



Education and Culture

# Socrates

## Minerva

# Promoting good practice

## Lessons from a collection of European eLearning experiences

### Report 1

The report was written within the framework of the Socrates – Minerva project “*Social networks and knowledge construction promotion in e-learning contexts*” 229692-CP-1-2006-1-IT-MINERVA-M ([projects.deis-ce.unibo.it/minerva/](http://projects.deis-ce.unibo.it/minerva/)).

Disclaimer: This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

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Year: 2007

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# **SECTION 1**

## **INTRODUCTION, RATIONALE AND METHODOLOGY**





## 1. INTRODUCTION

In the last 20 years the development of new technological tools, and the increasing need for life-long learning, led to a growing attention to online education, i.e., e-learning activities. In turn, the interest toward e-learning has given rise to a considerable amount of activities, experiences, and research on the application of technology for supporting learning activities - especially applied to higher education. Thus, Open and Distance Learning (ODL) and Information and Communication Technology (ICT) in education have become more and more a field of interest both for scholars and practitioners involved in learning activities (“providers” of education at different level and in different contexts).

Globally, this phenomenon has attracted a rapidly growing amount of research facing up technology-supported learning from different theoretical perspectives (for a review: Larreamendy-Joerns & Leinhardt, 2006; Resta & Laferrière, 2007). Moreover, its multi-faceted character made e-learning a trans-disciplinary field of inquiry, including psychology (educational, social and cognitive psychology), learning sciences (pedagogical and didactic sciences, educational technology), computer science (artificial intelligence, agent-based systems), and communication sciences.

The increasing interest and use of online education is generating a vast repertoire of experiences, having in common the use of technologies within learning activities. Now, a teacher or tutor who aims at organizing an e-learning course, can wonder whether all learning experiences based on technologies may offer the same level of effectiveness. This necessarily leads to a further question: what are the most effective strategies to adopt when planning and realizing e-learning activities, in order to foster knowledge acquisition in learners?

The European project **“Social networks and knowledge construction promotion in e-learning contexts”** (<http://minerva.ing2.unibo.it>) was born out of these emerging interests and demands from the field. Through the adoption of a sort of “knowledge transfer” approach, it is meant at providing ICT-practitioners with those good practices and guidelines, drawn from empirical research in psychology of education, which are particularly focused on the idea of social nature of knowledge and abilities developed within the Vygotskian tradition. Our main goal, more specifically, is that of detecting, describing, and suggesting educational practices, and technological artefacts, by virtue of research evidence concerning the complex relationships between social interaction and cognitive activities, which may foster the beneficial effects of social interaction on knowledge construction.

## ***2. RATIONALE***

Three major education perspectives have been identified within the sphere of online education (Larreamendy-Joerns & Leinhardt, 2006): the presentational view, the performance-tutoring view, and the epistemic-engagement view. In the presentational and performance-tutoring views the pedagogical model is based on single learner interactions with the respective content which should be learned, by means of the web-based system. In these cases (e.g., those based on accessible and standardized Learning Objects) “obsolete” uni-directional forms of knowledge transmission from the teacher (the expert) to the learner (the novice) are reproduced. Attention is devoted to the designing and delivering of high-quality didactic contents, which should ensure proportionate high-level learning outcomes. Interaction is mostly conceived as the possibility to perform effective exchanges between a learner and a technological environment that is supposed to provide the learner with all the best possible supports.

Educational research over the last 20 years has indicated that learning is a social process, i.e., a co-construction of knowledge process that enables learners to become members of a community of practices through active participation (Lave, 1997). According to Larreamendy-Joerns and Leinhardt (2006), the epistemic-engagement view, based on the socio-co-constructivist approach and sociocultural theories of learning, relies on social interactions and considers that the learning process takes place in the context of social interaction. In this approach, social interaction (in a three-polar view of the learning process involving students-teacher-content) more than student-content interaction (a bi-polar view), is viewed as the privileged occasion for learning.

There is significant empirical evidence that the cognitive processes that are necessary for deep learning and information retention occur in social interaction, and that “collaborative learning” is the “royal road” to knowledge acquisition (e.g. Kreijns et al. 2003). Experimental studies on social influence, argumentation, and reasoning suggest that these advanced cognitive outcomes are more likely to appear when participants are engaged in specific interaction situations (peer-to-peer interaction, minority influence, active cliques in virtual social networks, etc.), whereas other and more diffused social dynamics (teacher-centred networks, etc.) are more likely to promote superficial information scrutiny and passive reproduction of delivered knowledge (Butera et al. 2005; Butera & Mugny, 2001; Schwarz et al. 2000).

Moreover, the principles animating the learning environment design are of interest, especially as far as the role of the technological aspects and tools in the implementation of online collaboration (see Dougiamas & Taylor, 2002), the organization of group activities (e.g Dickinson, 1995; Little, 1991; Ryan & Deci, 2000), and the role of the tutors’ direct intervention and feedback (e.g., Hattie & Timperley, 2007; Schweizer, Pächter, & Weidenmann, 2001) are concerned. All these aspects may influence (support or undermine) the learning process.

Therefore, we focused on the following four general aspects of the designing of e-learning courses, which influence learning processes and outcomes:

1. the collaborative online work and the practices used to foster interaction, taking into account the key role of the teacher/tutor. we assume that the design of the learning environment has an influence on the learning processes and represent an essential dimension of interest. In fact, experimental studies indicate that social interactions affect individual cognitive development (Doise & Mugny, 1984). In specific, studies on social influence, argumentation, and reasoning suggest that these advanced cognitive outcomes are more likely to appear when participants are engaged in specific interaction situations.
2. The organization of the online work, starting from the assumption that planning and organizing the online activities enhance collaborative learning and especially that autonomy in learning produce high level of motivation, self-awareness and, thus, better learning (e.g. Deci & Ryan, 2000; Dickinson, 1995)
3. The direct intervention of the teacher/tutor in terms of feedback (content-related and collaboration-related) and of evaluation, since that the benefit of providing prompt and substantive feedback in e-learning settings showed that teaching with feedback is more effective than teaching without feedback (e.g., Schweizer, Paechter, & Weidenmann, 2001).
4. The technical realization of the collaboration, that is, the influence that technological tools exert on the learning scenario while allowing and facilitating collaboration (e.g. Dougiamas & Taylor; 2002);

In sum, despite the accumulation of research on the effectiveness of collaborative learning, it may be suggested that learning, and co-construction of knowledge, are not an inevitable consequence of allowing students to interact with each other (e.g. Cacciamani & Mazzoni, 2006; Hoadley, 2004; Lehtinen, 2003; Mandl et al. 2006). The simple collocation of students in groups does not guarantee collaboration: social interaction does not take place automatically just because an environment makes it possible from the technological point of view. Thus, even if the power of social interaction and of collaborative learning is clear and undeniable, deeming social interaction as an instructional precept that requires no further explication and that constitutes itself a guarantee of learning is a pitfall to avoid (Kreijns et al. 2003).

In light of these considerations, we may now deal with the questions of how to stimulate social interaction and to foster collaborative learning, and which actions or practices can be carried out. The study we present is focused on these issues and looks for examples of “practices”, which may be useful to this purpose.

### 3. AIM OF THE STUDY

The aim of this study is to identify examples of actions and strategies used within a population of e-learning courses, in order to facilitate collaboration and support it in respect to the learning outcomes. The focus of the study is on the “strategies” reported by practitioners of e-learning to promote the “good practices” identified by previous experimental research.

### 4. METHODOLOGY

#### Instrument

A questionnaire (see Annex 1) was created *ad hoc* to study a collection of noteworthy e-learning experiences<sup>1</sup>, promoting online interaction between participants and/or teachers. The questionnaire consists of five main levels: General data, technical aspects, collaborative activities, organization of group work and feedback provision. Each of these dimensions is further subdivided into more specific aspects.

- **General data**

The general data section is meant to provide an overview of the specific e-learning course. Therefore, the questionnaire initially involves questions on three main aspects:

1. The e-tutor: name, e-mail address, phone number, organization, experience of e-learning courses

*Example item: “Do you have any experience in the design and realization of collaborative online courses?”*

2. the e-learning course: the number of times that the same course was implemented, the year in which it was activated for the first time, title of the course, start/end dates, course description, pedagogical-didactical concept, objectives of the course, type of education/training, country, and
3. the participants to the e-learning course: number of participants, their experience with e-learning courses, number of groups and members per group.

*Example item: “Were participants familiar with online group work?”*

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<sup>1</sup> Already implemented in the countries of our project partners.

This first information already helps in drawing some conclusions, as far as structure, procedure, and didactics of the e-learning courses are concerned. It offers a particular help in searching for best practices and possible reasons that may explain why some courses are performing better than others.

- **Technical aspects**

The technical aspects section is aimed at obtaining information both on the platform, through which the e-learning course was offered, and on the available tools and features of the e-learning platform. To this purpose, questions about the names of the platforms, and about the tools for online collaboration, as well as for supporting online collaboration, (such as features to support groups or workspaces or to track online activities), are asked.

Further, the questionnaire asks for the reasons and criteria that guided the choice and design of the e-learning platform, and for indications on whether the platform was used in the intended way – individually and in collaboration.

Specifically, the issues of collaboration and communication are examined through the following seven items:

1. technical possibilities to collaborate,
2. the most effective tool for collaboration,
3. the extent of using different features for communication (like e-mail),
4. the extent of using specific tools for supporting collaboration (like assigning roles and permissions),
5. differences in collaboration between the intended way of communicating, and that which was actually employed,
6. the added value of the learning platform for collaboration, and
7. the added value of computer-mediated collaboration.

The questionnaire also includes items concerning the acceptance of the e-learning platform.

- **Collaborative activities**

In the section dedicated to collaborative activities, the questionnaire differentiated between **cognitive** and **social** aspects of collaborative learning. As far as the **cognitive** aspects of collaborative online learning are concerned, the questionnaire includes five items, which focus on online discussion, argumentation, collaborative problem solving, knowledge exchange, and which consider different perspectives. The structure of these dimensions presented constant features:

A *first* step, in which the importance of each of these dimensions is evaluated through a six-point Likert scale (from 1 - not important, to six, - very important); a *second* step, where e-tutors are asked whether they intervened to foster the specific collaborative activity, and a *third* step, in which, if the answer to the previous question was positive, they are asked how they intervened, and, respectively, if the answer was negative, they are asked why they did not intervene.

	1 - Not important	2	3	4	5	6 - Very important	No answer
<p>* How important was it for you to have participants involved in argumentation (e.g. exchanging points of view, expressing counter-arguments, evaluating each other's opinions, justifying their arguments)?</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>* Did you intervene to promote argumentation?</p> <p><input checked="" type="radio"/> Yes</p> <p><input type="radio"/> No</p>							
<p>* What action did you take to promote argumentation (please give an example)?</p> <div style="border: 1px solid black; height: 50px; width: 100%;"></div>							

Figure 4-1: Example of dimension "Argumentation"

The **social** dimension comprises eleven questions concerning dysfunctional phenomena of group work. These included interpersonal conflicts, superficial discussions for avoiding conflicts, imposing group members, dysfunctional competition, addressing the tutor rather than group members (2 items), ignoring minorities, lack/diffusion of responsibility, balanced participation, and different group goals (2 items).

The structure includes two questions: After explaining the respective phenomenon, e-tutors firstly are asked whether they intervened, and secondly, if yes, how they intervened, and if not, why they did not intervene.

<p>Constructive group collaboration requires that participants debate different points of view and defend conflicting points of view. Sometimes such conflicts may give rise to interpersonal problems.</p>
<p>* Did you intervene to promote the preservation of positive relationships between group members when they discussed conflicting points of view?</p> <p><input checked="" type="radio"/> Yes</p> <p><input type="radio"/> No</p>
<p>* What action did you take to promote the preservation of positive relationships between group members (please give an example)?</p> <div style="border: 1px solid black; height: 50px; width: 100%;"></div>

Figure 4-2: Example of dimension "Interpersonal conflict"

- **Organization of the group work**

As far as the dimension on organizing the group work is concerned, two items are asked: The first involves the importance of organizing group activities themselves, the second the long-term planning of group activities. Again, the structure is threefold: First, e-tutors evaluate on a Likert scale from 1 (not important at all) to six (very important) the importance of each aspect. Second, the questionnaire asks for intervention and in a third step, if yes, the method of intervention, or, if no, the reason for not intervening is asked.

The figure displays three sequential questionnaire items:

- A Likert scale question: "How important was the autonomy of participants in organising their group work activities?". The scale ranges from 1 (Not important) to 6 (Very important), with a "No answer" option. All radio buttons are unselected.
- A yes/no question: "\*Did you intervene to support participants in the organisation of the group-work activities?". The "Yes" option is selected.
- An open-text question: "\*What action did you take to promote group work activities (please give an example)?". A text input box is provided for the answer.

Figure 4-3: Example of dimension "Organizing group activities"

- **Giving feedback**

The last dimension comprises giving feedback. Here, four aspects were of main relevance:

- giving content-specific feedback or feedback on collaborative activities
- evaluating group results and group activities
- methods of evaluation and
- influence of the given feedback on collaborative activities.

For the first aspect with its two items, again, the structure was threefold as the dimension on cognitive activities and on organizing group work. First, the importance of giving feedback is asked, second whether e-tutors intervened, and third, if yes, how they intervened, and if not, why they did not intervene.

