

# SYNCHRONIC TUTORING OF A VIRTUAL COMMUNITY

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## ABSTRACT

*The role of tutors has changed over time, depending on models of learning and on the technology available. This paper discusses the evolution of the tutor role and presents a new model concerning the tutoring functions in a synchronous virtual community. The definition of a virtual community starts from a theory of communities of learning and takes the features of the virtual environment into account. A project set in order to verify the tutors' features in a synchronous virtual community with an educational aim will be described in detail. The chats on-line are analyzed combining two analysis systems: a) a category system describing the tutor's on-line functions; b) a discourse analysis exploring the dialogical and interactive dimensions of the tutor interventions. Results gathered from this study highlight typical features of tutoring on-line a virtual community. On-line tutorship appears to be a fluid, situated and dynamic process of meaning negotiation. Tutors are able to take over each others' specific roles and students act as tutors to each other.*

## Keywords

Virtual community, on-line tutorship, new learning, constructivism, discourse analysis

## TUTORING THROUGH TECHNOLOGY: FROM INTELLIGENT TO ON-LINE TUTORING

In educational theory, one may discover certain changes of focus. Sfard (1998), for example, described two metaphors of learning: the transmission metaphor, where knowledge is transferred from one person to another and the participation metaphor, where learning means becoming a member of a certain community or culture. Simons, van der Linden and Duffy (2000), similarly, describe tendencies in the direction of “New Learning”, incorporating and integrating:

- New types of learning objectives from factual knowledge, meaningless, short-term, reproductive and detached from application to skills, meaning oriented, long term, productive and application oriented,

- New higher-order skills to be learned: thinking, learning, collaboration and regulatory skills,
- New ways of learning: more emphasis on the participation metaphor
- New pedagogical models: problem- and case based approaches and
- New ways of testing: portfolios of a variety of ways provide evidence of competence.

In the new ways of learning, Simons et al. (2000) describe tendencies in the direction of more self-regulated and more implicit kinds of learning. Self-regulated learning is, for instance, visible in conscious, self-planned and self-organized learning. More implicit learning comes about in contextualized approaches such as, for instance, problem-based, case-based and collaborative forms of learning.

This new learning requires new kinds of tutoring. Tutors should focus on the new goals and ways of learning and testing. Moreover they should help students develop higher-order skills.

We may conclude that in shifting from the transmission metaphor of learning to the participation metaphor (Sfard, 1998), tutoring shifts, too: from one agent tutoring students to reciprocal forms of tutoring. Learning through tutoring each other becomes an important aspect of the teaching learning arrangement. The focus of tutoring shifts to higher-order skills.

In the beginning days of the computer revolution, many scientists and designers focused on the possibility of fully automated tutoring. Important progress was made over the years in conceptualizing and applying intelligent tutoring systems (ITS). Especially in restricted, well-structured domains automated tutors may be possible. Typically, such Intelligent Tutoring Systems consist of four components (from Warendorf and Tan, 1997): Personalized Student Models, an Expert Model, an Expert Tutor, and the Graphical User Interface Shell. Of late, intelligent tutors have been applied to web-learning, too. This, however, leads to many new problems, such as impossibilities to make student models and to have student reactions. Several researchers are trying to solve these problems, typically through what they call “personal agents”. Johnson and Shaw (1997), for instance, have developed pedagogical agents enabling closer and more natural interactions between students and intelligent courseware. André, Rist and Müller (1997) hope to make presentations through personal agents more lively and appealing, and even allow for the emulation of conversation styles known from personal human-human communication.

Another tendency in the field of on-line learning (e-learning) is the combination of automated and human tutoring (see for instance Cardean University: <http://www.cardean.edu/>). On-line tutoring at least partly becomes a human activity again. One might think that this human e-learning tutoring is similar to real-life tutoring. Collison, Elbaum, Haavind and Tinker (2000), however, argue convincingly that the roles of human e-learning tutors differ from those of real-life tutors in at least three respects:

- They have to function as a guide-on-the-side instead of as guide-in-the-center, deepening the conceptual level of participants and training them in new conversation skills;
- They have to be project leader designing a regular, manageable feedback loop;
- They have to be leaders of the group processes, gradually building a community.

Moreover, Collison et al. (2000) stress the importance of different styles (voices) of tutoring, the need to help participants think critically and to help them deepen their dialogues.

