évoluer. Nous travaillons ensemble dans le but de faire évoluer Amaya et j’ai trouvé cela très chouette”

Lastly, we note a certain **evolution** concerning the use of the service. We observe in the pages the addition of pictures, hyperlinks or tags. The number of pages also increased. There are now 26 pages created and used by the ten TIC-FA CoPs members and their animators. Moreover, we find remarks of learners which go in this direction. “Nous avons appris à mieux utiliser les wikis. Personnellement, je maîtrise mieux ses différentes fonctionnalités (faire un lien URL, rechercher efficacement par tags, créer une nouvelle page...)”.

Thus, in spite of the expressed difficulties, we notice that the learners are progressively adopting the tool even if we think that its acceptability is not yet guaranteed. “Je commence à trouver le SweetWiki familier.”

Use of BayFac service

The learners represent the BayFac service like a service **to classify documents based on a model of facetization**. They also add that it allows **a search for resources** by its system of facets.

Even if the learners recognize that the facets allow specifying the research, **they first did not see the interest yet to privilege them compared to the keywords**. More especially as it is possible also to search by keywords within the service, some users prefer to have recourse to this type of research and thus interrogate on the interest to use the BayFac service instead of another. During a debriefing about the tasks they had to carry out with BayFac, they understood the added value of faceting search instead of using keywords. They also conclude that it is not productive to choose many facets and values (it can strongly reduce the number of results) or to have a very large choice among them (the cognitive load is too heavy).

Contrary to TIC-EF CoP, they denounce problems of usability like the scrolling bar which are sometimes inappropriate or the buttons of “research” which are badly positioned and seem to be duplicated (one at the top, another at the bottom, but they have not the same function). They were happy to know that this will be reported to the developers and probably fixed.

They also find the functions rather basic and simple, but they regretted that the interface does not give a global vision of the various facets. A special attention was expressed concerning the researching of document which is not stable and which often does not provide the expected results probably since there were not yet a lot of documents classified (around 80 when the trial takes place) and that the users had not yet well understood the best way to use BayFac. At this stage, we think that the learners do not adhere to the tool and that they do not fully understand its utility yet.

After a session where they saw how to upload and classify documents (the first demo failed – Murphy law ☹) and where the animator announced that almost all the documents referenced in the course will be classified and available, they seemed to be more inclined to use this service, but it is not sure.

Use of CoPe_it! service

According to the comments of the learners, CoPe_it! is perceived like a **service of collaboration allowing the exchange of opinions on the topics chosen by the members of the same group with various supports of communication** (productions, pictures, hypertext links, ...).

Even if its acceptability is not optimal, the learners who used it only once recognize nevertheless many assets to this service. First of all, CoPe_it! gives the opportunity to the CoP members to live a collaborative activity with the use of a technological tool and this, in a synchronous way. This experience made evolve **their representations with regard to the collaborative learning in discovering different modes of exchanges**. Indeed, the learners declare that the principle of the conceptual chart allows a total visualization of the debate. In other words, the “schema-plan” vision brings a benefit in the exchanges compared to a discussion in “forum”. Moreover, the service is not limited to the written conversation; the insertion and the addition of various objects make the debate and the interactions richer than without them. The means implemented such as the addition of adornment, arrows and their granularity (layer, colors code ...) are also interesting to develop and refine the relations between the opinions of the members. “*Les codes couleurs permettent de faire le point sur les avis des membres du groupe (pour ou contre l’argument)*”. The “Time-entered” view, with the historical of the exchanges, is considered by the learners as an important function of the service in particular when a member intervenes on the workspace after a long time (asynchronous discussion). The learners appreciate CoPe_it! because of its modes of original exchanges (*versus forum*) which increase the collaboration and the richness of the interactions.

Thanks to its organization in CoP-area (Earth community...), the learners estimate that the service allows **the creation and the development of a CoP**. “*Il permet à une CoP de se créer et de se développer à travers lui*”. The compatibility and the combination to be at the same time member of a

CoP (Earth, TICFA, publics or common workspaces...) and to be an individual person (personal profile, possibility of creating private pages...) within CoPe_it! are assets recognized by each user. Thus, the synthesis and logbooks highlight that CoPe_it! favorably contribute to the feeling of belonging to a community of practice while preserving his/her own identity.

In spite of its advantages, the members of TIC-FA CoP **do not adhere easily to the service**. Many difficulties of usability represent brakes to its use including three major problems. Firstly, the learners mention that **the rapidity of the service is related to the performance of the computer**. And if the computer is not very powerful, the slowness of the service does not support the exchanges. There is thus a disproportion between the time of the tasks carried out on the workspace and the contents actually exchanged in discredit of the CoPe_it! use. Then, another reproach refers to **the impossibility of reading the other member's contributions when they are intervening on the workspaces**. The learners deplore the fact that they cannot think on the interventions of the others before having the floor. Because if they could do it, at the moment of the interventions on the workspace, they could more quickly react and let others interact during a synchronous debate. The learners thus claim a simultaneous **right of reading** on the other member's interventions to increase and support the interactions. Besides this problem, the turn taking between the CoP members is very time consuming. Lastly, they denounce the impossibility of delete or edit any object and at least, those which they created themselves (their own objects).

To conclude, it is important to mention that CoPe_it! was used only once and that the learners had little time to try the service. Thus, we cannot compare the remarks of this trial based on one activity with those related to current activities implemented with Amaya and SweetWiki. Nevertheless, we can affirm that the problems denounced above do not support its acceptability among the members of TIC-FA CoP.

Use of DocReuse service and Amaya templates

This service was finally not used by the CoPs members or by their animators as planned. The two animators reported that they were first enthusiastic to exploit this service, so that they conceive two scenarios based on the reusability of data extracted from templates to be filled by their CoPs members. Those scenarios answered to the CoP needs (animators and members) and seem to constitute a good basis for a generic scenario useful for other CoPs: on the one hand, reuse data to compare different points of views based on the categories present in the templates and, on the other hand extract and list the same kind of data from productions of different CoP members.

A first difficulty quickly appeared: the Amaya template editor was not really usable by the CoPs animators (at the beginning of May 2008). After spending some time to try to edit their templates, they contacted the developers and obtained some help. In fact, the developers made the templates for them on the basis of their specifications. They also promise a new version of the template editor will be available soon. At this stage the instrumentation process failed, the users not being able to use these specific functionalities of the tool.

Afterwards, having the templates and some examples of filled files, the matter was to be able to use DocReuse to extract the useful data. But the service was under construction and the animators' demand was considered as too specific since they needed to get a readable display of the data extracted (e.g. to offer a comparison of data from some categories of the templates in a table of two or three columns). The animators had not the computer competences to program that by themselves, so they were very disappointed. Then it was not possible to implement their scenarios...

After several interactions with the DocReuse developer, the possibility to answer the demand was considered again, but with a simplification of the scenario specification (only compare data from the same template, no possibility to display in a table data coming from one template and another one in parallel. Nevertheless, remotivated, the animators started the activity based on filling one kind of templates and show to the CoPs members the interest of using templates and reusing data. Some weeks after, there were problems (timing, feasibility, etc.) so that first the animators had just the

possibility to show in parallel two documents opened in Amaya. After, a possibility to show that independently of Amaya was programmed. The display was very bad. Finally a smarter one was produced. The CoPs members were told about the process, the utility but also the difficulty to put the theory into practice. It was very difficult to demonstrate the added value of templates offering the opportunity to easily reuse data. We are not sure that the CoPs members are convinced about that.

The animators are still disappointed. Was there a misunderstanding when they first propose this scenario that they considered to be an instantiation of generic ones? It had been considered like that when one of them talked about it with the responsible of this application some months ago... They feel that the implementation of DocReuse takes too much time regarding the actual results even if they believe it could be promising. More, they have no autonomy to use it. Their feeling is to have lost a lot of time to get something that they cannot use themselves. They depend on the developers ... and they know they will not be available after the end of January. The service has evolved but is not usable or useful at the moment by CoP members nor by their animators even if those ones are very familiar with ICTs and in favour of interoperability.

7.6.11 Bias

For the questionnaires and the logbooks, it is necessary to keep in mind the **social desirability phenomenon**. Indeed, certain people answer sometimes what they think that we expect from them. Unconsciously or not, they are perhaps brought to modify their answers in order to preserve their self-image and their self-respect or to appear favorably close to the researcher point of view or expectations (especially when this one is their professor-evaluator). This bias can be attenuated by the observation of actual practices which we can also compare with the expected practices by the developers.

Lastly, as we expressed several times in the analysis of the results, other tools and contents were approached during the seances. It is thus **difficult to allot the results expressing an evolution and changes only to the use of the PALETTE tools or services**. However, the use of these tools or services seems to **favorably contribute** to the evolution of the representations and the acquisition of new practices among the CoPs members.

7.6.12 Transfer to other CoP situations and contexts

Firstly, it is important that the uses of the PALETTE tools or services are integrated in **the relevant and current activities or practices** of the CoP members. These activities must be related to the domains and the usual tasks of the communities of practices. It is through a contextualization that the tools or services make sense and so, it favorably supports their acceptability and their utility.

Then, the appropriation of the tools or services depends **on the previous experiments and the level of mastery of ICT use**. The members of CoPs tend to use some known tools and with which they have a positive experience. This resentment often comes from the results which they obtain during the use of the technological tools but also from the environment (atmosphere...) in which these tasks proceeded. So the importance to make emerge the utility of the tools or services uses according to a type of task and to be attentive with its conditions of emergence.

The discovery of different tools or services allows to the CoP members to become familiar with them and to develop transversal competences on ICT use (ICT invariant). It expands their computer literacy. Moreover, the frequency of use is also essential to influence the appropriation and the acceptability of the tools or services. In other words, more the CoP members use the tools and services in a regular way, more they adopt them and more easily they accept them in their practices.

Lastly, the CoP members must be **supported** in their appropriation of the PALETTE tools and services. Two means seem to favor their use: the presence of **a CoP animator** and a preparation, **a training** of the tools or services.

7.6.13 Follow-up: CoPs and developers

CoPs

The reports to CoPs took several forms during these trials.

First of all, some continuous **feedbacks** were given from the *logbooks* where the members wrote their questions and comments on their learning. The animators read them every week and **answered the questions**; they also brought **further information** about the tools and services in a regular way. In certain cases, some **clarifications** were necessary. The formulation of certain learning reports revealed sometimes incomprehension of the concepts. In this case, the animators clarified and deepened them. Several difficulties were also solved during *the face to face sessions*, answers being directly brought by the animators. Moreover, some *emails* were exchanged between the members and the animators to provide **solutions to particular problems**. If the problems concerned several members at the same time or could concern everybody, those were treated in group (ex: a SweetWiki session expires after sixty seconds in SweetWiki).

The animators also gave an account to the members about **the effects of the contacts with the developers** referring to the remarks made on the use of the tools or services. The returns were often related on the encountered problems of usability and the implementation of new functionalities. The exchanges created a certain dynamic; they came to support the motivation to be implied in the participatory design.

Developers

For the **Amaya tool**, the contacts between CoP animators and developers were concretized by *email*, *telephone* and also by *videoconference*. These exchanges were mostly focused on the difficulties to edit the templates (May 2008). The developers helped animators to create the templates which were linked to the specific scenario on “Analysis and comparison educational environments through two models” (in connection with the use of DocReuse). They also solved the problems which the CoP members encountered in the various versions (example: superposition of certain cells of the template).

According to the Amaya tool, many contacts with the developers of **DocReuse** finally permitted to agree on a version to allow editing usable templates. The animators and developers discussed on the requests and tried to carry out a layout offering the re-used data display.

Several pages created by the members were not correctly saved in the **SweetWiki service**. The animators sent *emails* to the SweetWiki developers that helped them. Other technical problems as cited above disappeared by this way of interaction.

As to **CoPe_it! Service**, the CoP members did not have always the menus with the possible functions to interact with the others on the workspaces. They had sometimes difficulties with the access to the service. By *email* and *chat*, the developers solved the problems; they went directly on the service to help the animators of CoPs to carry out the tasks. Moreover, some recommendations are sent to the developers to implement some new functionalities mentioned by the members during the trials.