\* **1 - Not important**   **2**   **3**   **4**   **5**   **6 - Very important**   **No answer**

How important was it for you to give content-related feedback to participants?

                

\*Did you give content-related feedback to your participants?

Yes  
 No

\*How did you provide content-related feedback (please give an example)?

**Figure 4-4: Example of dimension “Content-specific feedback”**

The instrument has been translated into different languages of the European partners and anonymously submitted to a sample of administrators/supervisors of e-learning experiences.

## Participants

A sample of administrators/supervisors answered the online questionnaire describing 78 e-learning experiences. We collected significant experiences concerning *distance learning* (full or blended) *providing online interactions* between participants or between participants and teacher.



## **SECTION 2**

### **RESULTS**



## 5. General Data

A sample of administrators/supervisors of e-learning experiences answered the online questionnaire describing 78 e-learning experiences (see Annex 2); some respondent filled out more than one questionnaire, each one related to a different e-learning course.

The 47.4% of courses were compulsory (52.6% were voluntary), the 73.1% were implemented several times (see Table 5-1) while for the 26.9% of courses was the first time. Concerning course start and duration, the oldest started in 1995, but the best part started around 2005 (see Table 5-2) and went on, on average, for 14 to 24 weeks (see Table 5-3 and Table 5-4).

**Table 5-1: Number of times**

Partner	M	SD	Min	Max
Italy	2.89	2.08	1	8
Finland	6.15	7.45	1	30
France	4.00	3.90	1	15
Germany	12.33	27.68	2	100

**Table 5-2: Year of first implementation**

Year	N
1995	1
1998	2
1999	1
2000	5
2001	4
2002	6
2003	6
2004	8
2005	13
2006	9
2007	2
No answer	21

**Table 5-3: Courses duration (months)**

Partner	M	SD	Min	Max
Italy	3.93	2.71	1	12
France	6.00	2.44	3	11
Germany	3.64	0.84	2	5

**Table 5-4: Courses duration (weeks)**

Partner	M	SD	Min	Max
Finland	15.10	10.70	3	39

The most important type of education is *Higher Education/University* (74.4%). 19.2% of courses took part in *Adult continuing education* (see Table 5-5). Respondents furthermore reported 2 other types of education ("*further education for medical doctors*" and "*for higher education, university and professional training*"). Only 26.9% of respondents said they did not have any experience in the design and realization of collaborative online courses (see Table 5-6).

**Table 5-5: Type of education/training**

	N	%
School education	1	1.3
Higher Education/University	58	74.4
Vocational training	2	2.6
Adult continuing education	15	19.2
Other	2	2.6
No answer	-	-

**Table 5-6: Respondent's experience in the design and realization of collaborative online courses**

	N	%
Yes	57	73.1
No	21	26.9
No answer	-	-

Concerning the pedagogical background and didactical concepts of the e-learning experiences investigated, several respondents considered their courses as based on "blended learning" pedagogical conceptualization, and as based on collaborative learning or on problem based learning (see Table 5-7).

Table 5-7: Pedagogical description and didactical concepts

Partner		N
Italy	Blended learning	20
	Self study only	4
	Cooperative/collaborative learning	11
	Knowledge co-/construction	7
	Learning by doing	5
	Social constructivist model	1
Finland	This question did not work in the Finnish context: the courses were varied and did not use standard pedagogical formats	1
France	Computer science (8 courses)	8
	Documentation, information retrieval	3
	Communication and Pedagogy	6
	Others	2
	project, problem approach, cases studies	4
	forum / interactive simulation	4
	competencies certification	3
	courses and application exercises or online tests	2
	reading, analysis	1
	student work publication	1
	Germany	Problem-based learning
Constructivist theories		2
Blended Learning		3
Collaborative and communicative aspects		3

*Knowledge acquisition* and *knowledge application* are the objectives of the majority of e-learning experiences, they are objectives of the 88.5% and 80.8% of courses respectively. *Acquisition of social skills*, *elaboration of alternative solutions* and *problem solving abilities* are also objectives of a large number of courses (see Table 5-8). Respondents reported some other courses objectives, most frequent are *the autonomy in the use of technologies*, *planning skills* and *self-learning skills (autonomy, self-management, self-assessment, etc.)* (see Table 5-9).

**Table 5-8: Courses objectives**

	<b>N</b>	<b>%(*)</b>
Knowledge acquisition	69	88.5
Knowledge application	63	80.8
Acquisition of social skills	41	52.6
Elaboration of alternative solutions	33	42.3
Argumentation	23	29.5
Problem solving abilities	38	48.7
Testing e-learning technologies	28	35.9
Other	19	24.4

\* Multiple answers possible

**Table 5-9: Other courses objectives**

<b>Partner</b>		<b>N</b>
Italy	Autonomy in the use of technologies	3
	Planning skills	5
	Self-management and self-assessment skills	4
	Critical thinking promotion	1
	Analysis and synthesis skills	1
	Collaboration ability in the papers online development	1
	Ability to switch between different cognitive modes (for example from forum discussion to written synthesis)	1
Finland	Writing, evaluation and publishing competence	1
	Giving and receiving feedback from the peers	1
	Finnish language and web-based learning	1
	theoretical knowledge	1
France	Autonomy	1
	Construction	1
Germany	Acquisition of media competence	2
	Acquisition of self-learning competences	1
	Acquisition of skills for closing the gap between theory and practice	1

Concerning participants, 60 courses (76.9%) were a new experience for the students, and 18 (23.1%) were similar to other courses in the institution (see Table 5-10). The average number of learners attending the course ranges from 21.50, which refers to the German partner, to 100, which refers to the French partner; it is difficult to determine a precise number referring to the Italian partner, since some respondents indicated either the total number of course implementations (e.g., "> 5000"), the number of the last implementation (e.g., 5), or an average number (e.g., "15-20 every year"). In the majority of the experiences (73.1%) participants were divided into subgroups and each subgroup had on average from 5.29 to 12.24 members (for Finnish partner the number range from 2 to 20). Only 26.3% of participants were familiar with online group work (see Table 5-11).

**Table 5-10: New experience or similar to other courses**

	<b>N</b>	<b>%</b>
It was similar to other courses	18	23.1
It was a new experience for the students	60	76.9
No answer	-	-

**Table 5-11: Participants' familiarity with online group work**

	<b>N</b>	<b>%</b>	<b>Valid %</b>
Yes	15	19.2	26.3
No	42	53.8	73.7
No answer	21	26.9	-

Most e-learning experiences occurred in partner countries (for instance, 23 took place in Italy, 17 in Finland, 16 in France and 16 in Germany). The total number of countries, in which these experiences took place, is 17 (see Table 5-12).

**Table 5-12: Countries**

<b>Country</b>	<b>N</b>	<b>Country</b>	<b>N</b>
Austria	5	Italy	23
Belgium	4	Lithuania	0
Bulgaria	0	Luxembourg	0
Cyprus	0	Malta	0
Czech Republic	0	Netherlands	2
Denmark	1	Poland	1
Estonia	0	Portugal	0
Finland	17	Romania	2
France	16	Slovakia	0
Germany	16	Slovenia	0
Greece	2	Spain	1
Hungary	1	Sweden	0
Ireland	1	Swiss	10
Latvia	1	United Kingdom	2

## 6. Technological tools / Using the platform

Every partner has some platforms used by many courses, but it is difficult to find some better or, at least, more used platforms between partners, only *Moodle* is used by the respondents of many of them; almost all platforms are web-based (see Table 6-1, Table 6-2, Table 6-3 and Table 6-4). 37.2% of respondents had complete freedom in platform choice, but for 44.9% of them the platform was imposed (see Table 6-5). The most important criteria/features for the choice are: ease of use / usability, support for collaboration, technical assistance, communication tools, and open source / cost (see Table 6-6).

**Table 6-1: Platforms used (ITALIAN partner)**

Name	Web address	Type	N(*)
Moodle	<a href="http://moodle.org/">http://moodle.org/</a>	Web system	5
Educanet2	<a href="http://www.educanet2.ch">www.educanet2.ch</a>	Web hypertext	2
Synergeia	<a href="http://bscl.fit.fraunhofer.de">http://bscl.fit.fraunhofer.de</a>	Web system	2
Blackboard	Blackboard.unicatt.it	Stanza virtuale	1
ATutor	<a href="http://altaformazione.poloforli.unibo.it/A">http://altaformazione.poloforli.unibo.it/A</a>	LCMS	1
First Class	<a href="http://www.centernity.com">http://www.centernity.com</a>	Computer conference system	1
Cbt campus server	<a href="http://www.smartforce.com">http://www.smartforce.com</a>	Web system	1
ecomunico	<a href="http://www.ecomunico.ch">http://www.ecomunico.ch</a>	Web system, virtual environment	3
Dokeos	<a href="http://elp.lingue.unile.it/lms">http://elp.lingue.unile.it/lms</a>	Web system with video-conference tool	1
AlmaChannel	<a href="http://www.almachannel.unibo.it">http://www.almachannel.unibo.it</a>	Web learning platform	2
EiffE-L	<a href="http://www.eiffel.org">http://www.eiffel.org</a>	LMS Scorm 1.0 compliant	1
Platform designed by course provider	<a href="http://celfi.unimc.it/progetta/default1.asp">http://celfi.unimc.it/progetta/default1.asp</a>	Asp based systema	1
IBM LMS	<i>Not provided</i>	LMS	1
ilias	<a href="http://www.ilias.de">http://www.ilias.de</a>	Web based system	1
Piattaforma Progetto Capra	<a href="http://polo-poschiavo.ch">http://polo-poschiavo.ch</a>	Web system, virtual environment	1
Tiscali, Horde	<i>Not provided</i>	Web based system	1
Land of learning	<a href="http://www.landoflearning.it">http://www.landoflearning.it</a>	Web based system	1
MEDIT + Breeze live	<a href="http://www.laureaonline.polimi.it">http://www.laureaonline.polimi.it</a>	Web based system	1

\* Number of courses that use this platform.



**Table 6-2: Platforms used (FINNISH partner)**

Name	Web address	Type	N(*)
Workmates	<a href="http://wm.utu.fi/">http://wm.utu.fi/</a>	Web-based	6
WebCT	webct.utu.fi	Web-based	4
Optima	<a href="http://optima.oulu.fi">http://optima.oulu.fi</a>	Web-based	4
Moodle, Blackboard, Connect Pro	<a href="http://moodle.uku.fi/">http://moodle.uku.fi/</a> and <a href="http://blackboard.diak.fi">blackboard.diak.fi</a>	Web-based, video conference	1 each

\* Number of courses that use this platform.

**Table 6-3: Platforms used (FRENCH partner)**

Name	Web address	Type	N(*)
Moodle	<a href="http://ll.univ-poitiers.fr/dime/fad/">http://ll.univ-poitiers.fr/dime/fad/</a> <a href="http://agora.univ-paris3.fr/">http://agora.univ-paris3.fr/</a>	Web-based	-
Claroline	<a href="http://campus.claroline.com/claroline/courses/index.php?cid=3CFIE1A">http://campus.claroline.com/claroline/courses/index.php?cid=3CFIE1A</a>	Web-based	-
ACOLAD	<a href="http://www-ulp.u-strasbg.fr/article.php/0/19/1-080-121-205/enseignement-a-distance-ead">http://www-ulp.u-strasbg.fr/article.php/0/19/1-080-121-205/enseignement-a-distance-ead</a>  <a href="http://acolad.hemes.be/ACOLADNET/Page/PageAcolad/EnvironnementUtilisateur/ConsultationEnvironnementUtilisateur.aspx">http://acolad.hemes.be/ACOLADNET/Page/PageAcolad/EnvironnementUtilisateur/ConsultationEnvironnementUtilisateur.aspx</a>	Web-based	-
DOKEOS	<a href="http://www.dokeos.com">http://www.dokeos.com</a>	Web-based	-
OnlineFormapro	<a href="http://www.onlineformapro">http://www.onlineformapro</a>	Web-based	-
Siclina	<a href="http://siclima.univ-paris13.fr/articles/">http://siclima.univ-paris13.fr/articles/</a>	Web-based	-
CISCO	<a href="http://cisco.netacad.net">http://cisco.netacad.net</a>	Web-based	-
LearningSpace	<a href="http://www.ibm.com">http://www.ibm.com</a>	Web-based	-
Academy connexion	<a href="http://www.cisco.com/web/learning/netacad/index.html">http://www.cisco.com/web/learning/netacad/index.html</a>	Web-based	-
SPIP	<a href="http://www.spip.net">http://www.spip.net</a>	Tool, Web-based	-
Yahogroups	<a href="http://groups.yahoo.com">http://groups.yahoo.com</a>	Tool, Web-based	-
ContactOffice	<a href="http://www.contactoffice.fr">http://www.contactoffice.fr</a>	Tool, Web-based	-

\* Number of courses that use this platform.