Figure 1 summarizes the tendencies related to tutoring taken from the three fields of study discussed.

Field of study	Old tutoring	New tutoring
<b>Learning theory</b>	Transmission model Learning from tutors One tutor to many students Focus on learning Focus on testing pre-defined learning results	Participation model Learning through tutoring Reciprocal tutoring Focus on higher-order learning Focus on new ways of testing
<b>Artificial Intelligence</b>	Intelligent tutoring systems	Personal agents Combination of human and computer tutors
<b>On-line learning / Virtual communities</b>	Guides-in-the-center General leader Leader of individuals	Guides-on-the-side Project leader Leader of community building

**Figure 1 - New ways of tutoring**

Although these tendencies have great practical value and are based on many practical experiences, there is a lack of empirical data on their occurrence and use in on-line virtual communities. This paper explores these and other roles of tutors in an on-line learning environment.

## **EXPECTATIONS FROM TUTORSHIP IN VIRTUAL COMMUNITIES**

To really understand the role of the tutor within a virtual community, it is necessary to define what a virtual community is. The concept of community is nowadays quite popular and assumes as its central focus group organization and sharing common goals, mainly working face-to-face, but also using different types of mediated communication tools. Two approaches give useful suggestion about what “communities” are: The “community of learners” (Brown and Campione, 1990) theory that tells us what an educational community is, and the “community of practice” theory (Wenger, 1998) that underlines the social aspect of a community organized around a common task. In both cases the learning process is envisioned as very socialized and collaborative, always “situated” in a specific context (Brown, Collins and Duguid, 1989). The relevance of the context-situated learning is connected to the idea of knowledge being not resident in one place, but “distributed” over and within all the participants and all the tools and artifacts located in the context (Salomon, 1993). According to these perspectives, the person in charge of supporting the effectiveness of the group – in our view the tutor – should design the task and continually help the members to turn their implicit knowledge into explicit. This process includes the “emigration” of the knowledge from one member of the community and the “appropriation” of the knowledge by the others.

How can those suggestions coming from those models be applied to a virtual community? First of all, let us take the changes introduced by becoming virtual. The physical walls of the place where the community resides or works no longer define its borders. The virtual space occupied becomes the residence of the community. The virtual space is initially perceived as a place belonging to nobody and a feeling of ownership arises progressively, as the place is being populated and filled with objects.

Perceiving the others is no longer based on face-to-face interaction, but rather on what has been defined as “telepresence” (Steuer, 1992). This term emphasizes the interpersonal relationship as based on the exchange of information about the environment, themselves and about how the others are perceived. Features obvious in face-to-face interaction, such as age, gender, physical appearance, are no longer relevant and they can only be inferred from the interactions and actions in the virtual space.

The social dimension is even more enlarged because of certain technical features of the virtual environment, such as the possibility to have multi-user connections. This feature allows

occasional guests and visitors to just step in and take a look, expecting a warm welcome. Furthermore, traditional roles (teacher, student, leader, boss) are exploited in different ways even by the very person traditionally playing that role in face-to-face contexts (Coogan, 1995). One of the reasons for these changes is related to the different emotional expressions mediated by the physical “invisibility”, perceived by some users as protective.

The communication is necessarily mediated, thus it is necessary to taken in account how the communication means are used. In fact, especially when the community is at its first attempt to use communication tools, people need some time to get acquainted with the technical features: what can be done with it, how can it be used, what are the options available. Knowing how to use the mediated communication is not only a technical problem, but rather a matter of considering the “affordance” (Norman, 1999), the semantic and conceptual capacity of the tools used. Mediated communication is shaped around the “grounding” system that users are able to conceive (Clark and Brennan, 1991; Dillendourg, Traum and Schneider, 1996) and the tools’ capability to support each other (Ligorio, 2001).

Tutoring a virtual community means being aware of all these aspects and being able to manage them in strategic ways, as means to achieve the community’s aims or to push the community to set higher goals. In the project presented here the tutors, each with different types of expertise, are supporting a virtual community. In planning their actions they were inspired by the community of learners’ principles and they took the specific characteristics of the virtual environment into account.