Lastly, the CoP animators are building a repository with their resources in the **BayFac service** to support the search of information in the CoPs domain. To sustain this development the animators and the developers had a very close collaboration. The animators designed a conceptual chart illustrating the ontology of CoPs. The developers programming the ontology in rdfls. These exchanges took place mainly by *email* or by *phone and videoconference*.

7.6.14 Conclusion

The objective of the research was to observe the changes among TIC-FA and TIC-EF CoP members following the use of the PALETTE tools and services. An evolution in their representations and the development of new practices was observed at various levels.

First of all, we retain that the discovery of several tools or services allows to the members to become more competent in the **domain of the ICT** in terms of practices and technological literacy. They discover more transverse functions through the tools and feel thus less lost when using the new interfaces especially, when they repeat the procedures (regular use). The use of the PALETTE tools or services also decreases fears of certain members who have negative representations with regard to the ICT. By obtaining positive results during their activities, certain members (re)take self-confidence and feel able to (better) master the ICT. This causes favorably recourse to the ICT (in general) to carry out certain tasks.

Then, we notice that the use of the PALETTE tools and services offer to the members of CoPs to live collaborative activities. They could exchange ideas, resources and knowledge. These experiments enable them to refine their representations about the **collaborative learning** and to have reference tools to support their future activities.

The use of the PALETTE tools or services allowed the emergence of CoPs but also the development of their feeling of belonging to a CoP. The tools supported their activities; they made it possible to concretize them. The realization of the tasks in the trials created some common interests between the members. Thus, the recourse of PALETTE tools and services contributes favorably to the identity building of the CoP.

As for **the production of documents**, the discovery of several tools allows to the CoPs members comparing different word-processors and interrogating on their assets and their disadvantages. Even if the tools are not still or sufficiently accepted and adopted by the members, this comparison allowed a certain awakening on the importance of the standards, the exchangeable documents and the durability of data.

Lastly, the most important assets are about the **collaborative edition**. For many of them, it was their first experiment in this field. Thus they learned the favorable modes of exchanges and the codes of conduct to be adopted and/or avoided for the realization of this task. The use of the PALETTE tools or service allowed the members understanding that even if the conception of document sometimes is slower, the collaborative work gains in quality.

8 – Discussion

8.1 Cross-case analysis: purpose and method

This discussion is based on a cross-case analysis (Miles & A. M. Huberman, 1994) and dedicated to several questions:

- In what extent the produced analysis propose developments of the Generic Scenarios?
- By considering the seven analysed cases, what are the common conditions so that they are useful and consistent for other CoPs?
- How could we inform other CoPs in their process of development on the basis of our analysis?

The purpose of cross-case (or cross-site) analysis is “to increase the generalisability by confirming that events or processes observed in a well defined environment are not purely idiosyncratic” (Miles & A. M. Huberman, 2003, p. 307). Our question is then “Could our results with seven specific CoPs be of interest for other CoPs?” or “Are our results meaningful for other cases?”. What can be generalized (in some way) from our results? As our methodology is mainly qualitative, our approach is ‘case-oriented’ rather than ‘variable-oriented’. In this approach, each case is considered as an environment as a whole and a comparative study is envisaged only after each case has been analysed, i.e. after the processes, and conditions of use of tools and changes of activity have been identified and understood for each case. “The analyst will search for underlying similarities and constant associations [...], compare cases with divergent results, and begin to put forward more general explanations.” (Miles & A. M. Huberman, 2003, pp. 311-312).

Concretely, in order to carry out our cross-case analysis, we proceeded as follows:

- We wrote the analysis of each individual case based on the same conceptual framework and general questions of research (see section 7).
- We combined the analysis of each case into a common matrix so that the cases can be compared following common questions. We distributed the cases regarding the Generic Scenarios (see the appendix 4, p. 138). We also based our analysis on the WP6 account about its meta-analysis of the support to the CoPs provided by PALETTE. This WP6 account used interviews of the CoP mediators as well as the reports on the trials (see D.EVA.06).
- We finally wrote a general synthesis.

This approach is called “accumulation of comparable cases” (Miles & A. M. Huberman, 2003, p. 314). The choice of the common questions is of course critical. We chose to first focus on the Generic Scenarios. Indeed, the CoPs are comparable if their activities are comparable. For each Generic Scenario, we then identify three main questions that could be of interest for other CoPs:

- What are the conditions of use of the services: need, purpose, training of members, mastery of the tools, process of negotiation of use, habit of carrying out such activities, etc.?
- What are the changes (in CoP activities, communication, social interactions, etc.) that occurred through the use of the services?
- What are the perspectives of development of uses after the first experience?

Our analysis can be read similarly to the D.EVA.06 which goals are to present a meta-analysis of the support of CoPs in PALETTE, and provide suggestions of uses of PALETTE services and scenarios to other CoPs who have not participated in PALETTE.

8.2 Results

We present the results of the cross-case analysis regarding the three Generic Scenarios (see D.IMP.08 for further information). This presentation could be understood as if the Generic Scenarios were completely separate. However, as we stated in the foreword (p. 6), they are strongly interrelated. We invite the reader to keep this critical point in mind while examining the following results. We will go back to this consideration in the synthesis, section 8.3, p. 128.

8.2.1 ‘Reification’ generic scenario

We here identify two ‘reification’ scenarios regarding the different purposes of the CoPs under consideration:

- Reification of practices through structured documents involving description and/or reuse of professional actions (Did@cTIC, Learn-Nett), and production of resources (ePrep, TIC-FA, TIC-EF).
- Reification of practices through indexing, classification, tagging and sharing of resources within the CoP (CoPe-L, Learn-Nett, TIC-EF, TIC-FA).

Reification through structured documents

Table 4 – Cross-case analysis: reification through structured documents

| | Conditions of use of the services? | Changes in the CoP through the use of the tools? | Perspectives for the development of uses? |
|----------|---|---|---|
| Did@cTIC | <p>Before the use:</p> <ul style="list-style-type: none"> - habit of collaboration and reflection. - identification of an important issue, deep reflection on the needs and objectives of the CoP, and negotiation of different possible ways to meet them. - analysis and reflection on the existing activities of reification: modelling. - modelling the scenario of reification: steps, roles, uses of tools. - deep analysis of the functioning of the tools: self-learning, demo with the developpers, etc. <p>During the use:</p> <ul style="list-style-type: none"> - good will for trying different uses and possible scenarios. Acceptance of the fact that the CoP could be mistaken. - clear objectives to the use of new services in concrete activities. | <ul style="list-style-type: none"> - the changes in taking notes during the meetings of the CoP have had an impact on the reification of the individual practices: use of a logbook, concrete implementation of practices discussed in the meetings, etc. One change is a lever for other changes. - the progressive change of the used templates changes the approach of using them by the CoP: those who are in charge of taking notes would like to be more autonomous regarding the developers. - the structure of the templates has had an effect on the management of the CoP meetings: the moderator could better structure the discussions. This lead to deeper debates and improvement of discussed ideas. This also lead to better relations and follow-up between the meetings. - individual teaching practices evolved. | <ul style="list-style-type: none"> - use of keywords in the description of discussed practices. - the whole process should allow saving time when revising the notes after the meetings. This will be evaluated afterwards. - to develop ‘dialogue documents’ that would allow combining oral description of practices during meetings with written description in meeting accounts. Exploration of possible uses of Limsee3 for this purpose. |
| ePrep | <ul style="list-style-type: none"> - purpose of the activities strongly related to the global purpose of the CoP: producing, sharing and resusing resources. - two leading members take an active part in the activity; they carry out the elaboration of first multimedia documents. - training to the use of the services and conception of the scenario in close collaboration with the developers (experts in the services). Focus on the mastery of the tools for being confident and not changing too | <ul style="list-style-type: none"> - the regular discussions between the CoP and the developers allow continuing reflection on the uses of the services. - change in the “grandes écoles” culture: from an individual way to teach to a more collaborative one. - even if the use of the services does not spread throughout the whole CoP and “grandes écoles”, there is a feeling of saving time for teachers while using such services. - awareness about individual practice of | <ul style="list-style-type: none"> - development of a more collaborative culture in the “grandes écoles” by advertising the outcomes of the use of the services by ePrep: to shift from “non-sharable practices” to “sharable ones”. - project of creating new courses and collaborative dictionary. |

| | Conditions of use of the services? | Changes in the CoP through the use of the tools? | Perspectives for the development of uses? |
|------------|--|--|---|
| | many existing habits (CoP in emergence). - during use: regular debriefings with the developers. | preparing courses. | |
| Learn-Nett | <ul style="list-style-type: none"> - members are used to work with different platforms at the same time. They are also used to change their tools from years to years. - members are used to discuss their practice: through the tutors' training, monthly discussions, and final evaluation meeting. - some members (educational researchers and trainers) are used to work in collaboration with computer scientists for developing platforms and Web-based services in the educational technology field. However, few are used to work with Web 2.0 technologies: semantic Web, annotations, ontology, etc. - no formal training to the use of the services (SweetWiki and BayFac); only informal information and use of a help document. - deep analysis of the needs. The members kept them in mind a throughout the project. - difficulties to communicate with the whole CoP about the uses of PALETTE services; lack of coordination. - members are used to work at a distance through forums and regular visioconferences. | <ul style="list-style-type: none"> - the CoP considers the use of SweetWiki as very useful for sharing descriptions of professional situations. There is a common feeling that the writing of situations can be fruitful for both the new and experienced tutors. However, lack of use is observed due to lack of common view and negotiation on the use. - common feeling that reifying the tutors' practices allows discussing, evaluating and improving them. - new tutors are more confident before their first experience while considering the different ways to do in various situations. This contributes to their integration and socialization into the CoP. - tutors are more autonomous when facing pedagogical issues. They can access to the situations base alone. However, they also can discuss with the other tutors through the forum or at the monthly visioconferences. | <ul style="list-style-type: none"> - even if the CoP considers the use of SweetWiki as very useful, more use could be developed through a better structuration of the pages and common training to the use of the service. - better common use of tags to negotiate. - to organise a training to the analysis of practice. |
| TIC-FA | <ul style="list-style-type: none"> - 10 students participating in a common mandatory course ("Adult learning"). They well know each other. They are graduate from non university Higher Education and follow now a Master degree in educational sciences at the university. - heterogeneous group regarding ICT mastery. | <ul style="list-style-type: none"> - usual use of Amaya for producing documents. - better use of collaborative edition tools; wider representation of collaboration with or without tools. - better understanding of the contents of shared documents. | <ul style="list-style-type: none"> - development of personal uses of collaborative edition services and tools. - development of personal uses of structured documents editors. |

| | Conditions of use of the services? | Changes in the CoP through the use of the tools? | Perspectives for the development of uses? |
|--------|---|---|--|
| | <ul style="list-style-type: none"> - face-to-face courses and activities at a distance. - participation in specific activities organised by the teacher. - used to reflect on their learning process and activities through a logbook. - used to share news about their domain. - training to the use of the PALETTE tools. | | |
| TIC-EF | <ul style="list-style-type: none"> - 14 students participating in a common mandatory course ("Teaching"). They well know each other. They are graduate from non university Higher Education and follow now a Master degree in educational sciences at the university. - heterogeneous group regarding ICT mastery. - face-to-face courses and activities at a distance. - used to work at a distance, prepared to participate in the Learn-Nett course. - participation in specific activities organised by the teacher. - used to reflect on their learning process and activities through a logbook. - used to share news about their domain. - training to the use of the PALETTE tools. | <ul style="list-style-type: none"> - usual use of Amaya for producing structured documents and understanding of the use of a Wiki for collaborative purposes. - better use of help of software and online services, modifications follow-up in word processors, templates, and annotations. - wider and more positive vision of sharing and collaborating at a distance. - more efficient while exploring new tools and services. - better understanding of the usefulness of structured documents but difficulties regarding the usability and acceptability of Amaya. - better self-confidence regarding the use of Web tools, especially the mastery of edition of Web pages with SweetWiki. | <ul style="list-style-type: none"> - development of personal uses of collaborative edition services and tools. - development of personal uses of structured documents editors. |