**Table 6-4: Platforms used (GERMAN partner)**

Name	Web address	Type	N(*)
ComVironment	www.comvirement.de	LDMS	4
ETS bzw. DLS DistanceLearningSystem <sup>®</sup>	http://lmu-dls.learningsystem.de/	Web-based system	2
CLIX - Corporate Learning Information eXchange	<i>Not available</i>	Web-based knowledge and learning system	2
Adobe Acrobat Connect Professional	http://www.adobe.com/de/products/breeze /	Virtual classroom	1
Wiki, VC und concept grid	http://manyscripts.epfl.ch	Web-based system	1
Blackboard	http://www.uni-salzburg.at/elearning	LMS	1
WebCT	http://xanthippe.edu.uni- graz.at/webct/entryPageIns.dowebct	WebCT	1
Open EIS	www.openeis.de	Includes all types	1
Jones Knowledge - now Atutor	www.atutor.ca, www.jonesknowledge.com	Web-based	1
ILIAS	http://www.hsu-hh.de/ilias/	Web-based syste,	1
Alpha-Beta	www.alpha-eu.de	Web-based system	1

\* Number of courses that use this platform.

**Table 6-5: Platform choice**

	N	%
I had complete freedom of choice	29	37.2
I had some choices	14	17.9
I had no choice, or, for some reasons, the choice was imposed	35	44.9
No answer	-	-

**Table 6-6: Criteria/feature most important for the platform choice**

Partner	Criteria/features	N
Italy	Support for user collaboration	5
	Ease of use	7
	Adaptability to new needs	2
	Technical assistance	1
	Open source	3
	Cost	1
	Suitable to support educational processes	1
Finland	All participants ended up using the one that was preferred and made available by the employer	1
France	Easy to use	5
	Open source	3
	No choice	3
Germany	Usability	5
	Technical support	4
	Communication tools	3
	Functionality	2
	Availability	2
	Integrated CMS	2
	User administration	2
	Costs	2
	Didactical added value	1
	Stability of the platform	1

Only 11.5% of respondents said that the e-learning system they used was extra designed for the course, whereas 56.4% answered that the system was adopted and used in its original form (see Table 6-7). System architecture is described in different and not-homogeneous ways by partners' respondents, (see Table 6-8, Table 6-9, Table 6-10 and Table 6-11); for a more detailed and systematic description of e-learning platforms and existing standards, please see Annex 3.

**Table 6-7: E-learning system extra designed for the e-learning course**

	N	%
Yes, totally from scratch	9	11.5
Yes, partially by integrating existing platforms with ad-hoc developed subsystems	25	32.1
Not at all, the system was adopted and used in its original form	44	56.4
No answer	-	-

Table 6-8: System architecture (ITALIAN partner)

		N
User interface	Supported by browser HTML	8
	Supported by proprietary application	1
	Multilanguage interface	1
	Personalizable interface	1
Contents management	Via LCMS	5
	Learning Artifact	1
	Learning Object	5
	Database	5
Interaction management	Chat	8
	Map tool	2
	Agenda	1
	Electronic conference	1
	Diary	3
	Forum	4

Table 6-9: System architecture (FINNISH partner)

		N
User interface	User control panel, Options, Change password, Contact information, Calendar, Bookmarks, Objects	-
Contents management	'Environment' refers to an upper-level structure in which the workspaces are constructed.	-
	A 'workspace' is a mode in which it is possible to produce training and projects.	-
	The workspace consists of objects. An 'object' is the basic element in the workspace. One characteristic of an object is that its use can be administered by specifying the appropriate read and write permissions. In addition, objects can easily be combined to form different types of workspace structures.	-
Interaction management	Discussion forum, Private messages, Messages, Chat	-
	Web-based video conference system and every session has to be dealt with separately	-
Other	No answer or misunderstood the question	11

Table 6-10: System architecture (FRENCH partner)

The platforms are **principally web based** and offer classical functionalities (documents storage, forum, wiki, glossary, mail, whiteboard, chat...). Some of them propose also online tests.

**Table 6-11: System architecture (GERMAN partner)**

		N
User interface	Working with online learning modules (self-directed, own pace)	3
	Solving exercise tasks	3
	Developing own concepts	1
	Solving transfer cases/transfer modules	4
	Collaboration tools: e-mail, chat, forum, audio-and videoconferences	2
	Collaboration in communities	2
	Giving feedback	2
	Content management	2
	Tutorials	1
	Work plan	1
Contents management	Texts – written and spoken	14
	Videos	3
	Power point slides	3
	Animations	1
	Pictures	1
	Exercises	4
	Cases	4
	Data-bases	2
	Film	1
	Tele-tutors	1
Interaction management	Online program and online learning modules	5
	Collaborative case solving in forums	2
	Online conference system (audio/video)	3
	Asynchronous discussion	1
	Virtual classroom	1
	Mobile phone, PDA's	1
	Virtual communities	2
	Direct support by tutors	2
	Face-to-face meetings	5

## Technological tools for collaboration

Concerning collaboration, almost all e-learning experiences made available the *asynchronous* approach (98.7%), whereas only 46.2% made available the *synchronous* approach (see Table 6-12). In their evaluation of the most effective tools in fostering collaboration, respondents chose mainly asynchronous tools (see Table 6-13) where *Mail* and *Forum* represent the functions with the highest frequency of use (see Table 6-14).

**Table 6-12: Online collaboration approaches**

	N	% (*)
Synchronous	36	46.2
Asynchronous	77	98.7
No answer	-	-

\* Multiple answers possible

Table 6-13: Most effective tool in fostering collaboration

Partner	Tools	N
Italy	Forum	18
	E-mail	6
	Wiki	1
	Chat	8
	Map tool	1
	Cooperative exercises	1
Finland	Discussion forums [asynchronous communication]	8
	Synchronous communication	1
France	Forum	5
	Mail	5
	Chat	2
	Online tests, exercises	2
	Document storage	1
	Course in presence	1
	Videoconference	1
Germany	Forum	7
	E-Mail	4
	Synchronous communication	2
	Asynchronous communication	2
	Chat	2
	Videoconferencing	1
	Skype	1
	Virtual conference room	1
	SMS	1
	MMS	1
	Phone	1
	Face-to-face meetings	2

Table 6-14: Functions frequency of use

	N	Min	Max	M	SD
Mail	70	1	6	4.04	1.748
Chat	68	1	6	2.49	1.741
Forum	74	1	6	4.54	1.698
Video-conferencing	60	1	6	1.73	1.471
E-Meetings	58	1	6	1.66	1.319
Wiki	57	1	6	1.77	1.310
Glossary	61	1	6	2.62	1.872

**Table 6-15: Other communication tools**

Partner		N
Italy	Skype	6
	Telephone	6
	SMS	1
	MSN	5
	Face-to-face communication	3
Finland	Email	12
	Live meetings	3
	Phone	2
France	Personal email	5
	Skype	2
	MSN	2
	Webcam	1
	Blog	1
	Telephone	1
	Other chat	1
	Information retrieval	1
Germany	Personal e-mail	6
	Skype	3
	Virtual classroom	1
	Phone	3
	Instant messenger	1
	Face-to-face meeting	1
	SMS	1

**Table 6-16: Features frequency of use**

	N	Min	Max	M	SD
Support for groups	66	1	6	4.09	1.990
Support for workspaces	67	1	6	4.15	1.853
Assigning roles and permissions	69	1	6	3.51	1.960
Activity tracking	71	1	6	4.51	1.529
Task assignment	69	1	6	4.30	1.760
Evaluating/Testing knowledge	66	1	6	4.03	1.905

## Statistical data and use of the platform

The questionnaire investigated also the possibility for administrators/tutors to have access to statistical data (such as log files) referring to online activities of course participants. The answers reveal that 55.1% of respondents have had the possibility of using statistical data (see Table 6-17), and that 46.2% have used these data (see Table 6-18). As far as the type of data – data? is concerned, respondents made use principally of log files (see Table 6-19), and as for the purposes, they employed these data particularly in order to evaluate and monitor students' activity and to foster students participation (see Table 6-20).

**Table 6-17: Access**

	N	%
Yes	43	55.1
No	35	44.9
No answer	-	-

**Table 6-18: Use of the data**

	N	%
Yes	36	46.2
No	8	10.3
No answer	34	43.6

**Table 6-19: Type of data**

Partner		N
Italy	Exercises	1
	Log file (students access time, time spent by students in the system, frequency of material and pages by students, etc.)	14
	Chronology of messages	2
	Test	1
	Auto-evaluation diary	1
Finland	Log in/out data	6
	Type of activity while visiting platform	4
France	Results of evaluations	5
	Connections / activity by page	4
	Chat content	1
Germany	Log files	6
	Test results	2
	Login data	2
	Individual data	1
	All activities	1



**Table 6-20: Purpose of the use**

Partner		N
Italy	To individualize the inactive students and to motivate them	1
	To evaluate students	6
	To improve the course	2
	To evaluate students participation	3
	To evaluate the provided course	1
	To execute Social Network Analysis	2
Finland	To assess students' activity on the course	4
	To assess the amount of work students have to do	1
France	Evaluation	4
	Improve participation / motivation	4
	Study of the errors	1
Germany	Research	4
	Checking the activity of the participant	3
	Optimizing the learning environment	1
	Giving feedback to participants	1
	Supervising the course	2
	Activating participants	1

As for the use of the platform, on average respondents deemed the platform as well accepted and used by participants in the intended way (see Table 6-21). Only 80.8% of them noticed differences between the expected and the actual usage of the platform (see Table 6-22). Despite this result, some interesting examples of divergent usages of the platform emerged (see Table 6-23).

The added value of using a platform, especially in terms of learner's autonomy, learner's involvement, and the possibility to pursue co-construction of knowledge, is a perception shared by the majority of respondents (see Table 6-24 and Table 6-25). Furthermore, the added value of the human mediation is recognized by most teachers/tutors as well, and several motivations are identified, even though the majority of respondents did not provide explicit reasons, but simply emphasized its importance (see Table 6-26).

**Table 6-21: Use of the platform**

	N	Min	Max	M	SD
How did participants accept the platform in use?	77	2	6	5.06	1.092
Did participants actually use the platform in the intended way?	76	2	6	4.86	1.092

**Table 6-22: Difference between the expected and actual usage of the platform**

	N	%
Yes	15	19.2
No	63	80.8
No answer	-	-

**Table 6-23: Examples**

Partner		N
Italy	Forum barely used	1
	Traditional approaches preferred	1
Finland	Students found the platform difficult to use	1
	The forum was used less than expected	1
France	External chat have been used	1
	Automatic and direct links with other web site	1
Germany	Participants used a different e-mail system	2
	Forum was not used in the intended way	1
	Online activity was low	1

**Table 6-24: Added value of using a platform**

	N	Min	Max	M	SD
Learner autonomy	78	1	6	4.68	1.446
Learner involvement /implication (in his or her own learning	77	1	6	4.64	1.376
Learner acceptance of technological innovation	75	1	6	4.12	1.542
Learner acceptance of pedagogical innovation	76	1	6	4.43	1.408
Co-construction of knowledge	75	2	6	4.92	1.281

**Table 6-25: Further significant aspects**

	N	Min	Max	M	SD
Learning involvement	2	3	6	4.5	2.12
Better student evaluation	1	6	6	6	-
Use of a uniform learning environment	1	6	6	6	-
Better promotion of collaborative work	2	5	5	5	0
Better interaction with teacher	1	6	6	6	-
Better stimulus to reflection	1	5	5	5	-
Better sharing of material	1	6	6	6	-
Greater flexibility about time devoted to study	1	5	5	5	-
Construction of a professional community	1	6	6	6	-
Self-evaluation	1	-	-	-	-
Flexibility	1	-	-	-	-

Table 6-26: Added value of human mediation associated to the use of a platform

Partner		N
Italy	To guide students to the right use of the platform	3
	To stimulate students participation and to reduce the dropout caused by technical or motivational issues	7
	To promote co-construction and exchange of knowledge	3
	To support and guide student interactions	3
	To give students technical support	3
	To give students educational support	4
Finland	Almost all participants considered the human mediator an essential part of the course	12
	Reasons for this ranged from giving technical support to giving the course “a human face” and encouraging/helping students, thus resulting better learning results. Also, human mediator “imposes a form a social control”, but is still more flexible in problem situations than a computer	1
France	Essential, very important	9
	Involvement of participants	2
Germany	Exchange between teachers and learners, social interaction, social competence	6
	Independence of time	3
	Independence of space	5
	Self-guided and individualized learning	1
	Control of learning progress	1
	Joint working and problem solving	3
	Deeper knowledge for learning content	1
	Documentation of interaction	2
Acquisition of media competence	1	

## 7. Cognitive aspects

When looking at the collaborative activities, the questionnaire differentiated between **cognitive** and **social** aspects of collaborative learning. As to the **cognitive** aspects of collaborative online learning, the questionnaire includes five items involving the following dimensions: online discussion, argumentation, collaborative problem solving, knowledge exchange, and considering different perspectives. These items reflect the most relevant dimensions in the framework of the cognitive determinants of effective collaboration. Our aim was to ascertain the importance attributed by participants to each of the dimensions mentioned above, and to investigate the practices used by teachers/tutors in order to promote the achievement of them. Thus, we expected to determine some examples of good practices, which could be useful to foster the most important processes concerned in collaboration activities.