## **THE EUROLAND PROJECT**

Euroland is a cross-national project involving a virtual community formed by students, teachers and researchers from the two countries (Italy and The Netherlands) who designed, built and populated a three-dimensional (3D) world. Its potential content was then discussed among the participants in the project, as suggested by the community of learners’ model. The content of the world included several “cultural” Houses, such as Houses of Food, Music, Art, and Travel. This project had several aims (Ligorio, 2001; Ligorio and Talamo, in preparation; Ligorio and van der Meijden, in preparation), but in this paper we will focus on exploring tutorship functions within a virtual community based on educational aims and synchronous meetings.

The virtual world was constructed using *Active Worlds* (AW) (<http://www.activeworlds.com>), specifically developed to build a “universe” for educational purposes. The AW software is desktop, internet-based, user-oriented, and belongs to the non-immersive type of virtual reality. With AW, it is possible to create 3D virtual worlds, without using any computer-external means, such as gloves or glasses, but only the computer and the active participation on the part of its users (Bricken, 1991; Bricken & Byrne, 1992). Within the virtual worlds built with AW, users can walk through, navigate, and fly over 3D objects. The presence of a user is made visible by “Avatars”, animated 3D characters representing users (cfr. Figure 2)

INSERT HERE FIGURE 2

**Figure 2 - A photo screen displaying the Active Worlds interface and some Avatars.**

The communication in AW occurs mainly synchronously, both by text-based chat and by visually manipulating virtual 3D objects.

We believe that, based on this type of features, the AW technology creates a unique learning environment. In fact, AW differs from other virtual environments used in education, such as MUD Objects Oriented (MOO) environment (Curtis & Nichols, 1993; Bruckman, 2000). MOOs are characterized by a bi-dimensional and textual nature versus the three-dimensional and figurative nature of AW: in the latter users can see them selves walking through rooms and objects and their avatars are provided of several actions such as weaving and jumping. Those technical differences support also specific socio-pedagogical aspects. First of all users’ perception of their presence is dynamic and realist (Talamo & Ligorio, 2001) and the three-dimensional nature supports a high motivation to participate actively and contribute to the learning environment for those who have special needs and low writing skills (Bruce, 2001; Lauret, 2002).

## **THE VIRTUAL COMMUNITY**

The community of Euroland was composed of seven groups of students (4 Italian and 3 Dutch), their teachers, some occasional visitors, a cross-national research group and three on-line tutors

with different competencies. One project manager (Bea) took care of the psycho-educational aspects of the project; another tutor (Little Prince) was in charge of its technical aspects and later supported the community mainly off-line; the third tutor (Clarence) replaced Little Prince. The students ranged in age from 9 to 14 years. The community connected to Euroland during the 1999-2000 school year. As defined by the “situated curricula” approach (Ligorio, Talamo and Cesareni, 1999), general guidelines were provided by the project manager, guiding each participant in the design of specific activities in keeping with the available resources and constraints of the particular classroom. Following the distributed cognition principle (Salomon, 1993), each classroom participated on the basis of its own interests and peripheral participation was also welcomed. The interdependence principle (Salomon, 1993) was applied by asking the students from one country to build the cultural Houses for the other country. For technical reasons, only a restricted number of students from each classroom were given access to Euroland and thus formed a “citizen group”.

Each classroom participated in the project in a different setting. In general, two teachers helped the citizen group during the on-line connections: the English teacher focused on the communication with the partners from the other country, and the other teacher was in charge of the specific educational content developed in the virtual world. In all cases, the virtual Houses were first planned in the classrooms and later built in the virtual world. The citizen group was selected by their teachers: in certain cases the selection took the students’ proficiency in using English into account as well as their computer skills. In other cases, the teacher wanted to offer this experience to students needing to be motivated for school activities.

Three synchronous meetings were scheduled per week, and at least two researchers provided pedagogical and technical guidance during these meetings. An overview of how the virtual community of Euroland was composed is shown in Table 1.

Type of participants	n. of participants	n. of interventions	Ratio Int./participants
Tutors	3	16821	5607,00
Researchers	4	2407	601,75
Teachers	13	3323	255,62
Students	40	6490	162,25
Occasional guests	27	331	12,26
Total	87	29372	337,61

**Table 1 – Type of participants and number of interventions**

The table illustrates that the total amount of chat interventions differs depending on the type of participants but independent of their numbers. The three tutors participated with a great number of interventions. The other types of participants seem to be involved quantitatively in accordance with their responsibility and role in the organization of the project.