Reification through indexing of documents

Table 5 – Cross-case analysis : reification through indexing documents

| | Conditions of use of the services? | Changes in the CoP through the use of the tools? | Perspectives for the development of uses? |
|--------|--|--|---|
| CoPe-L | <ul style="list-style-type: none"> - members used to share resources on e.learning and use common technical | <ul style="list-style-type: none"> - the reflection within a focus group on the use of BayFac made the members involved | <ul style="list-style-type: none"> - the CoP seems strongly dependent on the external grants and projects the members were |

| | Conditions of use of the services? | Changes in the CoP through the use of the tools? | Perspectives for the development of uses? |
|------------|---|---|--|
| | <p>resources (servers, Yahoo! group).</p> <ul style="list-style-type: none"> - members used to work in an interdisciplinary context: specialists in human resources, developers, psychologists, etc. - open to new members, external to the initial institution. Development of the CoP thanks to a European grant. - a focus group worked on the elaboration of scenarios and appropriation of PALETTE services. - organisation of very short and concrete activity scenarios. | <p>but the concrete use has not changed the CoP: no better involvement and communication has been observed.</p> <ul style="list-style-type: none"> - the need identified in January 2008 is considered as having changed in the following months. No evaluation of the need has been regularly negotiated. After analysis, it seems that the use of BayFac has maybe not been well related to the real need. - the focus group's members see the elaboration of the BayFac project as a positive and dynamic change in the CoP organisation: the CoP is able to carry out projects. - by using BayFac for sharing resources, the members realized that they were extending the scope of the CoP: they shared documents about e-learning, but also about knowledge management, collaborative learning, etc. | <p>involved in. Once these projects ended, the members' involvement fell down.</p> <ul style="list-style-type: none"> - not much perspectives are identified as the CoP seems to fall down. |
| Learn-Nett | <p><i>See the description here above in the 'Reification through structured documents' section.</i></p> | <ul style="list-style-type: none"> - development of a better identity of the CoP by collecting all its outcomes in one location. - development of the identity of the whole Learn-Nett project and community for an external audience. - tutors consider the documents base as very useful for the students to search for groups' reports from previous years and for teachers who would like to find interesting pedagogical scenarios. | <ul style="list-style-type: none"> - need for a revision of the ontology (simplification). - need for discussing other documents to make available, especially data for research, and students' reports and resources. |
| TIC-FA | <p><i>See the description here above in the 'Reification through structured documents' section.</i></p> | <ul style="list-style-type: none"> - better understanding of annotations and use of ontology/folksonomy. | / |
| TIC-EF | <p><i>See the description here above in the 'Reification through structured documents' section.</i></p> | <ul style="list-style-type: none"> - better understanding of annotations and use of ontology/folksonomy. | / |

| | Conditions of use of the services? | Changes in the CoP through the use of the tools? | Perspectives for the development of uses? |
|--|------------------------------------|--|---|
| | <i>section.</i> | - more efficient while exploring new tools and services. | |

8.2.2 ‘Debate and Decide’ generic scenario

Table 6 – Cross-case analysis: debate and decide

| | Conditions of use of the services? | Changes in the CoP through the use of the tools? | Perspectives for the development of uses? |
|--------|--|--|---|
| TIC-FA | <i>See the description here above in the ‘Reification through structured documents’ section.</i> | <ul style="list-style-type: none"> - use of collaborative edition tools for discussing practices and make decisions. - more positive representation of carrying out debates at a distance through web services. - better use of collaborative edition tools; wider representation of collaboration with or without tools. - evolution of the representations of collaboration at a distance through different uses of SweetWiki and CoPe_it! | <ul style="list-style-type: none"> - development of personal uses of tools for collaborating at a distance. - personal organisation of collaborative tasks with colleagues or students. |

8.2.3 ‘Identity building’ generic scenario

Table 7 – Cross-case analysis: identity building

| | Conditions of use of the services? | Changes in the CoP through the use of the tools? | Perspectives for the development of uses? |
|-----|--|--|---|
| TFT | <ul style="list-style-type: none"> - members are used to discuss their practice and negotiate common meaning through face-to-face discussions but there was no process of knowledge management and reification at the beginning. - CoP in emergence: no strong identity and the members are not used to work with ICTs (e.g. Wiki, Web 2.0 services, etc.). Strong reflection about what tool could be the most adapted to the members’ usual use of ICTs. | <ul style="list-style-type: none"> - members’ attitudes towards ICTs changed: use of emails for communication rather than phone, awareness of training needs, goodwill to the use of ICTs in the future. - members’ attitudes towards communication and sharing at a distance evolved: no real fear to share and communicate even if some of them are not used to communicate through Web services. - to participate in the CoP is valuable for the | <ul style="list-style-type: none"> - development of a culture of sharing through concrete activities. - use of more usable tools. - carry out easy-to-do activities. - develop common technical training aiming at both learning the use of tools and negotiating the way to use them within the CoP. |

| | | | |
|--------|---|--|---|
| | <ul style="list-style-type: none"> - before the use, strong reflection on the possible effect of the use of SweetWiki on the CoP identity building, and development of members' attitudes towards the CoP and its activities. - analysis of the members' professional (institutional) context before the use. - common training to the tools aiming at directly implementing new uses and new activities in the CoP. - at the beginning, expression of individual motivations to get involved in the CoP. | <p>members: it could help defining and recognizing their roles in their institutions.</p> <ul style="list-style-type: none"> - there is a feeling to belong to a CoP. Some members would like to get more involved in the CoP. This leads to more proposals of activities and topics of discussion. - the members' technological culture increase. | |
| TIC-EF | <i>See the description here above in the 'Reification through structured documents' section.</i> | <ul style="list-style-type: none"> - wider and more positive vision of sharing and collaborating at a distance. - better feeling of belonging to a community at a distance through the use of SweetWiki. | / |
| TIC-FA | <i>See the description here above in the 'Reification through structured documents' section.</i> | <ul style="list-style-type: none"> - better vision of a distributed community and the possibility to build a community identity at a distance. - better use of collaborative edition tools; wider representation of collaboration with or without tools. - perception of the possibilities for a CoP to develop through common uses of tools. | / |

8.3 Synthesis

When considering the changes that occur for CoPs while carrying out the PALETTE services and scenarios, it is interesting to note that the three Generic Scenarios are interrelated. Some changes in reification process have an impact on the processes of debate and decide, and identity building of the CoP. More precisely:

- Reification allows developing or confirming CoP identity (Learn-Nett, ePrep) or making the CoP more confident into its skills to develop projects (CoPe-L) or defining better its domain (CoPe-L);
- Reification allows discussing and debating practices (Learn-Nett);
- Identity building requires debate and decision making about the development and activities of the CoP (TFT). It also requires reification of the “CoP identity”: a logo, participants’ yellow pages, etc. (TFT, TIC-FA, TIC-EF);
- Reification allows CoP members to move away from their own practice by considering and understanding other ways to do (Learn-Nett, CoPe-L, Did@cTIC). For the new comers, it is a way to put their mind at rest regarding their first experience (Learn-Nett);
- Reification changes the way to work within a CoP through the passage from oral to written expression and descriptions of practice (Learn-Nett, Did@cTIC);
- Reification is a way to present the CoP for an external audience (Learn-Nett, CoPe-L) or for motivating peripheral members to participate in the core activities of the CoP (ePrep).

This analysis is in line with what WP6 highlighted in D.EVA.06 through the interviews of the mediators.

In order to carry out these changes, at least two conditions seem to be common to the CoPs we have worked with:

- Training: it can take different forms (at a distance, in face-to-face, through individual or collective activities, etc.) and concern different objectives (mastery of tools, reification of one’s practices, basic notions such as ontology, structured documents, etc.). However, its main purpose beyond the training of the CoP members is to develop a sense of belonging and getting involved in a common project in a wide sense. Training together is also an opportunity to meet, to discuss the points of the CoP, to debate the projects, to negotiate the next activities, etc.
- Continuing analysis of needs and reflection on CoP purpose and activities: again this can take different forms (reflection with a focus group, discussions with external experts, etc.). However the point here is to never think that CoP needs are static. Once they have highlighted their needs and main processes, the CoPs continue to reflect on their activities. They are dynamic in order to be consistent and up-to-date with their domain and members’ needs and personal objectives. This continuing reflection also comprises development of uses of tools and curiosity about new tools and uses.

A third condition could be highlighted but is peculiar to the PALETTE project. It is the presence of mediators between the CoPs and the PALETTE developers. This condition has been very important for accompanying the activities and processes of change within the CoPs. As external experts, the mediators have closely participated in the development of the CoPs. D.EVA06 and D.PAR.05 more particularly develop the analysis of the roles of the mediators and ways to train them.

When one of these conditions was missing, the CoPs experienced issues in implementing new activities and new tools with their members. It is then not surprising that in their perspectives, the CoP want to continue the development of training activities and reflection on their internal processes of reification, debate, decision making and identity building.

9 – Conclusion and Perspectives

In conclusion, and regarding the uses of the PALETTE services, the analysis of our seven cases comes out onto a picture with sharp contrasts. Some CoPs trialled PALETTE services and will clearly continue to develop their uses. Some others conclude that the PALETTE services are not necessarily

the most suitable for their purpose and either will use other tools or change their activities. However the fact remains that all have developed their ways to reify their members' practices, organise debates and decision making, and develop their identity through better description of their purpose or activities. In other words we could say they all learned, changed and developed. This is the lesson we learn from our within-case and cross-case analysis.

Proposing general advices from individual contrasted cases is a difficult exercise (Miles & A. M. Huberman, 1994). However, on the basis of our analysis, we could try to propose some important points to other CoPs:

- Evaluate the members' mastery of ICT and attitudes towards ICT. If they are used to work with ICT, new tools could be tested then accepted or rejected. If they are not used, common training is crucial.
- Strong analysis of needs and objectives is important: common negotiation of meaning of the CoP activities allows developing CoP identity and members' sense of belonging (see LORs NeedCoP and ObjectivesActivities in D.PAR.06).
- Elaborate short and concrete activity scenarios with clear added-value from the members' point of view and outcomes easy to evaluate.
- To keep connected even at a distance in order to keep the members involved in the processes of change.

If we consider our methodology, we used a participative methodology (participating observations, interviews, questionnaires, etc.) that probably influenced the CoP members in the sense that we paid real attention to them. We also were closely involved in the CoP processes of development. During 3 years we have worked with them and they very well know our objectives and methodologies. Maybe they answered for pleasing us in some way. Maybe more ethnographic observation would have shown different activity. However, our involvement led to high validity of our within-case analysis.

Finally, in terms of perspectives, each CoP has been informed about the conclusions and advices produced from the within-case analysis. The developers have also participated in the follow-up after the observations and they will continue to develop their services and tools in that way (see the last deliverables D.INF.07, D.KNO.08 and D.MED.08). In addition, the four general advices to CoPs that we stated here above are useful regarding the development and improvement of LORs about mastery of ICT by CoP members, attitudes towards ICT within CoPs, and changes and development of uses of tools.

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Appendix 1 – Evaluation framework

The evaluation indicators listed below are excerpts of D.EVA.02 that aimed at providing PALETTE with a common evaluation framework. The questions below are taken into account in the research questions and grids of observation and analysis used in this task.