### Online discussion

E-tutors evaluated the promotion of online discussion as very important ( $M=5.10$ ,  $SD=1.335$ ,  $Min=1$ ,  $Max=6$ ), and 80.8% of them intervened to promote it (see Table 7-1). Methods, which were described by e-tutors, can be subdivided into 5 categories: course organization/structure (e.g. start discussion in presence and continue it online, compulsory participation to discussion, role playing, structure discussion with groups, deadlines, etc.); teachers/tutors actions (e.g. give feedback to learners' work and ask more, summarize work and point out omitted arguments, directly contact learners, etc.); tasks for learners (e.g. collaborative construction of a document, researches, polls, etc.); general suggestions (e.g. promoting group cohesion, reduce tensions, etc.); examples of more structured practices (e.g. propose some questions, stimulate learners who did not participate, send feedback to interventions and appreciate all learners' contributions) (see Table 7-2). The main reasons for not intervening are the following ones: because not necessary, because the collaboration in presence was sufficient, and for the importance of self organization (see Table 7-3).

**Table 7-1: Intervention**

	<b>N</b>	<b>%</b>
Yes	63	80.8
No	14	17.9
No answer	1	1.3

Table 7-2: Methods of intervention

Partner	Methods	N
Italy	Starting the discussion in presence, then asking learners to continue it online	4
	Asking questions and providing incentives	2
	Using role playing	1
	Asking the collaborative construction of a document	1
	Summarizing the work and pointing out omitted arguments	1
	Sending private message to foster motivation	1
	Promoting group cohesion	1
	Asking students to find problems and possible researches to carry out	1
	Making a contradictory/provocative statement	2
	Sending comments and feedback to learners' messages	3
	Proposing polls to encourage learners to adopt a definite position	1
	To assign tasks that must be discussed in the forum	1
	Proposing discussions about various information taken from the web	2
	Teacher/tutor proposed some questions that learners had to answer, b) teacher/tutor invited learners who don't participate (asking why) to intervene, c) teacher/tutor sent systematic feedbacks to learners who intervened, d) teacher/tutor appreciated all learners' contributions and asked more	1
	Teacher/tutor proposed a generic concept to discuss, the group created the first cognitive map, b) teacher/tutor introduced organizing elements to discuss with	1
Finland	Encouraging by providing an inspiring starting point for the discussion, replying/commenting students posts and asking for more information and insights	6
	Encouraging by making sure the students understand the meaning and goal of the discussion	1
	Encouraging by students were reminded of the discussion by email or in meetings	5
	Encouraging by using structured discussion (groups, deadlines for themes and tasks etc.)	2
France	Sending direct / personal mails	3
	Use contribution of participants to enhance the contents	2
	Give an opinion, guide the debate, asking for a precision	4
	New themes, new questions	1
	Reduce the tensions	1
	Troll	1
Germany	Directly contacting learners and inviting them to communicate about the problem	6
	Prompting the learners and giving specific instructions for online discussion	4
	Giving instructions for reflection	1
	Moderating collaboration	2

**Table 7-3: Reasons for not intervening**

Partner	Reasons	N
Italy	Because it wasn't meant to happen	1
	Because not needed	1
	Because the collaboration in presence was sufficient	1
Finland	There was no online group discussions	1
France	Self organization	3
	No online discussion	2
	Activity in the classroom	1
Germany	Not necessary	2
	Groups had a moderator themselves	1
	Pedagogical reasons	1

## Argumentation

According to respondents it's also important to have participants involved in argumentation ( $M=4.87$ ,  $SD=1.519$ ,  $Min=1$ ,  $Max=6$ ). The majority (78.2%) of teachers/tutors intervened to promote argumentation (see Table 7-4) and, above all, they intervened with their specific actions (e.g. moderation, feedback, provocation, synthesis, request for clarification, etc.); furthermore, they intervened by assigning tasks to learners (e.g. request to discuss their opinions or peers' opinions/choices) and with course organization/structure (e.g. guidelines on managing interaction, commenting in presence the forum, instructing beforehand how to argument, etc.) (see Table 7-5). Some teacher/tutor did not intervene, mainly in order to stimulate, and/or preserve learners' autonomy, or because not necessary/important (see Table 7-6).

**Table 7-4: Intervention**

	N	%
Yes	61	78.2
No	16	20.5
No answer	1	1.3

Table 7-5: Methods of intervention

Partner	Methods	N
Italy	Asking learners to argue some suggested opinions, if they didn't argue, inserting a link to important information	1
	Sending proactive and reactive mails	1
	Asking learners to give (and justify) opinions on peer's choices so that they can find a better solution	2
	Asking learners to discuss topics not yet treated	1
	Discussing opposite opinions	2
	Expressing a personal opinion	1
	Inserting differing data or divergent points of view in comparison with those emerged from the discussion	1
	Summarizing presented argumentations	1
	Pointing out if the argumentation is (or not) answering to the initial question	1
	Presenting again superficial or incorrect statements	1
	Asking open-ended questions based on participants' messages	1
	Commenting in presence the forum argumentation	1
	Proposing extreme points of view and provocations	1
	At the beginning of the course with some telephone call to stimulate participation	1
	Sending guidelines on how to manage interaction	1
	Calling attention to deadlines	1
Using lateral thinking theories	1	
Finland	Participating in argumentation by asking questions, asking for clarification, commenting and summarizing the discussions etc.	10
	Instructing beforehand how to argument	4
France	Asking for precisions, questioning	6
	Guide the debates	1
	Value the coordination of the group	1
	Help for information retrieval	1
Germany	Giving feedback and asking learners to argue or to state their opinion	9
	Moderating communication	3
	Giving instructions according to example-based learning	2
	Learning groups	1
	Playing the advocatus diaboli	1

**Table 7-6: Reasons for not intervening**

Partner	Reasons	N
Italy	To not influence the creative process	1
	Because was not necessary or important	3
	Because one of the course aims was to foster processes self-organization and self-evaluation	1
	Because there wasn't the occasion	1
Finland	Argumentation was not the focus of the course	2
France	Not necessary, not important for the course	3
	Self organization	1
Germany	Not necessary	2
	Not the intention of the course	1

### Collaborative problem or case solving

Teacher/tutors evaluated the collaboration in problem solving as important ( $M=4.54$ ,  $SD=1.807$ ,  $Min=1$ ,  $Max=6$ ), and 67.9% of them intervened to foster it (see Table 7-7). Interventions regarded mainly course organization/structure (e.g. guidance/rules, planned and sequential contributions, learners' roles/responsibilities, groups, guidelines, etc.) and teachers/tutors actions (e.g., giving help, guidance, indications, feedback, etc.) (see Table 7-8). Reasons for not intervening are various (e.g. not necessary, no case studies / problem solving, difficulties of transforming knowledge in problem solving, etc.) (see Table 7-9).

**Table 7-7: Intervention**

	N	%
Yes	53	67.9
No	24	30.8
No answer	1	1.3



Table 7-8: Methods of intervention

Partner	Methods	N
Italy	Giving suggestions and guidance	1
	Creating working groups	1
	Suggesting the use of the forum to collaborate at the final paper writing	1
	Asking the development of a product with many group members' planned and sequential contribution	1
	Sending mails (carbon copy) to all group members and providing solutions gradually to permit other members' contributions	2
	Asking students to work cooperatively on a translation (working on a translation is problem solving)	1
	Assigning a role of responsibility to not active group members	1
	Making some statistics	1
	Giving specific tasks to different group members	1
	Giving individual support online (mail, telephone) and in presence (also in small groups)	2
	Presenting some different answers to the same question and asking members to discuss about every answer	1
	Creating interest groups with members with same expectations/preferences	1
	Finland	Providing feedback, further instructions, guidance and encouragement
Structuring the task: e.g. stimulus, "brainstorm", collaboration, solution, feedback...		2
Face-to-face work to promote collaboration, asking questions, dividing students into groups, control (collaboration part of course requirements)		1
Face-to-face work to promote collaboration		1
France	Help, guide, suggest way of research, indication of some tools	5
	Common work group to be returned	2
	Promoting some groups for their good coordination	1
	Validation of the student work	1
	Giving some documents	1
	Redefinition of the responsibilities of each participant	1
	Sending a mail to the participants of a group	1
Germany	Giving guidelines or instruction for problem solving	6
	Directly asking learners to take part in the collaborative problem solving	3
	Design of the task	3
	Giving individual feedback	1

**Table 7-9: Reasons for not intervening**

Partner	Reasons	N
Italy	No case studies / problem solving	3
	Because it wasn't meant to happen	1
	To foster self-organization	1
	Because the work was used for students' assessment	1
	For the difficulties of transforming transferred knowledge in problem solving	1
	Because already a good collaboration so intervention not needed	1
	Because was unimportant	1
	Because they worked together, but in presence	1
Finland	Problem solving not the focus of the course, students didn't need any guidance, or teacher was looking for self-directed learning	1
	Problem solving not the focus of the course	1
France	Not necessary	3
	Not enough time	1
	Not important	1
Germany	Not necessary	3
	Not the task of the moderator	1

### Exchange of knowledge

Respondents evaluated the exchange of knowledge as very important ( $M=5.19$ ,  $SD=1.227$ ,  $Min=1$ ,  $Max=6$ ), and 73.1% of them intervened to promote it (see Table 7-10). Described methods belong to following categories: course organization/structure (e.g. creation of virtual/real groups, planned and sequential contribution, etc); teachers/tutors actions (e.g. feedback, personal mails, expression of issues and criticisms, etc.); tasks for learners (e.g. open-ended questions, ePortfolio, etc.); general suggestions (e.g. "peripheral" learners stimulation, promotion of reflection, etc.); examples of more structured practices (e.g. progressive inquiry method) (see Table 7-11). The main reasons for not intervening are the following ones: because not necessary and because sufficiently done in presence (see Table 7-12).

**Table 7-10: Intervention**

	N	%
Yes	57	73.1
No	20	25.6
No answer	1	1.3

Table 7-11: Methods of intervention

Partner	Methods	N
Italy	Using the progressive inquiry method: students find problems, propose their theories, evaluate proposed theories with the integration of scientific information, then refine problems to discuss	1
	Creating a virtual/real group	1
	Sending mails (carbon copy) to all group members, suggesting tools for the solution, stimulating the reflection and providing solutions gradually to permit other members' contributions	2
	To foster the exchange of new, just discovered, information that students tended not to share	1
	Expressing issues and criticisms on tools, methods, etc.	1
	To stimulate students to discuss their points of view and accept other students' points of view	2
	Communicating scientific information taken from important journals	1
	Stimulating "peripheral" learners	1
	Assigning to each learner a specific material to read and synthesize, then other learners had to read and comment, with questions and criticisms to the summary writer; turn and turn about every learner had to synthesize the whole teaching unit, therefore he had to ask information to all summary writers	1
	Stimulating all learners' participation	1
	Creating a specially provided forum and animating it	1
	To create a shared links database	1
	Providing open-ended questions based on forum discussion tasks	1
	Providing intervention of specialized teachers	1
	To foster the use of an ePortfolio	1
	To create interest groups with members with same expectations/preferences	1
Finland	Asking further questions, summing up the discussion and providing new lines for the group's discussions	5
	Asking if the participants had personal experiences or further information	3
	Guiding and encouraging students to do so	3
	Providing the discussion forum and enabling e-mail exchange	2
	Structuring the task	2
	I asked them to write their own tips, word lists, web links etc. and share them with others	1
France	Promoting posts on the forum	3
	Sharing documents, giving documents	2
	Promoting work / communication between the participants of a group	1
	Suggest way of research	2
	Personal mails	1
Germany	Directly asking learners to exchange specific knowledge in the form of feedback	6
	Giving an adequate task	3
	Giving adequate literature	1
	Prompting reflection	1

**Table 7-12: Reasons for not intervening**

Partner	Reasons	N
Italy	Because not necessary	1
	Because sufficiently done in presence	3
	Because used model ("EPICT") imply this aspect and intervention is not needed	1
	Because "not implemented"	1
Finland	There was a face-to-face period where the issue was dealt with	1
	Not enough resources to control this	1
France	Not necessary	3
	Not enough time	1
Germany	Not intended	2
	It was not possible to see whether learners were engaged or not	1
	Not forcing participants to exchange their knowledge	1
	Not necessary	1

### Considering different perspectives

62.8% of the teachers/tutors intervened to foster the consideration of different perspectives (see Table 7-13), and actually respondents consider this aspect important ( $M=4.92$ ,  $SD=1.489$ ,  $Min=1$ ,  $Max=6$ ). Interventions regarded mainly course organization/structure (e.g. subdivision of work between groups and subsequent integration, face-to-face meetings, etc.) and tasks for learners (e.g. discussion synthesis, draw conclusions, ePortfolio, etc.) (see Table 7-14). Reasons for not intervening are various (e.g. not necessary, sufficiently done in presence, self-organization, etc.) (see Table 7-15).