## **DATA COLLECTION AND ANALYSIS**

To analyze the role of the tutors within the Euroland community, the on-line chats, automatically logged by the AW system, are used as the main source of data. These data are analyzed using two different systems described below.

### **The tutor functions category system**

The first category system was dedicated exclusively to the analysis of tutor functions. This system was based on the community of learners' principles and takes into account the virtual dimension of communication. This type of analysis aims to observe how the Euroland on-line tutors exploit their actions within the virtual community (Ashton, Roberts and Teles, 1999). All the tutors' interventions in the chat-room were analyzed by that category system. Three independent researchers checked the interventions' categorization. The uncertain cases were discussed until an agreement had been reached.

The category system of tutorship comprises the following four different functions:

1. **MANAGERIAL**: all the attempts to coordinate the activities and keep the project in line within its general aims;
2. **SOCIAL**: interventions aimed at supporting social and interpersonal relationships between community members through the consideration of personal expressions, needs, requests, and feelings;
3. **TECHNICAL**: all the interventions related to specific technical problems (computer connections, server availability, etc...);
4. **PEDAGOGICAL**: explicitly aimed at sustaining the content learning process about the specific didactical contents as well as strategies of building the virtual objects used to fill Euroland.

## **Discourse analysis**

A qualitative analysis of the development of tutoring functions in Euroland proceeded from the discourse analysis of the chat logs. This type of analysis aims to show the interactive dimension of tutoring a chat-based community. In contrast to asynchronous tutoring, leading a synchronous community (i.e. mainly using chat interaction) stresses the negotiation aspects of tutorship functions. The development of tutorship is, in the case of Euroland, mostly negotiated in “talk in interaction” (Schegloff, 1992). These interactive aspects allow us to analyze the contribution of all the members of the community to the development of a tutorship that is situated (because the interactive context is taken in account), and shared (because it is the result of negotiation processes).

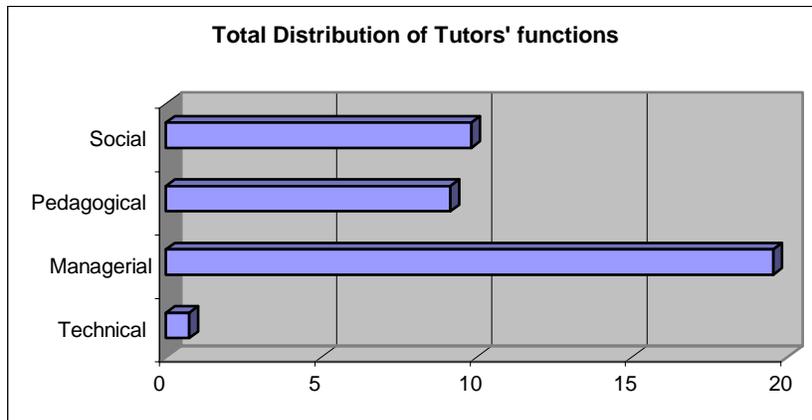
Discourse analysis was meant here as a tool that could provide significant data on the social construction of shared meanings in the community. From a theoretical point of view, in fact, discourse analysis considers talk as social action (Antaki, 1994; Bonaiuto and Fasulo, 1998) and contributes to identifying the functions put into action through talk by the community members.

The chats were selected on the basis of relevant events in which the tutorship functions, extracted with the other category system described above, are more evident. In order to focus our analysis on tutoring functions, we selected from the full corpus of data all the chat excerpts dealing with the following events a) Newcomers’ arrival; b) Members talking explicitly about tutors’ actions; c) Other members acting as tutors.

## **RESULTS**

### ***Tutor functions in a virtual community***

During the project, tutors assist the community using four different types of functions: social, pedagogical, managerial, and technical. Those functions are identified by the category system used to classify tutor interventions. The impact of these functions on community life is significant, with 39% of the total interventions coming from the tutors performing these functions. Figure 3 shows how those functions are distributed.