1. Generic indicator: Enabling; Specific Indicator: preparation and expectations
Questions:
 - a. What are the perceptions of the community about the process of elaboration of the scenario and the negotiation for the implementation of the trials?
 - b. Are the protocols easily understood?
 - c. Is the form of the scenario suitable and understandable by the community?
 - d. How did the initiation/training of the CoPs members/mediators occur to the PALETTE services?
 - e. How did the mediators appropriate the PALETTE services?
 - f. How did the mediators appropriate the observation method?Target Group: Delegates or focus groups from the communities, mediators
Instruments: Group discussion, Semi-structured interviews, Observation
2. Generic indicator: Process; Specific Indicator: Enabling of learning
Questions:
 - a. What the conditions that best support learning in CoPs (sociability, social links) and how are they fulfilled?
 - b. How do the PALETTE services and scenarios support these processes?Target Group: Delegates or focus groups from the communities
Instruments: Group discussion, Semi-structured interviews, Analysis of on-line discussion
3. Generic indicator: Process; Specific Indicator: Participation
Questions:
 - a. To what extent do all the actors of PALETTE participate in the implementation of the trials and elaboration of specific uses by the CoPs?
 - b. How are the participatory activities perceived?Target Group: Focus groups from the communities or members
Instruments: Group discussion, Analysis of on-line discussion, Observation
4. Generic indicator: Process; Specific Indicator: Enabling of knowledge building and reification
Questions:
 - a. To what extent PALETTE services mediate knowledge building and reification?Target Group: Focus groups from the communities or members
Instruments: Analyze of the uses of the Knowledge Management services, Group discussion, Observation, Analysis of on-line discussion
5. Generic indicator: Process; Specific Indicator: Enabling of goals realization
Questions:
 - a. Does the use of PALETTE services and scenarios support the achievement of CoPs goals and how?
 - b. Were the PALETTE services and scenarios adapted for the achievement of specific goals?
 - c. How far are the services from the activities? Should they or the activities be transformed?
 - d. Do the services improve the activities of the CoPs? Are the trials appropriated?
 - e. Has the implementation of trials had a consequence on the goals and needs of the CoPs? Have the goals and needs changed?
 - f. How did CoPs members attribute value to their uses of PALETTE services?Target Group: Focus groups from the communities or members
Instrument: Group discussion, Observation, Analysis of on-line discussion
6. Generic indicator: Outcomes; Specific Indicator: States of knowledge
Questions:
 - a. What are the new knowledge and skills developed by all the PALETTE actors (human and non human)?

- b. How do the PALETTE services evolve with the trials?
 Target Group: PALETTE partners, CoPs members
 Instrument: Group discussion, Analysis of the scenario and services provided, Analysis of on-line discussion, Observation
7. Generic indicator: Outcomes; Specific Indicator: New practices
 Questions:
- What are the new practices/activities developed by the CoPs and their members with the use of the PALETTE services?
 - In what ways are the new knowledge and skills manifest in changed practices/activities at individual level?
 - In what ways are the new knowledge and skills manifest in changed practices/activities in groups?
 - What are the new practices developed by the mediators in order to support their CoP?
- Target Group: CoPs members, mediators
 Instrument: Group discussion, Interviews, Analysis of on-line exchanges, Observation

Appendix 2 – Examples of Activity Scheme

The first example is from Cerratto (2005, p. 164). It is about a collaborative writing activity of an argumentative text. It describes what makes the essence of such activity for a given group:

- Planification de la collaboration : le sujet procède au cadrage de la tâche d'écriture à réaliser en discutant les consignes avec les autres pour arriver à une interprétation commune.
- Apport d'informations sur le contenu à traiter : le sujet procède à l'échange d'informations sur le contenu à rédiger, il négocie et choisit les arguments qui vont structurer le texte commun.
- Division et affectation du travail : les sujets se mettent d'accord sur « qui écrit quoi ». Des sous-groupes se constituent. Des discussions apparaissent aussi à propos des modalités du travail en groupe (lieux de rédaction, moyens, horaires).
- Faire le plan de l'écrit : en sous-groupes, les sujets composent le sommaire du texte qui va fonctionner comme cadre conceptuel et référentiel pour l'ensemble du groupe.
- Composer des parties du texte ensemble : en sous-groupes, ils commencent la rédaction des paragraphes.
- Réviser les parties rédigées par les autres : il s'agit de lire, d'évaluer et de réécrire le contenu du texte par rapport aux idées accordées auparavant. Il s'agit aussi de repérer les parties encore à faire, à modifier, à compléter.
- Réaffectation du travail : une nouvelle allocation des tâches a lieu à la fin de la phase de révision.

The second example is from Daele & Lessard (2007). It is the activity scheme of a group of researchers who met for producing a common document (the “object” discussed) to be then disseminated.

(S=“subject”; O=“Object” i.e. the document to produce; the codes on the right are used by Daele & Lessard for coding the different mediation processes).

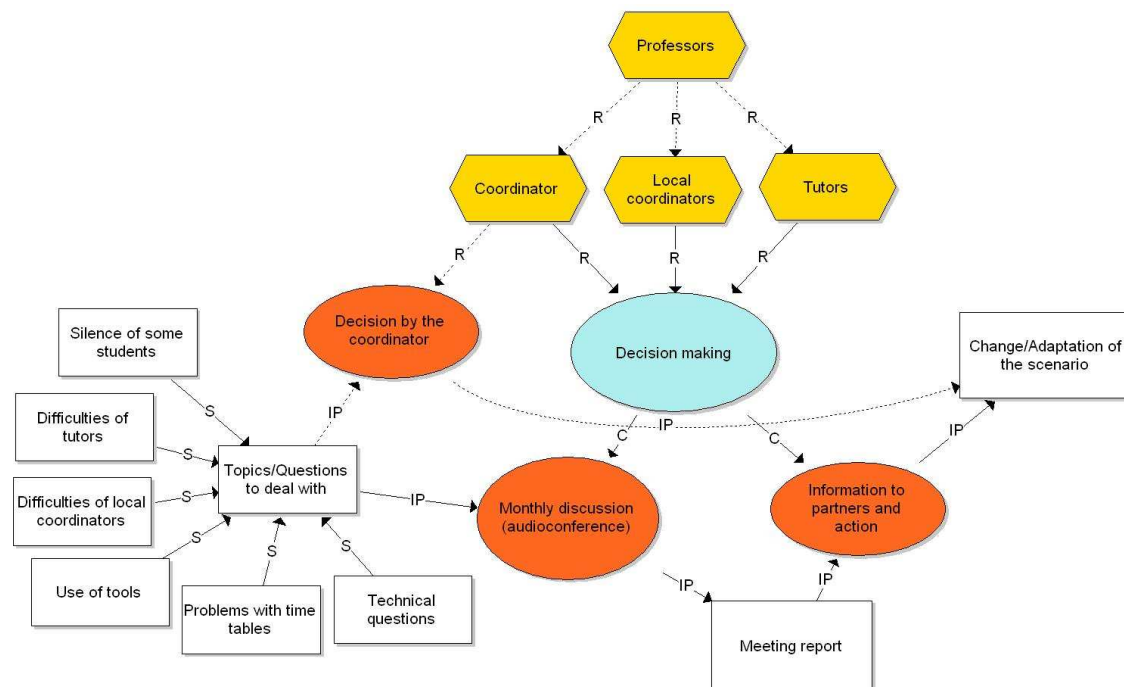
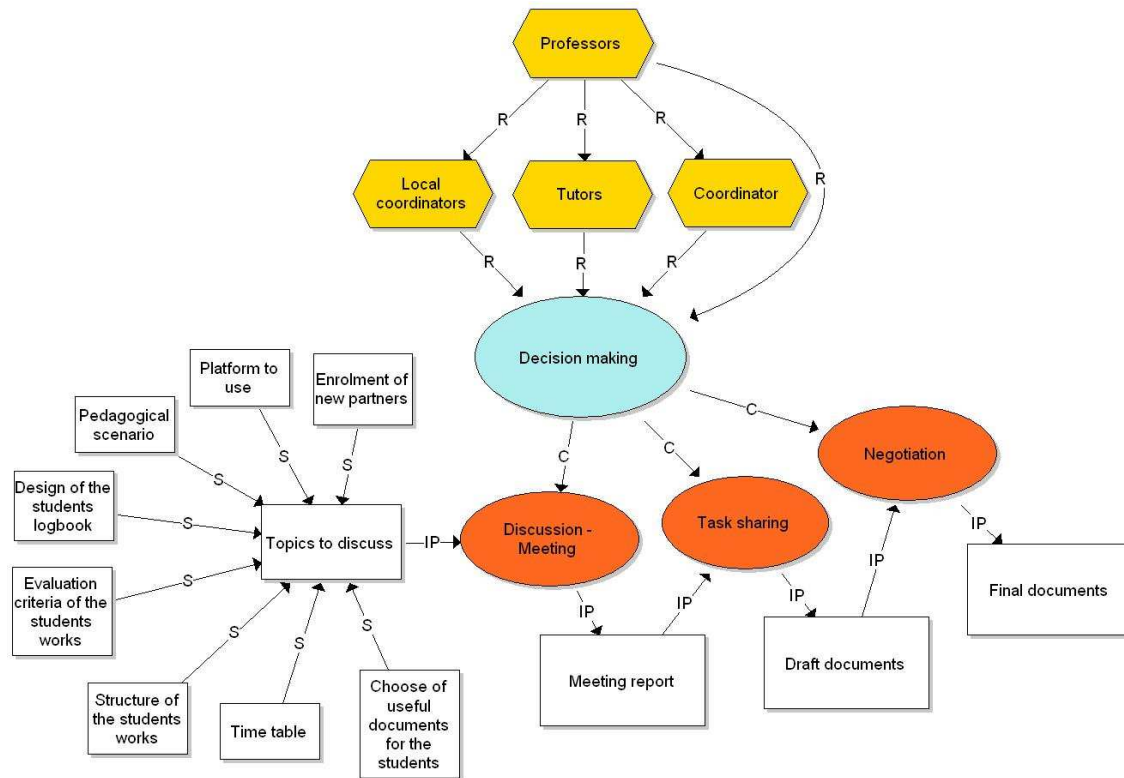
| | Part of the scheme “before the meeting” | |
|---|--|-------|
| | Preparation of the meeting agenda | 2A.SS |
| | Individual information about the object | 1A.S |
| | Modification of the object by a participant considered as the expert | 1B.S |
| | Sequential framework of the scheme during the meeting | Code |
| 1 | Making contact with each other | 3C.SS |
| 2 | Organisation of the meeting | 2C.SS |
| 3 | Initiation of the discussion | 1A.SS |

| | | |
|---|--|-----------------------|
| 4 | Collective and individual information about the object | 1A.SS et 1A.S |
| 5 | Negotiation, decision making and collective modification | 1B.SS |
| 6 | Asking for approval of the modification | 1B.SS |
| 7 | Asking for approval before passing to the next meeting issue | 2C.SS |
| | Incidental framework of the scheme during the meeting | |
| | Organisation of future tasks | 2A.SS, 2C.S et 2C.SS |
| | Self-reflection on personal work | 1C.S et 1C.SS |
| | Expression of expert's status | 3B.SS |
| | Training on the job | 4C.SS |
| | Stopping S-O oriented work in order to highlight O | 1C.SS, 3C.SS et 4A.SS |
| | Stopping S-O oriented work in order to highlight S | 4C.SS |
| | Managing interactions | 2C.SS |
| | Part of the scheme after the meeting | |
| | Modification of the object by the expert participant | 1B.S |
| | Approval of the modifications by consensus | 1B.SS |
| | Archiving the object in a shared space | 1A.SS |

The table below is the grid of coding that has been applied to the collected data (observations of the group at work). Each function of the group corresponds to different types of mediations of the instruments that can be individual or collective.