**Table 7-13: Intervention**

	N	%
Yes	49	62.8
No	28	35.9
No answer	1	1.3

Table 7-14: Methods of intervention

Partner	Methods	N
Italy	Asking to one group member to synthesize the discussion	1
	Asking to highlight two particularly important ideas emerged from the group work	1
	Helping to draw concrete and effective conclusions from the discussion	1
	Subdividing the work between groups and asking a subsequent integration	1
	To give a documentation and process model, using the “maven” system	1
	Remembering learners that it’s better to take into account and discuss others’ points of view	1
	Organizing discussions between group members with different points of view	1
	To ask the integration of individual synthesis into a collective one	1
	To ask the integration of individual synthesis into collective concept maps	1
	Mediating and monitoring	1
	Providing in the platform the paper after correction	1
	Providing the ePortfolio that has this function	1
	To allow the meeting, in presence, of students with same interests	1
Finland	Also, grouping students into small groups	3
	Structuring the studies according the idea of problem based learning	1
	Summing up the different viewpoints and encouraging the participants to share their opinions, learn from others and ask for rationales from their peers	2
	Face-to-face meetings where the each work was discussed	2
	Guiding students and tutors to do so	1
	Providing news, statements and such to promote discussion	1
France	Answering e-mail, publishing contribution on the site	2
	Forcing to take into account an interesting idea	1
	Accepting different points of view	1
	Re-organization of groups composition	1
	Promoting exchanges between groups	1
Germany	Specific design of the task	4
	Prompting learners to consider their collaborators’ perspectives	3
	Asking questions	2

Table 7-15: Reasons for not intervening

Partner	Reasons	N
Italy	Because not necessary	5
	Because sufficiently done in presence	2
	Because it was not expected	2
	Joint knowledge construction was not the focus of this course	1
	Students had experienced in group work and didn’t need guidance	1
France	Not necessary	2
	Self-organization	2
Germany	Not necessary	2
	Task or content was too specific	2
	Learners were responsible for themselves	2

## 8. Social aspects

This section comprises eleven questions dealing with dysfunctional phenomena of group work, as far as the **social** dimension of collaboration is concerned. These included interpersonal conflicts, superficial discussions for avoiding conflicts, imposing group members, dysfunctional competition, addressing the tutor than group members (2 items), ignoring minorities, lack/diffusion of responsibility, balanced participation, and different group goals (2 items).

These items investigate the most relevant dimensions in the framework of the social aspects of the collaboration. Our aim was to ascertain whether each social phenomenon had happened during the described e-learning courses (by explaining them), and then ascertain whether the respondents intervened to avoid dysfunctional social dynamics or to promote more functional ones. Besides, we asked participants to describe how they intervened and, if not, why they did not intervene.

As a result, we expected to find out some examples of good practices, which could help in fostering the most important social processes involved in collaboration activities, and in avoiding major pitfalls or difficulties, which may be encountered during the development of an e-learning experience.

### Interpersonal conflicts

Concerning the role of teachers/tutors in avoiding interpersonal conflicts, only 37.2% (see Table 8-1) of them said they intervened to preserve positive relationships between participants during collaboration. Most interventions consisted in actions taken by teachers/tutors (e.g. mediation, appreciation of differences, moderation, guidance, etc.) (see Table 8-2). The high percentage of teachers/tutors who did not intervene may be better interpreted by taking into account their motivations. As a matter of fact, most of them explain that they did not intervene because there was no necessity for such an action. (see Table 8-3).

**Table 8-1: Intervention**

	<b>N</b>	<b>%</b>
Yes	29	37.2
No	47	60.3
No answer	2	2.6

**Table 8-2: Methods of intervention**

Partner	Methods	N
Italy	Creating a common identity	1
	Mediating in presence	1
	Remembering learners to take into account others' points of view	1
	Appreciating differences	1
	Suggesting strategies to integrate different points of view	1
	Don't saying somebody is right	1
	Suggesting that find solutions to conflicts is a creative and innovative value	1
	To move the discussion to the conflict object with a depersonalization effort	1
	To moderate conflict through a summary of positive points from both points of view	1
Finland	Encouraging students, analyzing differing opinions and arguments, giving objective information about the matter.....	4
	Guiding the debate by showing the ways to argue in a friendly manner, but still emphasizing the importance of different opinions	3
	Students (a multicultural group) formulated rules before discussion that emphasized tolerance and the right for different opinions	1
France	Moderation of the debates	4
	Sending mails	1
Germany	Moderating	1
	Mediating	1

**Table 8-3: Reasons for not intervening**

Partner	Reasons	N
Italy	Because not necessary	11
	Because the course didn't require collaboration between learners	1
	Because sufficiently done in presence	1
	Because group psychological dynamics must be resolved by the group itself, without external interventions that can appear authoritarian	1
	Because free group dynamics are needed to experiment success or failure	1
Finland	The problem was not detected	7
France	Not necessary	2
	Self-organization	2
	Not important	1
	Not enough time	1
Germany	Not necessary, because phenomenon did not occur	8
	Tutor was not responsible for this task	2

## Superficial discussions

62.8% (see Table 8-4) of teachers/tutors did not intervene to avoid superficial discussions because, in most cases, it was not necessary (see Table 8-5). The remaining 33.3% intervened mainly with specific actions (instructions, guidance, mediation, feedback, etc) and with general actions (e.g. encouraging, fostering, etc.) (see Table 8-6).

**Table 8-4: Intervention**

	N	%
Yes	26	33.3
No	49	62.8
No answer	3	3.8

**Table 8-5: Methods of intervention**

Partner	Methods	N
Italy	Resuming the forum situation and asking members to post a small number of messages (avoiding short simple posts) but deeply argued	1
	Encouraging the taking of critical positions, for instance with role play or focusing attention on course contents	1
	Inciting group members to be more practical	1
	To present models for reference	1
	Fostering a consensual group decision	1
	Asking in-depth questions when discussion was too superficial	2
	Remembering members to fulfil engagements	1
	"Open-ended questions leading to deeper learning"	1
Finland	Giving instructions and guidance beforehand	2
	The teacher or tutor steered the discussion into right direction and encouraged everyone to participate while emphasizing the fact that there are no "right answers"	1
	The teacher or tutor steered the discussion into right direction	1
	"I reminded them that if we do not have different opinions, we do not have a good deep discussion. I encouraged the participants to provide critical comments with explanations"	1
France	Mediation	2
	Validation of the collaborative project before the beginning	1
	Everyone can give his point of view	1
	Giving precision about the question asked	1
Germany	Giving feedback	2
	Reformulating questions	3
	Explaining the task	1



**Table 8-6: Reasons for not intervening**

Partner	Reasons	N
Italy	Because not necessary	11
	Because the course didn't require collaboration between learners	1
Finland	No such situations arose	9
France	Not necessary	7
	Self-organization	1
Germany	Not necessary, because phenomenon did not occur	8
	Tutor was not responsible	2

### Imposing group members

67.9% of teacher/tutors did not intervene (see Table 8-7) to avoid point of view imposition, mainly because it was not necessary (see Table 8-8). Concerning other teachers/tutors, respondents mainly report two methods of intervention: course organization/structure (e.g. role play, small groups, collaboration scripts, etc.) and general suggestions (reduce tension, suggestion to take in account others ideas, sensitizing) (see Table 8-9).

**Table 8-7: Intervention**

	N	%
Yes	22	28.2
No	53	67.9
No answer	3	3.8

Table 8-8: Methods of intervention

Partner	Methods	N
Italy	Using specific methods of participation, for example using role play and the goal to realize a common artifact	1
	Fostering the comparison of the different groups products	1
	Asking learners to try to defend (like in a game) points of view different from theirs	1
Finland	Giving general instructions and also in the groups\' own discussions	2
	Decisions were made only after discussion. All ideas were free for everyone to use and sometimes the teacher highlighted ideas that were not noticed by the group	1
	Students were given different roles: chairman, secretary, observer etc.	1
France	Reduce the tensions	2
	Asking the leader of the group to take into account others members ideas	1
	Choosing the alternative solution	1
	Working with small groups	1
Germany	Sensitizing group members for different perspectives and focusing their relevance for the group discussion	4
	Giving collaboration scripts	1

Table 8-9: Reasons for not intervening

Partner	Reasons	N
Italy	Because not necessary	10
	Because the course didn't require collaboration between learners	1
	Because sufficiently done in presence	1
	"Self-determination groups/individuals"	1
	Because students have to learn to solve the problem in autonomy	1
Finland	The problem was not detected	10
France	Not necessary	8
	Self organization	2
Germany	Phenomenon did not occur	9
	Task of the group itself	1

### Dysfunctional group competition

Only 23.1% of teachers/tutors intervened to avoid dysfunctional group competition (see Table 8-10). Interventions regarded mainly course organization/structure (e.g. role play, specific task for individual learners, giving rules). An interesting case is presented, in which the group work is organized in a very structured way (members produce something useful to their group, groups produce something useful to the course, and functional for the work of every learner) (see Table 8-11). The main reason for not intervening consists in the

explanation, according to which it was not necessary for the importance of self organization (see Table 8-12).

**Table 8-10: Intervention**

	N	%
Yes	18	23.1
No	57	73.1
No answer	3	3.8

**Table 8-11: Methods of intervention**

Partner	Methods	N
Italy	Focusing on tasks	1
	To emphasize the group collective identity	1
	With irony to decrease group tension	1
	Using role play and making roles rotate between group members	1
	Restoring equal roles with compensation interventions	1
	Organizing the course in the following way (organization prevents competition): every member produces something useful to the group (summary of read materials); every group produces something useful to all the course (for example a course scheme of interpretation); every member will then need the groups products for the individual evaluation (the exam consists in the use of the scheme of interpretation)	1
Finland	Instruction, guidance and control	1
France	Exposing the principles of collaboration	3
Germany	Specific tasks for the individual learners	1
	Giving rules for the whole group	1

**Table 8-12: Reasons for not intervening**

Partner	Reasons	N
Italy	Because not necessary	11
	Because the course didn't require collaboration between learners	1
	Because students have to learn to solve the problem in autonomy	1
Finland	The problem was not detected	11
France	Not necessary	10
	Self-organization	2
Germany	Phenomenon did not occur	11
	Tutor was not responsible	1
	Difficult to diagnose	1

## Addressing the tutor

As for the role of the tutor, the questionnaire presented two potential negative episodes, which may happen in group work: a) members turn to the teacher/tutor in order to ask for content-related information, instead of asking other group members; and then b) content-

related questions posted by one participant do not get any response by other group members, which just wait for the teacher/tutor to reply.

As for the first potential setback, 53.8% (see Table 8-13) of teachers/tutors intervened to avoid such a problem, above all on course organization/structure (e.g. roles, rules, not availability of the teacher/tutor). Other methods reported mainly consist in general suggestions (e.g. giving hints, suggesting the use of forum, encouraging to ask peers, etc.) (see Table 8-14). The reason for not intervening is mainly because not necessary (see Table 8-15).

**Table 8-13: Intervention**

	N	%
Yes	42	53.8
No	33	42.3
No answer	3	3.8

**Table 8-14: Methods of intervention**

Partner	Methods	N
Italy	Creating a group leader, who is the only one can communicate with the teacher/tutor	1
	Suggesting the use of the forum instead of sending e-mail to the teacher/tutor	1
	Proposing activities in which peer role is important like the role of teacher/tutor	1
	Teaching them to turn to peers	1
	Proposing again questions in the forum	1
	Organizing the course in a way in which every member is an expert in something and other members have turn to the peer expert	1
	Sending almost every question and answer in copy to all learners	1
	Not answering if information were already present in the group	1
Finland	Encouraging to ask peers	3
	Teacher was not available, i.e. didn't reply immediately or tried to distance he-/herself from the discussion and didn't give "right solutions", but viewpoints	1
	Emphasizing students own responsibility and giving references to the course literature	1
France	Asking the members to communicate / collaborate inside the group	3
	Refusing to answer and invite to ask another group or consult the forum	3
	Sending mails	2
	Limit the number of questions by group	1
Germany	Giving hints to the group to solve the task themselves	4
	Giving further information, instruction	3
	Asking relevant questions	1
	Describing the function of a tutor	1

**Table 8-15: Reasons for not intervening**

Partner	Reasons	N
Italy	Because not necessary	4
	Because the course didn't require collaboration between learners	1
	Because if learners turned to the teacher/tutor means that it was necessary	1
Finland	Not detected, partly because students were used to work in this way and were goal oriented (2)	6
France	Not necessary	4
	Self-organization	1
Germany	phenomenon did not occur	5
	Didactical concept	1

As for the second potential hindrance to the collaboration process - that is content-related questions posted by one participant, which do not get any response by other group members, thus just wait for the teacher/tutor to reply - 48.7% (see Table 8-16) of teachers/tutors intervened to avoid such a problem. Interventions regarded mainly course organization/structure (e.g. roles, well defined expiration time, scripts) and actions taken by teachers/tutors (e.g. participating the discussion, feedback, telling to ask to group members) (see Table 8-17). The reason for not intervening is mainly because not necessary (see Table 8-18).

**Table 8-16: Intervention**

	N	%
Yes	38	48.7
No	37	47.4
No answer	3	3.8

Table 8-17: Methods of intervention

Partner	Methods	N
Italy	“With group leaders”	1
	Providing solutions gradually to permit other members’ contributions	1
	Assigning task with well defined expiration time, so learners had to work quickly otherwise they had penalizations in final evaluation (“group accountability”)	1
	Specifying that he will reply only if group don’t find answers	1
	Avoiding to answer	4
Finland	Participating the discussions (sometimes with delay) and asking the others to participate	3
	Teacher brought in new ideas, elaborated or concretized the question	1
	Teacher would tell which pair had to reply to which pair's message	1
	The course structure dictated the role of the students. Each student had to peer coach his pair according to a script and the act as a reviewer	1
France	Answering and sending the answer to all	2
	Asking to other members of the group	2
	Orienting to the forum	1
Germany	Telling them they should ask their group members	4
	Process-oriented support methods	1
	Giving further instruction	1
	Giving feedback	1

Table 8-18: Reasons for not intervening

Partner	Reasons	N
Italy	Because not necessary	5
	Because the course didn’t require collaboration between learners	1
Finland	The problem was not detected	3
	Each work was discussed face-to-face	1
	Students have to have the possibility also to ask direct questions from the teacher	1
France	Not necessary	7
	Self-organization	2
Germany	Phenomenon did not occur	4
	Explaining the objectives of the course	1
	Not the task of the tutor	2
	Not seen as problem	1

### Ignoring the opinion of minorities

62.8% (see Table 8-19) of teachers/tutors did not intervene, in order to avoid that the majority ignored minority groups, because it was deemed not necessary, or in order to preserve learners/groups autonomy (see Table 8-20). The remaining 33.3% intervened

mainly with specific actions (reintroducing the suggestion, sum up the discussion, validation and promotion of good proposition, feedback, etc) (see Table 8-21).