| <div> <div>Médiation</div> <div>Fonction</div> </div> | A. Epistémique S-I information sur O | | B. Pragmatique S-I transformation de O | | C. Heuristique S-I transformation de S | |
|---|--|---|---|--|--|---|
| | Individuelle (S) | Collective (SS) | Individuelle (S) | Collective (SS) | Individuelle (S) | Collective (SS) |
| 1. Production-élaboration (tâche à accomplir, objectifs...) | 1A.S : médiation entre un Sujet et un Instrument pour obtenir de l'information sur l'Objet dans un but de production | 1A.SS : médiation entre plusieurs Sujets et un Instrument pour obtenir de l'information sur l'Objet dans un but de production | 1B.S : médiation entre un Sujet et un Instrument pour élaborer, créer ou modifier l'Objet | 1B.SS : médiation entre plusieurs Sujets et un Instrument pour élaborer, créer ou modifier l'Objet | 1C.S : médiation entre un Sujet et un Instrument pour modifier le Sujet lui-même (sa tâche, son rôle, ses représentations, etc.) par rapport au but de production | 1C.SS : médiation entre des Sujets et un Instrument pour modifier un ou d'autres Sujets (tâche, rôle, représentations, etc.) par rapport au but de production |
| 2. Organisation-planification (organisation interne, partage des tâches, moyens de communication...) | 2A.S : médiation entre un Sujet et un Instrument pour s'organiser ou planifier une prise d'information à propos de l'Objet | 2A.SS : médiation entre plusieurs Sujets et un Instrument pour s'organiser ou planifier une prise d'information à propos de l'Objet | 2B.S : médiation entre un Sujet et un Instrument pour s'organiser ou planifier la transformation de l'Objet | 2B.SS : médiation entre plusieurs Sujets et un Instrument pour s'organiser ou planifier la transformation de l'Objet | 2C.S : médiation entre un Sujet et un Instrument pour modifier le Sujet lui-même (sa tâche, son rôle, ses représentations, etc.) par rapport à l'organisation et la planification de son travail | 2C.SS : médiation entre des Sujets et un Instrument pour modifier un ou d'autres Sujets (tâche, rôle, représentations, etc.) par rapport à l'organisation et la planification de leur travail |
| 3. Facilitation-régulation (gestion des relations entre les membres, conflits éventuels...) | 3A.S : médiation entre un Sujet et un Instrument pour faciliter les relations entre les membres en vue d'une prise d'information du groupe à propos de l'Objet | 3A.SS : médiation entre plusieurs Sujets et un Instrument pour faciliter les relations entre les membres en vue d'une prise d'information du groupe à propos de l'Objet | 3B.S : médiation entre un Sujet et un Instrument pour faciliter ou réguler les relations entre les membres en vue de la transformation de l'Objet par le groupe | 3B.SS : médiation entre plusieurs Sujets et un Instrument pour faciliter ou réguler les relations entre les membres en vue de la transformation de l'Objet par le groupe | 3C.S : médiation entre un Sujet et un Instrument pour faciliter les relations entre les membres en vue d'une modification d'un ou d'autres Sujets (tâche, rôle, représentations, etc.) dans le but de faciliter ou de réguler le travail du groupe | 3C.SS : médiation entre des Sujets et un Instrument pour faciliter les relations entre les membres en vue d'une modification d'un ou d'autres Sujets (tâche, rôle, représentations, etc.) dans le but de faciliter ou de réguler le travail du groupe |
| 4. Evaluation-réflexion (réflexion à propos du groupe et de ses objectifs, évaluation des activités, le point sur les apprentissages...) | 4A.S : médiation entre un Sujet et un Instrument pour évaluer sa prise d'information à propos de l'Objet | 4A.SS : médiation entre plusieurs Sujets et un Instrument pour évaluer la prise d'information du groupe à propos de l'Objet | 4B.S : médiation entre un Sujet et un Instrument pour évaluer le processus de transformation de l'Objet | 4B.SS : médiation entre plusieurs Sujets et un Instrument pour évaluer le processus de transformation de l'Objet | 4C.S : médiation entre un Sujet et un Instrument pour modifier le Sujet lui-même (sa tâche, son rôle, ses représentations, etc.) dans un but évaluatif | 4C.SS : médiation entre des Sujets et un Instrument pour modifier un ou d'autres Sujets (tâche, rôle, représentations, etc.) dans un but évaluatif |

The last example is a graphical depiction of a CoP activity from the PALETTE project. The two schemas below represent the processes of decision making in a CoP of tutors involved in distance training (Learn-Nett), respectively before and during the distance training with the students. The processes are circles, the objects shared or discussed are rectangles and the actors are hexagons (see Daele, 2006b).



Appendix 3 – Methodological tools

Stage 1: Selecting activities to be trialled

Activities should:

- be related to generic scenarios implemented by the WP5 teams;
- be significant to the CoP, its development and its learning processes (collective and individual);
- be carry out through a certain period of time (at least several weeks);
- allow the mediators to collect sufficient data.

Mediators are asked to describe these activities by answering the following questions:

- What is the activity (refer to an activity embedded in a generic scenario)?
- Who are the actors?
- What is its purpose?
- What is the social context of the activity?
- What are the services used (PALETTE and others)?
- What are the main steps of the activity?
- How will the activity be observed?
- What are the traces already available for the observation?

Appendix 4 – Activities chosen at stage 1

This list is only the list of activities that will be observed and analysed within the Task 1.4b framework. This is not the list of all the activities that are or will be trialled: other activities (notably with new Services or other CoPs) are or will be set up.

| Generic Scenarios | CoPs | Activities to be observed | Services used | Services interactions required by activities | Schedules | Main questions of research and potential added value |
|-------------------|----------|--|---|--|--|--|
| 1. Reification | CoPe-L | Indexing and classifying documents produced and shared within the CoP (see the situation “Faceted Search” in D.IMP.08, p. 15) | BayFac CAKB PALETTE Web Portal | April 2008: No specific interaction between tools. We plan to use CoPe_it!, but we are first focusing on the use of BayFac. We plan to use the Web Portal as well. The portal developers are working on a way to inform CoP members when a new document is added in BayFac. July 2008: use of CAKB (Cross Awareness Knowledge Base) and interaction with BayFac. This tool will inform the CoP moderator when a resource is create, read or delete | BayFac: - March 2008: uploading documents and test of the CoPe-L space by a focus group – preparation of the CoPe-L meeting and the EC review - March-April 2008: preparation of an ontology with 3 members of the focus group, validation by the CoPe-L focus group - April-May 2008: preparation of a scenario by the CoP mediator and the Service mediator, validation by the focus group - April-May 2008: preparation of a BayFac user guide - May 2008: CoPe-L face-to-face meeting for validation of the ontology by all members - May 2008: implementation of the CoPe-L space on BayFac - June-July 2008: uploading documents and test of BayFac by the focus group - August 2008: extensive use of BayFac by all CoPe-L members for uploading and searching documents | How did sharing of resources evolve through the use of BayFac? Has BayFac influenced the CoP organisation and involvement of members? |
| | Did@cTIC | Expression and sharing of practices (see the situations “Meeting Capitalization” in D.IMP.08, p.13 and “Meeting Reports Synthesis”, p. 14) | Amaya, DocReuse, SweetWiki | 1) Interactions between Amaya and DocReuse for: - improving the Amaya templates with DocReuse - structuring and restructuring documents with new templates 2) Interactions between SweetWiki and Amaya templates for searching contents in SweetWiki and Amaya documents | Amaya (Xtiger templates): - June 2007 validation of the scenario - October-December 2007: development of 2 templates Xtiger for Did@cTIC - November 2007- until now: trials of the templates using Amaya SweetWiki: - February 2008: open SweetWiki for Did@cTIC (for logbook) - Mars-April 2008: exchange about interactions between Amaya (Xtiger templates) and SweetWiki - May-June 2008: use by Did@cTIC | In Did@cTIC, are the teaching practices reification and reuse changed through the design and use of PALETTE services and scenario? What are the main results of the observation of the instrumental genesis of the Did@cTIC scenario by the Did@cTIC moderators (including the uses of the chain of services)? The potential added value is about the utility of structuring the process of taking notes, and the reuse of the structured documents |

| Generic Scenarios | CoPs | Activities to be observed | Services used | Services interactions required by activities | Schedules | Main questions of research and potential added value |
|-------------------|------------|--|--------------------------------------|---|--|--|
| | | | | | participants DocReuse: <ul style="list-style-type: none"> - April-June 2008: structuring old documents - End 2008: search contents in structured documents and SweetWiki? | by CoP members. |
| | Learn-Nett | Reifying practice, and indexing and classifying practices and documents (see the situation “Collaborative Experience Sharing” in D.IMP.08, p.13) | BayFac, SweetWiki | Between BayFac and SweetWiki for: <ul style="list-style-type: none"> - updating BayFac documents in SweetWiki - exporting SweetWiki pages to BayFac - using the same ontology and tags when exporting/importing from one service to the other | SweetWiki: <ul style="list-style-type: none"> - April-May-June 2007: implementation of the Learn-Nett space and first tests with a focus group - June 2007: validation of the scenario - September 2007: decision made to trial SweetWiki - September-December 2007: use of SweetWiki by the Learn-Nett coordination team (structure of the tutors’ practices base, tutors’ guide) - December 2007-May 2008: use of SweetWiki by the tutors during the training with the students BayFac: <ul style="list-style-type: none"> - October-November 2007: preparation of a scenario by the CoP mediator and the Service mediator - December 2007-January 2008: preparation of an ontology of the Learn-Nett documents with a focus group, validation by the Learn-Nett coordination team - April 2008: implementation of the Learn-Nett space on BayFac - April-May 2008: uploading documents and test of the space by a focus group - May-... 2008: extensive use by the tutors, students and coordination team for uploading and searching documents | Does the archiving of Learn-Nett documents improve the actual training with students by improving the pedagogical choices of the coordination team? Does the reification of the tutors’ practices improve the practice of the tutors and the tutors’ training? The potential added value concerns the process of preparation of the students training by the coordination team, the tutors’ practices and the visibility of the Learn-Nett outcomes outside the CoP. |
| | ePrep | Sharable and reusable document production (see the situation “Annotated Audio and Video for Multimedia Reification” in D.IMP.08, p.16) | LimSee3, Amaya, MediaWiki, e-Logbook | Interactions (through e-Logbook ?) between LimSee3, Amaya and MediaWiki for retrieving pedagogical content built i) with Amaya or LimSee3 and uploaded on the ePrep platform or ii) with MediaWiki on the Wikiprepas Website. Retrieving this existing content is important for CoP members who want to build new | SweetWiki, Amaya, LimSee3, e-Logbook <ul style="list-style-type: none"> - First trial for the elaboration and validation of the PALETTE scenario for the ePrep CoP on June 2, 2007 (22 attendees – 11 CoP members and 11 PALETTE researchers - http://www.eprep.org/communaute/actu_CoP/CR020607.html). - Second trial for the implementation of this scenario on the occasion of the second ePrep | The specific question of research is the change of teachers’ practices through the use of PALETTE services for the preparation and delivery of courses. The potential added value can be considered at two levels: the |

| Generic Scenarios | CoPs | Activities to be observed | Services used | Services interactions required by activities | Schedules | Main questions of research and potential added value |
|-------------------|------|---------------------------|---------------|---|---|---|
| | | | | pedagogical modules for the ePrep platform or for the Wikiprepas Website. | <p>thematic seminar on November 5, 2007 (49 attendees of which 19 CoP members and 7 PALETTE researchers – http://www.eprep.org/seminars/seminar07/sem07_ProjectsTools.html).</p> <p>LimSee3</p> <ul style="list-style-type: none"> - Specific design-in-use sessions on October 17, 2007 (involving 2 CoP members and 2 PALETTE researchers http://www.eprep.org/communaute/actu_CoP/CR171007.html) and on January 24, 2008 (involving 10 CoP members and 3 PALETTE researchers http://www.eprep.org/communaute/actu_CoP/CR240108.html). - Specific design-in-use meetings involving Jean-Marc, ePrep CoP member, and two LimSee3 researchers for the preparation of the presentation of the design-in-use output to the EC (a history course uploaded on the ePrep platform). <p>Amaya</p> <ul style="list-style-type: none"> - Design-in-use steps conducted by 3 CoP members (Damien in December 2006, Stéphane in March/April 2008, Nathalie in March 2008 – including a face-to-face day meeting on March 19, 2008 at INRIA-Rhône-Alpes) for the elaboration of a physic course (XHTML and MathML) uploaded on the ePrep platform. <p>SweetWiki/MediaWiki</p> <ul style="list-style-type: none"> - Development of a draft ontology for the ePrep CoP, highlighting the social structure of the CoP on June/July 2007. - Development of the Wikiprepas Website with MediaWiki since November 2007. <p>e-Logbook</p> <ul style="list-style-type: none"> - Customisation of e-Logbook for the CoP in October 2007 (the activity ePrep, three sub-activities and dynamic invitations to join e-Logbook are created by the coordinator of the CoP and e-Logbook developers). <p>MediaWiki, Amaya, LimSee3, e-Logbook: further steps</p> <ul style="list-style-type: none"> - Follow-up of the cooperation between CoP members and PALETTE developers for the | practice of the individual teachers and the practice of other teachers thanks to discussions and exchanges with those who use PALETTE services. |

| Generic Scenarios | CoPs | Activities to be observed | Services used | Services interactions required by activities | Schedules | Main questions of research and potential added value |
|-------------------|------------------|---|--|---|--|---|
| | | | | | preparation of the 2008 ePrep International Workshop where CoP projects developed with PALETTE tools will be presented on May 16, 2008 (120 attendees of which 25 CoP members and 2 PALETTE researchers - http://www.eprep.org/workshops/workshop08/workshop08.php). | |
| | TIC-FA TIC-EF | <u>Analysis and comparison of educational environments through two models</u> Producing CoP resources Build CoP memory Searching CoP resources (see the situation "Classify, Share and Search Information" in D.IMP.08, p. 12) | Amaya BayFac + other non PALETTE tools | 1) Create and use templates with Amaya to produce documents 2) Classify these documents with BayFac | - End of March 2008: scenario validated on by CoP members and mediator. - 5/4/08 : specification of two templates sent to INRIA Grenoble - 14/4/08: templates available - 15/4/08: feedbacks => version OK with new Amaya snapshot on 29/4 - November 2008: test of interoperability between Amaya templates and DocReuse - November 2008: use with CoP members + management of activities - November-December 2008: classification of productions with BayFac | What evolves in the representations and the practices of the members of CoPs TIC-EF and TIC-FA following the use of the tools/services PALETTE concerning the production of documents? The potential added value is the development of new practices by the trainers forming the CoP in their own courses and training. |
| | TIC-FA TIC-EF | <u>Keep a logbook</u> Producing CoP resources (see the situation "Production of Logbooks" in D.IMP.08, p.16) | Amaya | 1) Analyze the experience of learning by keeping a logbook produced by Amaya. | September 2008-January 2009: each week, members of CoPs fill the logbook and send it to the animator s two days before the next course. | What evolves in the representations and the practices of the members of CoPs TIC-EF and TIC-FA following the use of the tools/services PALETTE concerning the production of documents? The potential added value is the development of new practices by the trainers in their own courses and training (TIC-FA) and by the future teachers (TIC-EF). |
| | TIC-FA TIC-EF | <u>The ICT invariants</u> Producing CoP resources (see the situation "Production and Searching of CoPs Pages on ICT Invariants" in D.IMP.08, p. 17) | SweetWiki | 1) Create a new page in the SweetWiki service to give his/her point of view, to exchange on what it is an invariant and to give examples. 2) Create hyperlinks from a global page to another page. | October 2008: punctual use of SweetWiki service to create new pages and hyperlinks between them. | What evolves in the representations and the practices of the members of CoPs TIC-EF and TIC-FA following the use of the tools/services PALETTE concerning the collaborative edition and the production of documents? The potential added value is the development of new practices by the future teachers in their own |

| Generic Scenarios | CoPs | Activities to be observed | Services used | Services interactions required by activities | Schedules | Main questions of research and potential added value |
|----------------------|------------------|--|---|--|--|--|
| | | | | | | courses. |
| | TIC-FA TIC-EF | <p><i>Tags</i></p> <p>Build CoP memory Searching CoP resources (see the situation “Production and Searching of CoPs Pages on ICT Invariants” in D.IMP.08, p. 17)</p> | SweetWiki | Tag each page created in Sweetwiki and research productions | September 2008-January 2009: regular use of SweetWiki to tag and research the created pages within CoPs TIC-EF and TIC-FA | <p>What evolves in the representations and the practices of the members of CoPs TIC-EF and TIC-FA following the use of the tools/services PALETTE concerning the collaborative edition and the production of documents?</p> <p>The potential added value is the development of new practices by the future teachers in their own courses.</p> |
| 2. Debate & decide | TIC-FA | <p><u><i>Debate about the sense of belonging to the CoP TIC-FA</i></u></p> <p>Debate about an issue (see the situation “Debate about the Feeling to belong to a CoP” in D.IMP.08, p. 20)</p> | CoPe_it! | Debate about the sense of belonging to a community of practice | - December 2008: punctual use of CoPe_it! to debate. | <p>What evolves in the representations and the practices of the members of CoPs TIC-EF and TIC-FA following the use of the tools/services PALETTE concerning the collaborative edition and the production of documents? The potential added value is the development of new practices by the future teachers in their own courses.</p> |
| 3. Identity building | TFT | Management of members – CoP identity building | SweetWiki, Doodle, Buzzword, Mailing list tft@lists.ulg.ac.be | <p>Warning of the members each time something happens on the wiki</p> <p>Downloading of produced documents (i.e. produced with Buzzword and then exported) on the wiki</p> | <p>- April the 30th 2008: f2f meeting with the members and planning of different tasks at a distance: homepage, collaborative writing of an article to publish in a magazine</p> <p>- May the 14th: the article is published on the Web http://www.sixi.be/Transition-entre-la-formation-et-le-travail-infirmier_a709.html. It will be read more than 3.000 times.</p> <p>- May the 15th 2008: a few (but less) homepages are fulfilled (despite the help of the manual awareness system managed by the mediators)</p> <p>- From June till September, some members organise local meetings building a kind of local cell. They publish</p> | <p>How is TFT developing its identity? To what extent do the PALETTE services participate in the development of its identity?</p> <p>The potential added value is the specification of communal objectives of the CoP, the definition of the individual and collective skills and competences, and the possibility to reach new members. Shortly said, we might consider that the main objective is the building of the CoP strictly speaking.</p> |

| Generic Scenarios | CoPs | Activities to be observed | Services used | Services interactions required by activities | Schedules | Main questions of research and potential added value |
|-------------------|------------------|---|---------------|--|--|---|
| | | | | | <p>the reports on the wiki. They try to upload files on the wiki, but the meet a lot of problems to do it through IE, the only browser they use.</p> <p>- October: a new meeting is planned and organized with some CoP members using the mailing list, the mail , the wiki and short f2f meetings.</p> <p>- November the 6th 2008: f2f meeting. A reflection about the interest of beeing a CoP occurs. Other tools and services are shown (Doodle, Google Docs, Buzzword...).</p> <p>Roles are defined more precisely. A member decide to be responsible for the agenda of the next f2f meeting. Another one decides to organise the meeting. Others members decide to work together to the building of other short local cells.</p> <p>- November the 7th 2008: a member publish a document on Buzzword and five other members spontaneously collaborate, the same day. The member responsible for the organisation of the next meeting immediately sends a doodle poll to fix the schedule</p> <p>- A member creates a Buzzword document to help members sharing their opinion about the topics to be discussed.</p> | |
| | TIC-EF TIC-FA | <p><u>Creation of its profile</u> (// adaptation of Yellows Pages LOR)</p> <p>Managing CoP members (see the situation “Adaptation of Yellow Pages” in D.IMP.08, p.23)</p> | SweetWiki | <p>1) Register to the service and create a WikiName</p> <p>2) Create some workpages for each CoP</p> <p>3) Explore the created workpages proper to its CoP</p> <p>4) Create a homepage (its personal profile)</p> <p>5)Tag the pages according to the ontology of the CoPs</p> | <p>- September-October 2008: creation of the homepages by CoPs and trials of SW.</p> <p>- November-December 2008: data analysis</p> | <p>What evolves in the representations and the practices of the members of CoPs TIC-EF and TIC-FA following the use of the tools/services PALETTE concerning the collaborative edition and the production of documents?</p> <p>The potential added value is the development of new practices by the future teachers in their own courses.</p> |

| Generic Scenarios | CoPs | Activities to be observed | Services used | Services interactions required by activities | Schedules | Main questions of research and potential added value |
|-------------------|------------------|---|---------------|---|--|--|
| | TIC-FA TIC-EF | <p><u>Edit and share news on the Tics</u>: “The WikiNews”</p> <p>Producing, sharing and indexing (tag) resources Managing CoP activities (see the situation “News Editing about the ICT in Education” in D.IMP.08, p. 23)</p> | SweetWiki | Use of SweetWiki to produce and tag short “news” about the CoP interests that are sharable resources | - End of September 2008-January 2009: Regular use of SweetWiki to produce WikiNewsTICFA and WikiNewsTIC-EF | <p>What evolves in the representations and the practices of the members of CoPs TIC-EF and TIC-FA following the use of the tools/services PALETTE concerning the collaborative edition and the production of documents?</p> <p>The potential added value is the development of new practices by the trainers in their own courses and training (TIC-FA) and by the future teachers (TIC-EF).</p> |
| | TIC-FA TIC-EF | <p><u>Netiquettes</u></p> <p>Managing CoP activities about the collaborative edition (see the situation “Creation of Netiquettes Pages” in D.IMP.08, p. 23)</p> | SweetWiki | Use of SweetWiki service to conceive charters collecting recommendations of use or behaviours to avoid when using a Wiki, a Chat, an email and a forum. | - November 2008: Punctual use of SweetWiki to produce some netiquettes | <p>What evolves in the representations and the practices of the members of CoPs TIC-EF and TIC-FA following the use of the tools/services PALETTE concerning the collaborative edition and the production of documents?</p> <p>The potential added value is the development of new practices by the trainers in their own courses and training (TIC-FA) and by the future teachers (TIC-EF).</p> |
| | TIC-FA | <p><u>Analysis of LORs</u>: <i>MapCop and adaptation of Yellows pages</i></p> <p>Managing CoP activities Management CoP members (see the situation “Adaptation of Yellow Pages” in D.IMP.08, p.23)</p> | Sweetwiki | In addition of using SweetWiki to sustain the realization of LORs, use this service to criticize and analyze the LORs in a collaborative way. | - October 2008: Punctual uses of SweetWiki to sustain the activities linked to the courses and produce some comments about the realized LORs within the CoP. | <p>What evolves in the representations and the practices of the members of CoPs TIC-EF and TIC-FA following the use of the tools/services PALETTE concerning the collaborative edition and the production of documents?</p> <p>The potential added value is the development of new practices by the trainers in their own courses and training (TIC-FA) and by the future teachers (TIC-EF).</p> |

Appendix 5 – TFT survey questionnaire

Cette enquête est anonyme. □Y répondre avec soin devrait nous permettre d'améliorer nos choix en matière de soutien pédagogique et technologique à vous fournir dans les mois qui viennent.

Les Communautés de pratique et les activités du projet

1. Le groupe est actuellement constitué d'infirmières professeurs et d'infirmières ICAN. Pensez-vous que ce groupe constitue une communauté de pratique ?

Oui

Non

Sans avis

2. Pensez-vous que les infirmières professeurs / les ICAN seules constitueraient des communautés plus cohérentes ?

Oui

Non

Sans avis

3. Faites-vous partie ou avez-vous fait partie, en dehors de votre institution, d'autres groupes d'échanges à propos de votre métier ?

Oui

Non

4. Si oui, utilisez-vous les TIC pour communiquer, produire ?

Oui

Non

5. Pensez-vous que les rencontres en face à face sont les seuls moyens d'échanger valablement et efficacement ?

Oui

Non

Sans avis

6. Quelle est votre prédisposition à échanger des informations concernant l'exercice de votre métier ?

Totale

Partielle

Inexistante

7. Craignez-vous des remarques négatives de votre employeur concernant certains de ces échanges ?

Oui

Un peu

Pas du tout

8. Êtes-vous de ceux qui pensent que les technologies de la communication (Internet) peuvent soutenir efficacement le développement d'une communauté de pratique ?

Oui

Non

Sans avis

9. Depuis le début du projet, avez-vous répondu aux différentes suggestions d'activités qui vous ont été faites (remplissage de la page personnelle, écriture d'un article, réaction aux avis des autres personnes...) ?

Souvent

Parfois

Jamais

10. Si vous ne l'avez jamais fait, quelle en est la raison principale ?

Vous n'avez pas le temps

Vous ne savez pas comment faire

Vous trouvez ça peu pertinent

Autre :

11. Depuis le début du projet, avez-vous pris une initiative dans le cadre de TFT et en dehors des activités qui vous ont été proposées ?

Oui

Non

12. Si oui, la(les)quelle(s) ?

Écrire un article

Organiser une réunion

Envoyer un message à la liste de diffusion

Autre :

13. Pensez-vous que le projet est inadéquat ?

Oui

Non

Sans avis

14. Si oui, c'est parce que...

Les problèmes qu'il est censé résoudre sont peu nombreux

Les problèmes qu'il est censé résoudre sont peu importants

Il ne permettra pas de résoudre ces problèmes

Autre :

15. Que pensez-vous de la manière dont les membres du groupe se sentent concernés par ce projet ? Selon vous, ils le sont...