**Table 8-19: Intervention**

	N	%
Yes	26	33.3
No	49	62.8
No answer	3	3.8

**Table 8-20: Methods of intervention**

Partner	Methods	N
Italy	Reintroducing the suggestion to the group	3
	Organizing the activity in a way in which everyone must be involved	1
	(In chats) suspending from time to time the chat, allowing learners to read all messages previously written	1
	Trying to animate the discussion	1
Finland	Sum up the discussions and suggest that all would consider that aspect	4
	Send another message, sometimes even an email, to ensure the message was heard	1
	Discussing the suggestion face-to-face	1
	Everyone was free to suggest what they wanted, and the group decided how to go on	1
France	Validation/Promoting good propositions	3
	Ask people to listen to each others	2
Germany	Giving feedback concerning the specific aspect the minority did mention	2
	Calling attention to this aspect	2

**Table 8-21: Reasons for not intervening**

Partner	Reasons	N
Italy	Because not necessary	9
	Because the course didn't require collaboration between learners	1
	To preserve the principle of impartiality	1
	Because students have to learn to solve the problem in autonomy	1
Finland	Not detected	5
France	Not necessary	4
	Self-organization	3
Germany	Phenomenon did not occur	7
	Group autonomy	4
	Economical reasons	1

## Lack of responsibility

38.5% (see Table 8-22) of teachers/tutors intervened to prevent that members avoid assuming the responsibility for the group work. Interventions regarded mainly course organization/structure (e.g. roles, discussion in presence, rotating moderation, etc.) (see Table 8-23). Reasons for not intervening are various (e.g. not necessary, difficult to identify this problem, part of the assessment, etc.) (see Table 8-24).

**Table 8-22: Intervention**

	N	%
Yes	30	38.5
No	45	57.7
No answer	3	3.8

**Table 8-23: Methods of intervention**

Partner	Methods	N
Italy	“With group leaders”	1
	Offering willingness and support	1
	Assigning roles	1
	Discussing members’ responsibility in presence	1
	Stimulating the assumption of responsibility	1
Finland	Different roles for the students (starter, wrapper, evaluator etc.)	3
	Observing and controlling the groups and the process, sending reminders to inactive students	2
France	Assigning a different leader for each activity	5
	Making aware of responsibilities	2
Germany	Rotating moderation	5
	Giving group rules and more instruction to integrate all group members	2
	Pointing to the fact that active participation is an antecedent for getting a degree	2

**Table 8-24: Reasons for not intervening**

Partner	Reasons	N
Italy	Because not necessary	10
	Because the course didn’t require collaboration between learners	1
	Because is difficult to identify this problem	1
	Because Model EPIC require from the beginning the assumption of roles and responsibility	1
	Because participation was compulsory	1
	Because was part of the assessment	1
Finland	Not detected, due to clear roles or small enough groups	6
France	Not necessary, no problem	5
	Criteria for evaluation, not decided	2
Germany	Phenomenon did not occur	3
	Task of the group/moderator	3



## Balanced participation

47.4% of teachers/tutors intervened to foster members' balanced participation (see Table 8-25). Interventions regarded mainly course organization/structure (e.g. roles, individual conversation, work redistribution, scripts, etc.) and specific actions (e.g. sending reminders, emphasizing pre-existing knowledge and interest, giving feedback) (see Table 8-26). Reasons for not intervening are various (e.g. not necessary, difficult to monitor the individual contribution to the group work, participation is evaluated, etc.) (see Table 8-27).

**Table 8-25: Intervention**

	N	%
Yes	37	47.4
No	38	48.7
No answer	3	3.8

**Table 8-26: Methods of intervention**

Partner	Methods	N
Italy	"With group leaders"	1
	Offering willingness and support	1
	Proposing alternative tasks and redistributing the work in the group	1
	Requesting individual conversations	1
	Stimulating the assumption of responsibility	1
	Stimulating learners	3
	Stimulating learners individually	1
	Assigning roles	1
	Emphasizing pre-existing knowledge and interests	1
	To remember that participation is needed for the final assessment	1
Finland	Sending reminders	4
	Giving some additional task	1
	Structuring the group work so that everyone's input was needed	1
	Rewarding active members of the group	1
France	Reminding that the work is collective	6
	Individual tests	2
	Personal mail, face to face	1
Germany	Giving feedback by asking group members to distribute the task or giving concrete collaboration scripts	5
	Task design	2
	Rotating moderation	2

**Table 8-27: Reasons for not intervening**

Partner	Reasons	N
Italy	Because not necessary	6
	Because the course didn't require collaboration between learners	1
	Because is difficult to monitor the individual contribution to the group work	2
Finland	Not detected or the course didn't include group work	7
	Problem was discussed beforehand but the teacher also felt that he/she couldn't "force" grown-ups. Also, groups have to take responsibility themselves	1
France	Not necessary	3
	Participation is evaluated	2
Germany	Phenomenon did not occur	3
	Participation was voluntarily	2
	Participation was object of investigation	1

### Different group goals

Concerning the achievement goals of participants, two items investigated whether learners pursued performance vs. mastery goals and individual vs. group goals. Moreover, respondents were asked to specify which actions they used to avoid such negative phenomena, that is, the students' performance and individual goals.

As for the first item, only 29.5% of teachers/tutor intervened in order to prevent members from being more interested in the outcome of the group work (certificate or grade), rather than in the subject area (see Table 8-28). Described methods are mainly about: course organization/structure (e.g. eliminating the assessment, planning the course in a motivating manner, etc.) and general actions (encouraging, re-motivating, emphasizing activities, etc.) (see Table 8-29). Reasons for not intervening are mainly: because not necessary, no group work, no certificate to be had, etc. (see Table 8-30).

**Table 8-28: Intervention**

	N	%
Yes	23	29.5
No	52	66.7
No answer	3	3.8

**Table 8-29: Methods of intervention**

Partner	Methods	N
Italy	Expressing clearly assessment criteria from the beginning	1
	Emphasizing activities	1
	Allowing the repetition of exercises to permit a deeper learning	1
	Requesting learners' auto-evaluation (learners reflect on ability advance)	1
	Using an operational model in which to reach the outcome knowledge is needed	1
	Emphasizing the availability for spending of competences	1
	Eliminating the assessment	1
Finland	By encouraging and motivating students in messages to them, but also by planning the course in a motivating manner	2
	By planning the group assignment properly and informing the students what are required to pass the group work	1
France	Reminding the rules at the work is collective	3
	Re-motivation, face to face	2
Germany	Trying to motivate participants	2
	Choosing topics themselves	1

**Table 8-30: Reasons for not intervening**

Partner	Reasons	N
Italy	Because not necessary	10
	"No tools available"	1
	Because it is very difficult to determine exactly what is one's real interest during an entire course	1
Finland	Problem not detected or no group work	6
	Students were motivated	2
	There was not a certificate to be had	1
	Teacher felt that he/she have to allow or was not capable of monitoring this kind of motives	2
	Control: if they do the work they get the certificate, if not then no certificate	1
France	Not necessary	6
	Not our role / work	2
Germany	Phenomenon did not occur	6
	No reason for intervention when learners are extrinsically motivated	6

Also in the case concerning the second area investigated within the goals dimension, teachers/tutors who intervened are the minority: only 28.2% carried out some practices to avoid that participants follow only their individual goals and not the group goals, (see Table 8-31). Respondents report mainly general suggestions (e.g. promote group activities, encourage the collaboration, emphasizing the importance of the group, promote solidarity, give hints, etc.) (see Table 8-32). Reasons for not intervening are mainly: because not necessary, no group work/goals (see Table 8-33).

**Table 8-31: Intervention**

	<b>N</b>	<b>%</b>
Yes	22	28.2
No	53	67.9
No answer	3	3.8

**Table 8-32: Methods of intervention**

<b>Partner</b>	<b>Methods</b>	<b>N</b>
Italy	“With group leaders”	1
	Promoting group activities instead of individual activities	1
	Requiring the development of common artifacts	1
	Linking individual goals with group goals, in a “win-win-win” logic	1
	Writing an instant message of encouragement for more collaboration	1
	Attracting attention to the project context	1
	Trying to find points of contact between subgroups	1
Finland	Organizing the work and roles of the students to avoid this problem	2
	Emphasizing the importance of the group (to learning)	2
	By providing video-conferencing, possibilities to use joint chat and what ever to make the group work	1
	Reminding what was the purpose and aim of the course	1
France	Re-motivation, face to face	2
	Promoting solidarity between participants	1
	Fostering group work	1
Germany	Giving hints concerning the group task and goal	2
	Giving applicable topics	1

**Table 8-33: Reasons for not intervening**

<b>Partner</b>	<b>Reasons</b>	<b>N</b>
Italy	Because not necessary	11
	Because the course didn't have group goals	1
	Because required work had to be a group work and it was impossible to do individually	1
Finland	Problem not detected or no group work	8
	One teacher also felt that this was out of his hands, i.e. didn't want to get involved	1
France	Not necessary	8
	Self-organization	2
	Not our role / work	2
Germany	Phenomenon did not occur	1
	Objective of all groups were the same	1

## 9. Organization of group work

Regarding the dimension on organizing the group work, two items are asked: The first involves the importance of organizing group activities in autonomy, while the second focuses on the long-term planning of group activities.

Drawing from the assumption that the planning and organizing online activities allow the realization of a systematic and efficient way of work, by means of monitoring the collaboration process, and the realization of these activities, these items investigate the most relevant aspects of the organization of online activities,

Our aim was to ascertain whether teachers/tutors carried out some activities to encourage and promote the autonomy of learners in organizing their work and, if yes, how they realized it.

As a result, we expected to find out some examples of good practices, which could help in fostering the planning and organization of activities, and in avoiding the risk of disorganized and systematic participation of learners.

### Organizing group activities

Respondents considered the autonomy of participants in organizing their group work activities as important ( $M=4.85$ ,  $SD=1.417$ ,  $Min=1$ ,  $Max=6$ ), and only 57.7% of them intervened to promote it (see Table 9-1). Described methods can be subdivided mainly into the following categories: course organization/structure (e.g. roles, structured activities, specifics on work, milestones, timetables, rules); teachers/tutors' actions (e.g. indications, support, send message); general suggestions (e.g. remembering every learner the responsibility of his role) (see Table 9-2). Reasons for not intervening are mainly: because not necessary, not enough time, because the collaboration in presence was sufficient, and due to the importance of self organization (see Table 9-3).

**Table 9-1: Intervention**

	<b>N</b>	<b>%</b>
Yes	45	57.7
No	30	38.5
No answer	3	3.8

Table 9-2: Methods of intervention

Partner	Methods	N
Italy	Organizing the course in a way that promote group work activities: groups define the discussion topic and follow the progressive inquiry model posing problems, building and discussing theories, searching for theoretical information; teacher/tutor intervened at the beginning of the course defining tasks and helping students to come to an agreement over themes to discuss	1
	“With group leaders”	1
	Helping (at the beginning) the group organization	2
	Assigning roles and structured activities	1
	With an initial modeling and progressively moving to fading: at the beginning the teacher/tutors show how to do something, then he ask students (in turns) to go on with the activity, in this way groups and individuals become more autonomous	1
	Remembering every learner the responsibility of his role	1
	With indications	1
	With detailed guidelines	1
	Giving detailed specifics on work organization, timing, milestones, and outputs/results	1
Finland	Organizing the work: Teacher gave the students clear roles in groups, and divided the task into smaller parts or otherwise made clear instructions and timetables about the activities	4
	Started the discussion by statement \"now out assignment is to solve this problem collaboratively. This means that we have to take each other's opinions into account...Let's start first by bringing up our individual interest and then we ....\"	1
	I would check how they were doing, did they need technical support, content-related support, I would even send messages to encourage them to keep working, without asking what support they need	1
	Teacher gave them the task, but gave also freedom to choose how to work in groups	1
France	Asking for work group only	2
	Definition of the rules	2
	Scheduling the work	3
Germany	Giving specific rules and procedures for virtual communication and collaboration (moderation, structuring group processes, group rules, rules for virtual communication)	9
	Giving further resources	1
	Giving instructions	2
	Consultation hours	1
	Directly contacting individual participants	1

**Table 9-3: Reasons for not intervening**

Partner	Reasons	N
Italy	Because not necessary	6
	Because the course didn't require collaboration between learners	1
	Because not necessary, sufficiently done in presence	1
	Because activities were organized by course designers and tutors, so students had only a little autonomy	1
	For the high groups number and because it was difficult to understand individual's needs	1
	Because it wasn't meant to happen	1
	Because students had to manage this problem in autonomy	1
Finland	Problem not detected or no group work	3
	Course was too structured	1
	The roles and duties were given by the teacher	1
France	Not enough time	2
	Self-organization	3
	No problem	2
Germany	Organizing group work was not the group task	1

### Planning group activities

Respondents consider participants' long-term planning of their group work as important ( $M=4.18$ ,  $SD=1.648$ ,  $Min=1$ ,  $Max=6$ ), but only 48.7% of them intervened to promote it (see Table 9-4). Described methods are mainly about course organization/structure (e.g. roles, intermediate verifications, intermediate expirations, timetable, milestones, detailed plan of course, etc.) (see Table 9-5). Reasons for not intervening are mainly: because not necessary, no long-term planning assignments, self-organization, etc. (see Table 9-6).