Peu

Moyennement

Tout à fait

Les technologies

16. Comment jugez-vous vos compétences en matière d'usage des technologies. Ce sont celles d'un...

Novice

Habitué

Expert

17. Consultez-vous votre courrier électronique au moins une fois par jour (Weekend exclus) ?

Oui

Non

18. Dans l'exercice de votre métier, êtes-vous amené(e) à produire des documents informatisés ?

Oui

Non

19. Si oui, vous utilisez pour ce faire

Logiciel de traitement de texte

Logiciel de présentation

Autre :

20. Par rapport à l'usage d'Internet, vos craintes en matière de sécurité et/ou confidentialité sont...

Importantes

Raisonnables

Inexistantes

Les services du projet

21. Avant le début du projet, saviez-vous ce qu'était un wiki ?

Oui

Non

22. Avez-vous trouvé compliqué l'usage du wiki TFT ?

Oui

Non

Sans avis

23. Auriez-vous trouvé intéressant de pouvoir découvrir d'autres services/outils afin de pouvoir choisir le(s) plus approprié(s) ?

Oui

Non

Sans avis

24. Le wiki permet à chaque utilisateur de créer sa page personnelle. Avez-vous créé la vôtre ?

Oui

Non

Je ne sais pas

25. Si non, c'est parce que...

Vous n'avez pas trouvé comment faire

Vous avez trouvé ça trop compliqué

Vous trouvez que ça prend trop de temps

Vous ne souhaitez pas donner des informations à votre sujet

Vous ne trouvez pas ça intéressant

26. Pouvez-vous évaluer subjectivement l'utilisabilité de SweetWiki ?

/ 10

27. Pouvez-vous évaluer subjectivement l'adéquation de SweetWiki à aider votre communauté (groupe) à se développer ?

/ 10

28. Pouvez-vous évaluer l'importance des freins à travailler intensivement à distance ? (0 - pas important | 5 - très important)

| | 0 | 1 | 2 | 3 | 4 | 5 |
|--|---|---|---|---|---|---|
| Votre disponibilité | | | | | | |
| Votre maîtrise des environnements numériques (ordinateurs) | | | | | | |
| Votre réticence à échanger | | | | | | |
| Un manque de connaissance d'outils de communication adaptés | | | | | | |
| La pression institutionnelle | | | | | | |
| La culture du métier | | | | | | |
| L'insécurité liée à l'exploitation d'Internet | | | | | | |
| L'infrastructure (conditions d'accès à Internet) | | | | | | |
| La capacité des intervenants à formaliser leur pratique(<i>l'écrire, la décrire soigneusement et clairement vs. en parler librement</i>) | | | | | | |

29. Vous utilisez un ordinateur...

Plusieurs fois par jour
 Au moins une fois par jour
 Moins d'une fois par jour
 Très rarement

30. Vous utilisez régulièrement (au moins une fois par semaine), un programme...
 de traitement de texte
 de courrier électronique
 de navigation (sur le Web)
 spécifique à votre profession
 Autre :

31. Vous visitez le wiki TFT...
 À intervalles réguliers
 Très occasionnellement
 Jamais

32. Si vous ne le consultez jamais (ou très rarement), c'est parce que...
 Vous n'avez pas le temps
 Vous n'y pensez pas
 Vous n'y trouvez rien de pertinent
 Vous n'avez rien à y chercher
 Vous ne trouvez pas ce que vous cherchez
 Autre :

33. Depuis le début du projet, il vous est arrivé de contacter d'autres membres du groupe
 Souvent
 Rarement
 Jamais

34. Si oui, vous l'avez fait par...

Téléphone

Courrier électronique

La liste de diffusion

Contact direct

Appendix 6 – Questionnaires CoPe-L – Usages du Portail et de BayFac

Identification :

- Nombre d'années d'ancienneté dans la CoPe-L :
- Origine :
 - Membre CRP :
 - Représentant d'une société luxembourgeoise :

Portail CoPe-L

Avant de répondre, vous pouvez vous connecter au Portail CoPe-L (<http://> , le login est **xxx** et le mot de passe est "**xxxx**").

- 1) En juillet et août 2008, combien de fois environ vous êtes-vous connecté au Portail CoPe-L ?
 - 0
 - entre 1 et 5 fois
 - entre 5 et 10 fois
 - plus de 10 fois
- 2) Les informations que vous avez reçues concernant l'utilisation du portail vous ont-elles paru utiles et suffisantes ? Précisez.
- 3) Les usages du Portail proposés vous paraissent-ils utiles (faites une croix dans les cases appropriées) ?

| | Très utile | Utile | Moyennement utile | Peu utile |
|---|------------|-------|-------------------|-----------|
| Avoir des informations sur les membres de la CoPe-L | | | | |
| Accéder au calendrier de la CoPe-L | | | | |
| Accéder à BayFac | | | | |
| Accéder au Blog | | | | |

- 4) Par rapport à l'usage « Avoir des informations sur les membres de la CoPe-L », quel intérêt y voyez-vous pour vous et pour les autres membres ?
- 5) Quelle différence percevez-vous entre le Portail et le YahooGroup utilisé précédemment ?

- 6) Si vous n'avez pas utilisé le Portail, quelles en sont les raisons ?
- 7) Connaissez-vous éventuellement d'autres outils (services Web que vous utilisez actuellement ou pas) qui ont les mêmes fonctionnalités que le Portail ? Lesquels ?
- 8) Lequel de ces autres outils choisiriez-vous pour la CoPe-L et pourquoi ?

BayFac

Avant de répondre, vous pouvez vous connecter à l'espace BayFac de la CoPe-L (<http://>).

- 1) Depuis avril 2008, combien de fois environ vous êtes-vous connecté à l'espace BayFac (<http://>) ?
 - 0
 - entre 1 et 5 fois
 - entre 5 et 10 fois
 - plus de 10 fois
- 2) Avant votre première utilisation, comment avez-vous pris connaissance de l'outil BayFac (plusieurs réponses sont possibles) ?
 - Information par un des membres de la CoPe-L
 - Membre du Focus Group PALETTE
 - Lecture du document d'aide fourni
 - Autre (précisez)
- 3) Le ou les moyens que vous avez adoptés pour vous familiariser avec BayFac vous ont-ils paru utiles et suffisants ? Précisez.
- 4) Les usages de BayFac vous paraissent-ils utiles (faites une croix dans les cases appropriées) ?

| | Très utile | Utile | Moyennement utile | Peu utile |
|---|------------|-------|-------------------|-----------|
| (activité préliminaire) Concevoir une ontologie des documents de la CoPe-L | | | | |
| Rassembler à un endroit unique les documents produits dans la CoPe-L | | | | |
| Rechercher ces documents dans la base | | | | |
| Mettre ces documents à disposition du public | | | | |

- 5) Dans quelle mesure avez-vous participé personnellement à ces usages (faites une croix dans les cases appropriées) ?

| | 5 fois ou plus | Entre 1 et 5 fois | 1 fois | Jamais |
|-------------------------|----------------|-------------------|--------|--------|
| (activité préliminaire) | | | | |

| | | | | |
|--|--|--|--|--|
| Concevoir une ontologie des documents de la CoPe-L | | | | |
| Rassembler à un endroit unique les documents produits dans la CoPe-L | | | | |
| Rechercher ces documents dans la base | | | | |
| Mettre ces documents à disposition du public | | | | |

- 6) Par rapport aux activités « Rassembler à un endroit unique les documents produits dans la CoPe-L » et « Rechercher ces documents dans la base », quel intérêt y voyez-vous pour vous et pour les autres membres de la CoPe-L ?
- 7) Quelle différence voyez-vous entre BayFac et un site Web ou une base de données standard ?
- 8) Si vous n'avez pas utilisé l'outil BayFac, quelles en sont les raisons ?
- 9) Pour la suite de la vie de la CoPe-L, quelles suggestions d'usages de BayFac proposeriez-vous ?
- 10) Connaissiez-vous éventuellement d'autres outils (services Web que vous utilisez actuellement ou pas) qui ont les mêmes fonctionnalités que BayFac ? Lesquels ?
- 11) Lequel de ces outils choisiriez-vous pour la CoPe-L et pourquoi ?

Appendix 7 – Questionnaires Learn-Nett – Uses of SweetWiki and BayFac

Identification :

- Votre rôle (ou vos rôles) actuel dans Learn-Nett :
- Les autres rôles que vous avez éventuellement remplis auparavant dans Learn-Nett :
- Nombre d'années d'ancienneté dans Learn-Nett :

SweetWiki

Avant de répondre, vous pouvez vous connecter au SweetWiki Learn-Nett (<http://argentera.inria.fr:8080/swikiln> - pour le Web privé, le login est **learnnett** et le mot de passe est "xxxxxxx"). L'aide a été mise à disposition dans l'espace Moodle des tuteurs Learn-Nett : (http://tecfax.unige.ch/moodle/file.php/26/moddata/forum/400/6665/Aide_SweetWiki.pdf).

- 9) Entre janvier 2007 et juin 2008, combien de fois environ vous êtes-vous connecté au SweetWiki Learn-Nett (<http://argentera.inria.fr:8080/swikiln>) ?
 - 0
 - entre 1 et 5 fois
 - entre 5 et 10 fois

- plus de 10 fois

10) Avant votre première utilisation, comment avez-vous pris connaissance de l'outil SweetWiki (plusieurs réponses sont possibles) ?

- Formation et essais personnels
- Participation à une formation organisée (précisez laquelle)
- Information par un des membres de Learn-Nett
- Lecture du document d'aide fourni
- Autre (précisez)

11) Le ou les moyens que vous avez adopté pour vous familiariser avec SweetWiki vous a-t-il paru utile et efficace ? Précisez.

12) Les usages de SweetWiki proposés dans Learn-Nett vous paraissent-ils utiles (faites une croix dans les cases appropriées) ?

| | Très utile | Utile | Moyennement utile | Peu utile |
|---|------------|-------|-------------------|-----------|
| Rédiger la charte des partenaires Learn-Nett | | | | |
| Décrire et partager les pratiques des tuteurs | | | | |
| Mettre à disposition un guide des tuteurs | | | | |

13) Dans quelle mesure avez-vous participé personnellement à ces usages (faites une croix dans les cases appropriées) ?

| | 5 fois ou plus | Entre 1 et 5 fois | 1 fois | Jamais |
|---|----------------|-------------------|--------|--------|
| Rédiger la charte des partenaires Learn-Nett | | | | |
| Décrire et partager les pratiques des tuteurs | | | | |
| Mettre à disposition un guide des tuteurs | | | | |

14) Par rapport à l'activité « Décrire et partager les pratiques des tuteurs », quel intérêt y voyez-vous pour vous, pour les tuteurs et pour les futurs tuteurs ?

- 15) Par rapport à l'activité « Décrire et partager les pratiques des tuteurs », quel intérêt y voyez-vous pour la formation des tuteurs (qu'ils soient nouveaux ou anciens) ?
- 16) Quelle différence percevez-vous entre SweetWiki et un Wiki standard ?
- 17) Si vous n'avez pas utilisé l'outil SweetWiki, quelles en sont les raisons ?
- 18) Pour les éditions suivantes du projet Learn-Nett, quelles suggestions d'usages de SweetWiki proposeriez-vous ?
- 19) Connaissez-vous éventuellement d'autres outils (services Web que vous utilisez actuellement ou pas) qui ont les mêmes fonctionnalités que SweetWiki ? Lesquels ? Lequel choisiriez-vous pour Learn-Nett et pourquoi ?

BayFac

Avant de répondre, vous pouvez vous connecter à l'espace BayFac Learn-Nett (<http://sim.tudor.lu/palette/LearnNett2>). L'aide a été mise à disposition dans l'espace Moodle des tuteurs Learn-Nett : http://tecfa.unige.ch/moodle/file.php/26/Palette/aide_bayfac/aide_recherche.html.

- 12) Depuis avril 2008, combien de fois environ vous êtes-vous connecté à l'espace BayFac Learn-Nett (<http://sim.tudor.lu/palette/LearnNett2>) ?
 - 0
 - entre 1 et 5 fois
 - entre 5 et 10 fois
 - plus de 10 fois
- 13) Avant votre première utilisation, comment avez-vous pris connaissance de l'outil BayFac (plusieurs réponses sont possibles) ?
 - Formation et essais personnels
 - Information par un des membres de Learn-Nett
 - Lecture du document d'aide fourni
 - Participation à la réflexion collective sur l'ontologie des documents Learn-Nett depuis décembre 2007
 - Autre (précisez)
- 14) Le ou les moyens que vous avez adopté pour vous familiariser avec BayFac vous a-t-il paru utile et efficace ? Précisez.
- 15) Les usages de BayFac proposés dans Learn-Nett vous paraissent-ils utiles (faites une croix dans les cases appropriées) ?

| | Très utile | Utile | Moyennement utile | Peu utile |
|---|------------|-------|-------------------|-----------|
| (activité préliminaire) Concevoir une ontologie des documents Learn-Nett | | | | |
| Rassembler à un | | | | |

| | | | | |
|--|--|--|--|--|
| endroit unique les documents produits dans le projet Learn- Nett | | | | |
| Rechercher ces documents dans la base | | | | |
| Mettre ces documents à disposition du public | | | | |

16) Dans quelle mesure avez-vous participé personnellement à ces usages (faites une croix dans les cases appropriées) ?

| | 5 fois ou plus | Entre 1 et 5 fois | 1 fois | Jamais |
|---|----------------|-------------------|--------|--------|
| (activité préliminaire) Concevoir une ontologie des documents Learn-Nett | | | | |
| Rassembler à un endroit unique les documents produits dans le projet Learn- Nett | | | | |
| Rechercher ces documents dans la base | | | | |
| Mettre ces documents à disposition du public | | | | |

17) Par rapport aux activités « Rassembler à un endroit unique les documents produits dans le projet Learn-Nett » et « Rechercher ces documents dans la base », quel intérêt y voyez-vous pour vous, pour les tuteurs et pour les futurs tuteurs ?

18) Par rapport à l'activité « Décrire et partager les pratiques des tuteurs », quel intérêt y voyez-vous pour la formation des tuteurs (qu'ils soient nouveaux ou anciens) ?

19) Quelle différence voyez-vous entre BayFac et un site Web ou une base de données standard ?

20) Si vous n'avez pas utilisé l'outil BayFac, quelles en sont les raisons ?

21) Pour les éditions suivantes du projet Learn-Nett, quelles suggestions d'usages de BayFac proposeriez-vous ?

- 22) Connaissez-vous éventuellement d'autres outils (services Web que vous utilisez actuellement ou pas) qui ont les mêmes fonctionnalités que BayFac ? Lesquels ? Lequel choisiriez-vous pour Learn-Nett et pourquoi ?

Appendix 8 – Questionnaires TIC-FA/TIC-EF

Questionnaire relatif à l'usage des outils/services technologiques

Le questionnaire a pour but d'identifier vos représentations et certaines de vos pratiques en matière de TIC. Suite aux activités que vous allez mener cette année, vos représentations et vos usages des outils technologiques vont évoluer.

N'hésitez pas à commenter ou nuancer vos réponses, qu'il y ait ou non un espace prévu à cet effet. Ceci ne peut qu'enrichir votre réflexion et les débats menés à ce propos.

| | |
|---------|--|
| oui/non | <p>1. J'utilise des outils/services technologiques pour produire des documents Si oui, lesquels et pour que faire ? </p> |
| oui/non | <p>2. J'utilise des outils/services technologiques pour éditer collaborativement un document Si oui, lesquels et pour que faire ? </p> |

Voici différentes propositions, pour chacune d'entre elles, précise ton degré de familiarité.

(? = je ne comprends pas la question)

| | ? | Jamais | Quelquefois | Régulièrement | Toujours |
|---|---|--------|-------------|---------------|----------|
| 3. J'utilise le traitement de texte pour rédiger un document collectif | | | | | |
| 4. J'utilise le mode "suivi des modifications" dans le traitement de texte | | | | | |
| 5. Il m'arrive de modifier la feuille de style d'un document | | | | | |
| 6. J'ai le réflexe "Aide en ligne" | | | | | |
| 7. J'utilise le tableur pour gérer des éléments statistiques | | | | | |
| 8. J'ai recours aux "masques" lorsque j'utilise un logiciel de présentation assistée par ordinateur | | | | | |
| 9. J'utilise des modèles de présentation prêts à l'emploi | | | | | |
| 10. J'utilise l'historique de navigation | | | | | |
| 11. J'annote mes documents afin de les classer et de les partager | | | | | |
| 12. J'utilise des logiciels pour communiquer et échanger mes idées avec d'autres | | | | | |
| 12a. J'entoure quel type d'outil j'emploie : | | | | | |
| - Courriel | | | | | |
| - Forum | | | | | |
| - Blog | | | | | |
| - Chat | | | | | |
| - Vidéoconférence | | | | | |
| - Audioconférence | | | | | |

13. Pour moi, l'apprentissage collaboratif, c'est

Figure 1: first page of questionnaire

14. En général, je travaille collaborativement :

1. oui, avec et sans les TIC
2. oui, avec les TIC
3. oui, sans les TIC
4. non

15. Voici une série d'adjectifs. Coches-en maximum 5 (par colonne) qui te font penser à la production de document et à l'édition collaborative à l'aide des TIC

| | Production de document | Édition collaborative |
|----------------|------------------------|-----------------------|
| Je trouve ça : | | |
| Efficace | | |
| Innovant | | |
| Possible | | |
| Inconnu | | |
| Chronophage | | |
| Intéressant | | |
| Valorisant | | |
| Constructif | | |
| Inutile | | |
| Contrainant | | |
| Partageable | | |

L'apprentissage collaboratif implique :

| | Pas du tout d'accord | Pas d'accord | D'accord | Tout à fait d'accord |
|---|----------------------|--------------|----------|----------------------|
| 16. une répartition des tâches par les membres de l'équipe | | | | |
| 17. la définition d'étapes claires et précises | | | | |
| 18. la notion d'échec | | | | |
| 19. des réunions, des contacts réguliers entre tous les participants | | | | |
| 20. de l'autonomie chez chaque individu | | | | |
| 21. moins de temps pour produire un travail de qualité que si je le faisaie seul(e) | | | | |
| 22. de laisser une totale liberté au travail d'apprentissage (apprentissage, méthode de travail, ...) | | | | |
| 23. un changement dans ses habitudes de travail | | | | |
| 24. l'usage des TIC pour soutenir les échanges et la production commune | | | | |
| 25. la présence d'un médiateur, d'un libérateur | | | | |
| 26. de travailler avec des personnes que l'on connaît bien pour être efficace | | | | |
| 27. d'avoir des règles communes de fonctionnement négociées | | | | |
| 28. d'établir des règles précises pour chacun | | | | |

Un logiciel d'édition collaborative :

| | Yes/Non? | Commentaires (n'hésitez pas à aller au dos de la feuille) |
|--|----------|---|
| 29. permet de créer un document à plusieurs de manière synchrone | | |
| 30. permet de modifier un document existant, quel qu'en soit l'auteur | | |
| 31. permet de réifier des connaissances individuelles | | |
| 32. permet de finaliser un document diffusible | | |
| 33. implique de renoncer en partie à la propriété de ses idées | | |
| 34. nécessite d'accepter de partager quelque chose d'inchangé | | |
| 35. nécessite la présence de tous les auteurs à un moment au moins | | |
| 36. demande un investissement en temps inférieur à une production individuelle | | |

Pour éditer un document lisible par un navigateur (IE, Firefox, Safari, ...).

| | Vrai | Faux | Commentaires (n'hésitez pas à aller au dos de la feuille) |
|--|------|------|---|
| 37. on doit connaître le langage HTML | | | |
| 38. on peut le mettre en page à l'aide de styles prédéfinis (titres, liste d'items, ...) | | | |
| 39. on peut changer sa mise en page automatiquement | | | |
| 40. on peut créer de nouveaux styles (CSS) | | | |

To determine the representations of the members, some questions concern the use of technological tools to produce documents (Q.1) and to edit them in a collaborative way (Q.2). We seek to evaluate the general degree of familiarity with ICTs (Q.3-12; 49-55) as well as apprehending the representations of the collaborative learning (Q.13-14; 16-18). Through these questions, our objective is to know if the use of the PALETTE tools/services influence the manner to recourse to technological tools to carry out certain tasks and the way the CoP members work, and in particular, in a collaborative way. By connecting these data with others from logbooks, we also try to find whether familiarity with the ICTs and the collaborative learning as well as the use of technological tools influence favorably the acceptability of the PALETTE tools/services. Lastly, these questions allow highlighting the representations which have a favorable impact or those which are obstacles for the use of the tools.

From the same point of view, items (Q.15) refer to perceptions of members. That allows seeing if the use of the PALETTE tools/services makes evolve favorably their perceptions with regard to the collaborative edition and the production of documents as well as the collaborative learning and the use of technological tools.

Moreover, one large majority of the questions concerns the subject of course (matter) (Q.29-58). Indeed, we seek to know if the use of the PALETTE tools/services brings new knowledge and practices as for the collaborative edition and the production of documents. The difference between the answers to the two questionnaires allows measuring the evolution (or not) of the learners' representations, practices and visualizing up to what point is matching or not the prescribed practices. In parallel, we try to observe if the fact of having erroneous and/or negative representations influences the use of the PALETTE tools/services.

(The full questionnaire is available at https://bscw.ercim.org/bscw/bscw.cgi/d524671-6/*/*/*/*/*/*Questionnaire%20repr%20c3%a9sentations%20des%20CoPs%20TICEF%20et%20TICFA.htm)

Figure 2: second page of questionnaire

Un éditeur Web [X(HTML)] permet de créer un document

| | Oui | Non | Commentaires (n'hésitez pas à aller au dos de la feuille) |
|---|-----|-----|---|
| 41. où l'on voit directement le résultat de ce qu'on édite (WYSIWYG) | | | |
| 42. qui respecte des standards (normes) | | | |
| 43. interprétable/affichable par n'importe quel navigateur | | | |
| 44. dont les éléments (paragraphe, tableau, liste d'items, ...) sont codés de manière transparente | | | |
| 45. dans lequel on peut attribuer une sémantique à différents éléments | | | |
| 46. récupérable dans un document édité via un traitement de texte sans perdre sa mise en page | | | |
| 47. qui garantit la pérennité de son contenu (pas perdu en raison de l'évolution des versions du logiciel d'éditeur) | | | |
| 48. labile sur différents types de supports (ordinateur, PDA, téléphone portable, ...) | | | |
| 49. qui intègre des composantes multimédia | | | |
| 50. qui permet d'échanger et de réutiliser des données à l'aide (dans) d'autres logiciels (sans utiliser la fonction copier/coller) | | | |
| 51. éditable par plusieurs personnes | | | |
| 52. accessible par n'importe qui | | | |
| 53. modifiable seulement par des personnes autorisées | | | |
| 54. incluant un système d'annotations (tags) | | | |
| 55. qui permet de créer des liens vers une autre page Web | | | |

Lorsque tu recherches des documents sur le Web,

| | Oui | Non | Commentaires (n'hésitez pas à aller au dos de la feuille) |
|---|-----|-----|---|
| 56. tu employes un moteur de recherche et des mots-clés | | | |
| 57. tu recoures à un processus de marquage (tags, ontologies, facettes, ...) | | | |
| 58. tu capitalises le fruit de tes recherches en créant des bookmarks (favoris) | | | |

L'usage des TIC permet

| | Pas du tout d'accord | Pas d'accord | D'accord | Tout à fait d'accord |
|--|----------------------|--------------|----------|----------------------|
| 59. de contribuer à la capitalisation de ressources et de connaissances | | | | |
| 60. de gérer des ontologies | | | | |
| 61. de gérer des économies | | | | |
| 62. d'adopter des standards permettant d'échanger des documents sans problème | | | | |
| 63. de mener un débat débouchant le plus souvent sur une structuration des connaissances | | | | |
| 64. de créer une communauté à laquelle je m'identifie(rai) | | | | |
| 65. d'augmenter les interactions sociales au sein de mon groupe | | | | |

Figure 3: third page of questionnaire