**Table 9-4: Intervention**

	N	%
Yes	38	48.7
No	37	47.4
No answer	3	3.8

Table 9-5: Methods of intervention

Partner	Methods	N
Italy	“With group leaders”	1
	Publishing on the platform some essays like models for students’ work	1
	Planning moments for intermediate verification of the work	2
	Proposing a reference model for the work planning	2
	Asking systematic feedbacks on planning	1
	Treating the planning in presence	2
	Giving a perspective view of the project	1
	Giving intermediate expirations	2
	Giving guidelines	1
	With the definition of specifics on work organization, timing, milestones, and outputs/results	1
Finland	Reminding of the schedule	3
	Timetable was either given	3
	Students made a plan themselves	1
France	Remembering deadlines and scheduling the work	4
	Intervention of the teacher of managing project course	1
Germany	Giving a detailed plan of the course	4
	Offering tools that support planning activities	3
	Further explanations	1
	Motivation	1
	Consultation hours	1

Table 9-6: Reasons for not intervening

Partner	Reasons	N
Italy	Because not necessary	2
	Because the course didn’t require collaboration between learners	1
	Because it wasn’t a goal to pursue	1
	Because expirations were always decided by tutors	1
	Because group had to produce a work every month and this is not long-term	1
	The course activities were too short	1
	Because it wasn’t meant to happen	1
Finland	There were no long-term planning assignments	7
	There were several scheduled assignments for the group	1
France	Self-organization	5
	Not necessary for the course	4
	Not enough time	1
Germany	It was not necessary	3
	Time-plan was given	1
	Not objective of the course	1



## 10. Feedback and Evaluation

The last dimension concerns feedback provision. Here, four aspects were of main relevance:

- giving content-specific feedback or feedback on collaborative activities
- evaluating group results and group activities
- methods of evaluation and
- the influence of the given feedback on collaborative activities.

Our aim was to ascertain whether and how (i.e., with which type of intervention and/or strategies) teachers/tutors make use of different types of feedback (content-related and collaboration-related) and of evaluation strategies, drawing on the assumption that providing prompt and substantive feedback is a useful practice, especially as far as collaborative activity is concerned. Feedback and evaluation are indeed very important, especially within a context of distance education, as they may help learners in correcting deficiencies, growing professionally, and in facilitating them to interact in a fruitful and productive way. In particular, evaluation is a key factor of e-learning, and different methods and strategies can be used. As a result, we expected to find out some examples of good practices, which could foster participants' learning through effective feedback and evaluation strategies.

### Content-specific feedback

Respondents consider the provision of content-related feedback to participants as very important ( $M=5.54$ ,  $SD=.939$ ,  $Min=1$ ,  $Max=6$ ), and 85.9% of them intervened to promote it (see Table 10-1). Described methods can be subdivided into the following main categories: course organization/structure (e.g. two phase evaluation of group products, content expert, self-assessment tests, peer feedback, etc.); teachers/tutors' actions (e.g. suggesting additional materials, summing up discussions, corrections, written analysis on the group solution, etc.) (see Table 10-2). Reasons for not intervening are: because sufficiently done in presence, other teacher(s) gave the feedback, exchange of experiences was the main objective (see Table 10-3).

**Table 10-1: Intervention**

	N	%
Yes	67	85.9
No	8	10.3
No answer	3	3.8

Table 10-2: Methods of intervention

Partner	Methods	N
Italy	When information provided by students were misleading, teacher/tutor asked to discuss and to find more in-depth information	1
	With a two phase evaluation of group products	1
	Suggesting additional readings/materials	3
	Offering the support of a content expert	1
	Helping/commenting work in presence	2
	With advices and encouragements	2
	With explanations	1
	Asking groups to present their work and then discussing on it	1
	Practical exercises and related discussions with teacher/tutor are feedback on content previously studied	1
	EPIC model requires a feedback on every group work	1
	With a message in the content analysis forum and a message in the planning forum	1
	Giving feedback on synthesis produced by individual and by groups, then Asking learners to give a feedback on synthesis, finally giving feedback on feedbacks	1
	With every possible channel	1
	Answering learners' questions in the forum	2
	Using forum	2
	Using forum (collective feedback) and assignments comments (individual feedback)	3
	Giving feedback on works, proposing improvements and encouraging to attain requested goals	2
	With self-assessment tests	2
	Giving feedback on tests	1
	(According to the didactic format of the degree course) using one of the main tools to give content-related feedback, that is the live session via synchronous videoconferencing platform (Breeze Live)	1
Finland	Written feedback including emails	8
	Written feedback including oral feedback	6
	By summing up the discussion	3
	Peer feedback	3
	Recorded audio messages, corrected tasks, suggested links...	1
France	Oral appreciation / discussion	11
	Sending mails individual / global	4
	Corrections	4
	By the platform	1
Germany	Very detailed and elaborated written analyses on the group solution	12
	Discussions	2

**Table 10-3: Reasons for not intervening**

Partner	Reasons	N
Italy	Because sufficiently done in presence	1
Finland	Other teacher(s) gave the feedback	2
France	No answer	1
Germany	Exchange of experiences was the main objective	1

### Feedback on collaborative activities

Respondents consider the provision of feedback related to group activities to participants as important ( $M=4.37$ ,  $SD=1.608$ ,  $Min=1$ ,  $Max=6$ ), and 61.5% of them intervened to promote it (see Table 10-4). Described methods are mainly about course organization/structure (e.g. weekly group classification, assessment and self-assessment, peer-evaluation, etc.) and teachers/tutors' actions (e.g. formal and informal agreement, summing up the discussion, comments during meetings, directly contacting participants, etc.) (see Table 10-5). Reasons for not intervening are mainly: because not necessary, because not enough time, self-organization, no focus of the course, etc. (see Table 10-6).

**Table 10-4: Intervention**

	N	%
Yes	48	61.5
No	27	34.6
No answer	3	3.8

Table 10-5: Methods of intervention

Partner	Methods	N
Italy	Asking one student to take stock of the situation summarizing the discussion	1
	With the analysis and attendant comments, given at the end of the activities	1
	With the evaluation of group work	1
	Notifying every week which was the group with best work and which is the group with the worse one	1
	Comparing and discussing group works in presence	1
	With formal and informal agreement	1
	Both in presence and online	1
	In presence with assessment and self-assessment	1
	With peer and teacher evaluation on groups work	1
	Using forum	2
	Evaluating the work and giving suggestions	1
	With an evaluation report of group work	1
	(according to the didactic format of the degree course) using two of the main tools to give content-related feedback, that are forum and live session Via synchronous videoconferencing platform (Breeze Live)	1
Finland	Discussing this in written form or face-to-face	7
	Self/peer evaluating	3
	By summing up the discussion	2
	In any way or form possible: oral feedback, written feedback, recorded audio messages, emails, corrected tasks, suggested links...	1
France	Comments during meetings	9
	Reminding the rules	1
	Sending mails	1
	Forum	1
	Course	1
	Sending documents with remarks / comments	1
Germany	Giving feedback on group activities	4
	Giving tips to optimize group processes	2
	Directly contacting participants	3
	Exchange of experiences	1

**Table 10-6: Reasons for not intervening**

Partner	Reasons	N
Italy	Because done by the group leader	1
	Because the course didn't require collaboration between learners	1
	not necessary because the writing of final paper was an individual work	1
	Because not necessary	4
	Because not enough time	2
Finland	Not focus of the course	3
France	Self-organization	1
Germany	Not necessary	5

### Evaluating results of group work

Respondents consider the evaluation/rating of the final product of the collaborative work as important ( $M=4.70$ ,  $SD=1.639$ ,  $Min=1$ ,  $Max=6$ ), and 70.5% of them intervened to do it (see Table 10-7). They evaluate/rate with *grades* (37.2%; see Table 10-8), with *pass or fail* (28.2%; see Table 10-9) and with other different methods (e.g. participation/collaboration, points, comments/debates, elaborated feedback) (see Table 10-10). *Knowledge application*, *understanding of the content* and *mastery, skilfulness* are the most frequent criteria adopted to evaluate/rate the final product, but all criteria are important (see Table 10-11). Concerning procedures used for the evaluation, *Tests* is considered not very important, instead *Essays* is the most important (see Table 10-12); furthermore, respondents report some other procedures (see Table 10-13). Reasons for not evaluating are mainly: there was no group work or no grading, not relevant, etc. (see Table 10-14).

**Table 10-7: Evaluation of the final product**

	N	%
Yes	55	70.5
No	20	25.6
No answer	3	3.8

**Table 10-8: Grades**

	N	%
Yes	29	37.2
No	26	33.3
No answer	23	29.5

**Table 10-9: Pass or fail**

	N	%
Yes	22	28.2
No	33	42.3
No answer	23	29.5

Table 10-10: Other methods

Partner	Methods	N
Italy	With the certification “project carried out and goals reached” or “project not carried out and goals not reached”	2
	Evaluation based on quality standards	1
	Evaluation based on course activities	1
	Evaluation based on a written report	1
	With a document inserted into the forum and with a chat conversation	1
	With feedbacks on contents, style and processes	1
	With participation/collaboration points	2
	With compliments to individuals or groups	1
	With an assessment (sentence)	1
Finland	<i>No other</i>	
France	Comments /debates	2
	Self-evaluation	1
Germany	Elaborated feedback	3
	With school grades	1
	With formative evaluation	1
	System of points	1

Table 10-11: Criteria

	N	Min	Max	M	SD
Knowledge Gain	52	1	6	4.71	1.377
Knowledge Application	52	3	6	5.54	.670
Understanding of the content	53	1	6	5.19	1.001
Creativity	50	1	6	4.34	1.479
Collaboration/Ability to collaborate	54	1	6	4.24	1.413
Mastery, Skilfulness	52	1	6	4.94	1.227
Effort	54	1	6	4.57	1.474

Table 10-12: Procedures

	N	Min	Max	M	SD
Tests	48	1	6	3.15	2.231
Essays	50	1	6	5.12	1.452
Collection of documents	46	1	6	4.17	1.755
Quality of online participation	54	1	6	4.39	1.630
Observation of collaboration	52	1	6	4.00	1.692

**Table 10-13: Other procedures**

	<b>N</b>	<b>Min</b>	<b>Max</b>	<b>M</b>	<b>SD</b>
Self-reflection and self-criticism ability	1	5	5	5	-
Group minutes	1	5	5	5	-
Presence of reflection on work	1	6	6	6	-
Products and processes	1	6	6	6	-
Linguistic competence	1	6	6	6	-
Ability to use online learning tools	1	6	6	6	-

**Table 10-14: Reasons for not evaluating**

<b>Partner</b>	<b>Reasons</b>	<b>N</b>
Italy	The course didn't have a final product; students' evaluation is based on participation in forum discussions	1
	The final product of all activities didn't have a specific evaluation; the final evaluation was general and related to all products	1
	Because the course didn't require collaboration between learners	1
Finland	There was no group work or no grading	6
France	No answer	1
Germany	Not relevant	2

## Evaluating group activities

Respondents consider the evaluation/rating of on-going activities of the collaborative work as fairly important ( $M=3.83$ ,  $SD=1.842$ ,  $Min=1$ ,  $Max=6$ ), but only 47.4% of them intervened to do it (see Table 10-15). *Knowledge application* and *understanding of the content* are the most widespread criteria adopted to evaluate/rate the final product, but all criteria are important (see Table 10-16). Concerning procedures used for the evaluation, *Tests* is considered as not very important, whereas *quality of online participation* is the most important (see Table 10-17); furthermore, respondents report some other procedures (see Table 10-18). Reasons for not evaluating are mainly: there was no group work or no grading, not necessary, etc. (see Table 10-19).

**Table 10-15: Evaluation of the on-going activities**

	<b>N</b>	<b>%</b>
Yes	37	47.4
No	38	48.7
No answer	3	3.8

**Table 10-16: Criteria**

	<b>N</b>	<b>Min</b>	<b>Max</b>	<b>M</b>	<b>SD</b>
Knowledge Gain	33	1	6	3.91	1.588
Knowledge Application	34	1	6	4.82	1.242
Understanding of the content	34	1	6	4.94	1.205
Creativity	35	1	6	4.20	1.410
Collaboration/Ability to collaborate	35	1	6	4.54	1.462
Mastery, Skilfulness	33	1	6	4.39	1.298
Effort	35	1	6	4.69	1.301

**Table 10-17: Procedures**

	<b>N</b>	<b>Min</b>	<b>Max</b>	<b>M</b>	<b>SD</b>
Tests	30	1	6	2.60	2.111
Essays	33	1	6	4.70	1.759
Collection of documents	32	1	6	4.16	1.725
Quality of online participation	35	2	6	5.09	1.173
Observation of collaboration	34	1	6	4.74	1.333

**Table 10-18: Other procedures**

	<b>N</b>	<b>Min</b>	<b>Max</b>	<b>M</b>	<b>SD</b>
Self-reflection and self-criticism ability	1	5	5	5	-
Face-to-face conversation	1	6	6	6	-

**Table 10-19: Reasons for not evaluating**

<b>Partner</b>	<b>Reasons</b>	<b>N</b>
Italy	There was no real evaluation, only group activities monitoring	2
	Because not necessary	1
	Because the time for hand in assignments was extended till the end of the course, so evaluation was only final	1
	Because not included in the course didactical model	2
Finland	There was no group work or no grading	6
France	Too heavy to manage	2
	Not useful	1
Germany	Not necessary	6
	Not the intention of the course	2
	Dividing group work into single products	1



## Evaluation strategies

The most common strategies adopted consist in the evaluation *by individual work* (70.5% of respondents) and *by group / group and individual work* (53.8% and 51.3% respectively), whereas *peer* and *self-evaluation* are used only by 26.9% of respondents and by 39.7% respectively (see Table 10-20, Table 10-21, Table 10-22, Table 10-23 and Table 10-24). 48.7% of respondents say that the evaluation/feedback procedures influence collaborative activities (see Table 10-25), particularly because they stimulate motivation / enhance learners' motivation and increase collaboration (see Table 10-26).

**Table 10-20: Evaluation by group work**

	N	%
Yes	42	53.8
No	33	42.3
No answer	3	3.8

**Table 10-21: Evaluation by individual work**

	N	%
Yes	55	70.5
No	20	25.6
No answer	3	3.8

**Table 10-22: Evaluation by group and individual work**

	N	%
Yes	40	51.3
No	35	44.9
No answer	3	3.8

**Table 10-23: Evaluation by peer-evaluation**

	N	%
Yes	21	26.9
No	54	69.2
No answer	3	3.8

**Table 10-24: Evaluation by self-evaluation**

	N	%
Yes	31	39.7
No	44	56.4
No answer	3	3.8

**Table 10-25: Evaluation/feedback influence on collaborative activities**

	N	%
Yes	38	48.7
No	37	47.4
No answer	3	3.8

Table 10-26: How the evaluation/feedback influence collaborative activities

Partner	How	N
Italy	Basing in-presence lessons on online tests results	1
	The evaluation/feedback procedure involved learning and activities participation self-regulation	1
	Increasing the collaboration	1
	Best practices were used to improve the collaborative design	1
	Creating a healthy competition	1
	Redefining personal or group objectives	1
	Allowing a rich exchange in presence	1
Finland	Motivated, activated and was good for the atmosphere	6
	The tutor\'s evaluation and feedback influenced the collaboration by promoting it. But the self and peer evaluations were more retrospective	1
	Students were aiming for better grades	1
France	Discussion about methods and results	2
	Continuous evaluation	1
Germany	Increasing the motivation of the participants	4
	Improving the collaborative work through feedback and critique	4
	Enhancing the individual learning success	1
	Getting aware of the relevance of collaborative activities	1

## 11. Conclusion

E-learning today is characterized by the incessant creation of tools, artefacts and courses that often replicate the “traditional” model of one-way knowledge transmission from teacher to students.

*How may we apply and employ the recent findings on the beneficial effects of social interaction on learning, and incorporate them into e-learning contexts? How can “powerful learning environments” be designed?*

The present study started from these questions, with the purpose of identifying and illustrating examples of actions and strategies (“practices”) used within a collection of European e-learning courses, in order to facilitate collaboration and to support it. Supporting online collaboration is a very complex and challenging task indeed. Several aspects involved in the design of e-learning courses have been examined, in order to identify and to illustrate various examples of activities that teachers/tutors may use, in order to encourage the emergence of social dynamics that may allow participants to engage in the deep scrutiny of information and divergent thinking in order to advance learning.

In particular, the study explored several aspects, which are considered fundamental to the realization of successful e-learning courses based on effective online collaboration.

### Structural aspects of the e-learning courses

The structural aspects of the e-learning courses (e.g., duration, compulsory vs voluntary attendance), were the first elements to be investigated. Information on the previous experience of the e-tutor/teacher, pedagogical/didactical concepts, objectives of the courses, participants characteristics (previous experience) and design of their interaction (presence of groups, presence of subgroups, members per group), was collected as well.

What emerged, interestingly, was that the main part of respondents (i.e., teachers and tutors) had accumulated experience in the design and realization of collaborative online courses, whereas learners were not familiar with e-learning. This result suggests that collaborative online courses are not so widespread in higher education, and confirms the picture of a higher education system, in which collaborative knowledge construction plays a marginal role, i.e., that of an additional dimension to more traditional learning and e-learning models. As to the course objectives and pedagogical and didactical concepts, *knowledge acquisition* and *knowledge application* are indicated as the main goals of most part of the courses, whereas *cooperative/collaborative learning*, *learning by doing*, and *problem/cases-based learning* are among the most common pedagogical/didactical frameworks.

With reference to the countries, in which experiences took place, it may be suggested that e-learning appears to serve the purpose of border crossing, since many of the courses were simultaneously delivered in more than one country.

## Technological aspects of collaboration

We provided the questionnaire with several items concerning the technical aspects of the courses, with the aim of investigating the role of technological tools in the implementation of online collaboration. In particular, we explored the technical possibility to collaborate offered by the platform and the tools employed. Moreover, we considered the most effective tools for collaboration, the extent of using different tools for communication and for supporting collaboration, the added-value of the computer-mediated collaboration, and the possibility to use statistical data concerning learners' online activities.

The number of platforms employed was considerable, and it is beyond the scope of our investigation to indicate whether one or more of them should be considered as the best or the most effective one. It is remarkable that the most important criteria/features indicated by e-tutors for platform choice is the *ease of use*, whereas didactical and/or pedagogical concerns are evoked only in a few cases. Concerning *tools*, the asynchronous approach, which mainly involves *forum* and *e-mail*, is by far the most used. It is interesting to note that other communication tools have been reported – e.g., Skype, MSN, SMS, personal e-mail - thus demonstrating the growing use of popular tools (developed outside of the e-learning contexts), which are not part of e-learning platforms. A further possible interpretation of this result is based on the need for self-government of learners, who might use external tools to avoid the "control" of the tutors (Rouissi, 2007). With reference to the added value of using a platform, almost all e-tutors consider human mediation as very important, and they deem the platform useful for the *co-construction of knowledge*, *learner autonomy*, and *learner involvement/implication*. In contrast, even though the use of statistical data in the platform is a powerful tool to monitor and evaluate learners' activities, only 46.2% of e-tutors adopted it.

Some general remarks about existing e-Learning platforms may be drawn: in general, the most used and widespread platforms provide collaboration tools (like forum, chat, Wiki, etc.) which present two main limits (Marconato, 2005): *i*) they are not conceived as e-Learning tools, hence they do not fully embody the collaboration models proposed by educational experts; *ii*) they do not share a common conceptual framework, so that it is difficult to use them altogether in a coherent and effective way, for instance in order to share and reuse pieces of knowledge. Accordingly, a new infrastructure able to bridge the gap between the highlighted interaction forms and existing e-Learning collaborative tools is needed. In particular, what is needed is a framework featuring an integrated set of tools for supporting collaborative learning, and embodying both new educational models and existing collaboration tools in order to improve the learning process of students and foster student participation to learning activities.

## Online collaboration and knowledge acquisition

Drawing on the assumption that cognitive processes occur in social interaction (Doise & Mugny, 1984), we explored the design of the learning environment. The importance granted by e-tutors to several cognitive and social processes involved in the learning processes, as well as to didactical practices implemented to foster these processes, were our main focus.

As a matter of fact, several studies suggest that advanced cognitive outcomes are more likely to appear when participants are engaged in specific interaction situations, and therefore e-tutors/teachers may implement practices, which promote effective learners interactions.

With the purpose of discovering practices used by e-tutors/teachers, in order to foster collaboration activities, we explored some **cognitive** and **social processes**. As for the cognitive aspects of collaboration, the questionnaire included items concerning the learners' online discussion, argumentation and different perspectives contemplation, collaborative problem solving and knowledge exchange. As for the social aspects of collaboration, the questionnaire asked if dysfunctional phenomena of group work happened during the course (i.e., group conflicts, superficial discussions, dysfunctional competition, ignoring minorities, diffusion/lack of responsibility, and pursuit of personal goal) and the practices used to solve these problems.

While observing the **cognitive processes** below, it became evident that tutors value collaboration very highly. It should be noticed that the cognitive aspects of the collaboration processes are rated much more worthy of attention by e-tutors, compared to the social dynamics beyond the collaborative interactions. Therefore, most interventions, which were put into practice in e-learning courses, deal with the promotion of the cognitive functioning of individuals, rather than with the support of effective social interactions.

In particular, *online discussion* and *exchange of knowledge* seem to be the most important processes (M=5.19 and M=5.23 respectively) and the former, probably because of its more general character, is also the aspect in which e-tutors intervened most (80.8%). *Collaborative problem or case solving* is, on the contrary, the least important aspect (M=4.70), although the high variance of the score indicates that a number of e-tutors rate this aspect as much above (or much below) this average score. A possible explanation is that e-tutors who adopted problem-based learning are likely to consider this aspect as very important, while the other respondents consider it less important.

As for the **social aspects** of the collaboration process, the majority of e-tutors did not intervene, and the main motivation is that intervention was not necessary. Two principal interpretations can be formulated: 1) dysfunctional phenomena in collaboration were either not present or not noticed in several experiences; 2) in other experiences these social phenomena- if present -were not considered as a significant problem for e-tutors. The only aspect, which saw the majority of interventions by e-tutors, was actually the learners' tendency to turn to the e-tutor, in order to ask for content-related information, and to wait for answers, instead of posing questions to their peers. This may be explained with the fact that in these situations, e-tutors are directly involved in the phenomenon, since they have to do something in reply to learners' request/wait.

The most interesting and recurrent methods of intervention used by e-tutors to promote various cognitive and social processes of collaboration are similar, as far as practices are concerned. They consist in the creation of groups, roles/responsibilities assignation, use of rules/scripts, different forms of feedback (also of provocative nature) and various types of activities for learners (e.g. collaborative construction documents, discussions on peers' problem solution, ePortfolio, etc.).

## Organization of group work

We explored whether e-tutors/teachers considered the autonomy of participants important in the organization of their group activities, and the long-term planning of their group-work. This occurred while drawing on the assumption that planning and organizing the online activities may enhance collaborative learning. As theoretical literature shows, learning success and enhanced motivation, in fact, are predicated upon learners who take responsibility for their own learning, which is a characteristic of learner autonomy (e.g. Dickinson, 1995; Little, 1991; Deci & Ryan, 2000).

E-tutors have considered both of the investigated dimensions as important ( $M=5.05$  and  $M=4.44$  respectively), even though the *autonomy in organization of group activities* seems to be more important and the majority of e-tutors intervened to foster it (57.7%), probably because this dimension is more general. As for the second aspect (*planning group activities*) 48.7% of e-tutors intervened to encourage it. Key findings related to methods of intervention are similar to those presented for collaboration aspects, and mainly concern the use of rules and/or scripts.

## Feedback and evaluation

We investigated the direct intervention of e-tutors in terms of feedback on a content-specific level, collaboration activities and evaluation. This phase started from evidences that tutors who give feedback on social interaction as well as on content-specific questions are an important element of e-learning, because without an adequate contact person, learners in e-learning environments get the impression of being totally alone and unguided (Schweizer, Pächter, & Weidenmann, 2001).

Findings reveal that only *content-specific feedback* is judged as very important, whereas *on-going group work feedback* and *evaluation* are considered only fairly important ( $M=4.55$  and  $M=4.25$  respectively). Moreover, only 47.4% of e-tutors intervened to evaluate/rate the on-going activities of collaborative work. However, except for *content-specific feedback*, the variability of e-tutors' answers is fairly high. This probably means that part of e-tutors considered various feedback and evaluation aspects as very important and used it, whereas others considered these aspects less important and did not make any use of them.

The use of grades is not widespread within the *evaluation methods* of the outcomes of group work. In some cases e-tutors preferred an evaluation based on comments/feedback. *Knowledge application* and *understanding of the content* are the most used *criteria* for both outcome and process evaluation. Finally, what may be observed on the level of *procedure*, is that *essays* are widely employed, whereas *tests* are the less used.

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In conclusion, interesting strategies have been detected and described for each dimension that was investigated. Although the actual effectiveness of these practices still needs to be tested, and this goes beyond the purpose of the present study, these results may be considered as a step forward on the way to *“a better understanding by teachers, learners, decision-makers and the public at large of the implications of ODL and ICT for education, to ensure that pedagogical considerations are given proper weight in the development of ICT*

*and multimedia-based educational products and services; and by promoting access to improved methods and educational resources in this field. (see European Commission, Minerva Action: [http://ec.europa.eu/education/programmes/socrates/minerva/index\\_en.html](http://ec.europa.eu/education/programmes/socrates/minerva/index_en.html))”.*

As a matter of fact, the present study emphasizes the role of ICT in education. It conceives e-learning as a powerful context that fosters collaboration, and considers social interaction as the “royal road” to knowledge acquisition.

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### **13. LIST OF ANNEXES**

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