**Figure 3 – Distribution in percentage of the four tutorship functions.**

The most relevant function appears to be the managerial. Other studies (Talamo, Zucchermaglio and Ligorio, 2001) pointed out that the high frequency of that function is due to the communication tool used: the chat. Chats are suitable to discuss the organization of the sub-tasks, to make decisions about who is taking charge of specific activities and when, and to assign and share responsibilities within the virtual community. The other functions are carried out through the other communication tools embedded in the virtual environment (a mailing list available for the project, a discussion forum), in certain cases off-line and often face-to-face, within the classrooms. For instance, the teachers mostly carry out the pedagogical function inside the classrooms since this project is not a distance course. Community within the real classroom is still important and Euroland is fully integrated into the in-classroom activities.

One of the aims of the community, suggested by the theoretical model embraced, was to create specializations and specific roles, not necessarily linked to one person. As a matter of fact, some sort of accomplishment of the different functions of tutors was due to the roles officially played by the different actors in the management of the project. The intention was anyway to have functions clearly identified but interchangeable, so that the effectiveness of one function was not dependent on the presence of a particular tutor (Talamo, Zucchermaglio and Ligorio, 2001).

***On-line tutorship as a fluid, situated and dynamic process of meaning negotiation.***

The qualitative analysis has been performed in order to describe and show how the on-line tutorship is the result of a negotiation process where actions and objects acquire specific

meanings in the interaction between tutors and students. In the excerpt below, the tutor is discussing with some students the construction of a swimming pool near the House of Food. The first column of the table contains the name of the person intervening, the second reports the original utterances and the third the translation made by the authors of this paper.

[*nov. 24th, 1999*]

Bea	scusate questa é la casa del cibo??	sorry, is this the House of Food?
Dan.	si bea	Yes Bea
Bea	e che c'entra la piscina??	And what has a swimming pool got to do with it?
Ari.	si è la casa del cibo	Yes, this is the House of Food
Bea	va benissimo é bellissima solo voglio capire perché la costruite	It is great and it is very nice. I only want to know why you are building it?
	quale é la relazione con il cibo??	What is the relationship with Food??
Ari.	ma davanti alla casa del cibo abbiamo previsto di costruire un boschetto con un laghetto naturale	But we planned to build a small wood and a natural pond
	è nel nostro progetto col lego!!!	It is in our LEGO project!!!
Bea	cosi tanto per o c'e un motivo speciale??	Just for the sake of it or is there a special reason??
Ari.	non capiamo la tua domanda..	We don't understand your question.
Bea	voglio dire: la piscina ha uno scopo??	I mean: has the swimming pool got a purpose?
Ari.	è solo per fare più bello l'ambiente intorno	It is only to make the environment surrounding it nicer
Bea	o serve solo per fare più bella la casa??	or is it meant only to make the House nicer?
Ari.	non è una piscina..è un laghetto naturale..lo facciamo per bellezza	Is not a swimming pool... it is a natural pond.. we do it for a sense of prettiness
Bea	ahh scusa un laghetto naturale ....	Ah sorry a natural pond ...
Ari.	serve solo per fare più bella la casa..uffi...	It is only meant to make the House nicer.
Bea	bello molto rilassante ...	Nice, very relaxing ..
Ari.	oh---!!!	Oh ---!!
Bea	magari ci si può fare un pick nick ;)	We could even have a picnic ;)
Ari.	appunto----	That's right ----
Bea	:)))	:)))
Ari.	ci metteremo dei tavolini..:))	We will put some tables... :))
Clarenc e	allora chi vuole sentire altri rumori disponibili oltre la cascata ?	Now who wants to listen to some more sounds available beside the cascade?
Ari.	per degli incontri ..con gli olandesi..	For the meetings .. with the Dutch ...
	noi!!	We do!!
Bea	che meraviglia ...	That is wonderful ...

The project manager is clearly referring to a specific function that the swimming pool has to represent in connection with the building of the House of Food. The pupils propose an explanation that adds an aesthetic dimension that the tutor can only accept by reinterpreting it as a new function still connected to the House of Food (the picnic area). The students accept this functional interpretation since it is in accordance with the original aim of the House of Food

already planned in the classroom. It is interesting to notice here that the real problem about this virtual building is the negotiation of two dimensions: the functional versus the aesthetic features of the virtual objects and the socialization versus the team-based construction. The tutor is here led by students to consider other valuable aspects not immediately referring to the functionality of the virtual objects.

### **Sharing the community management**

The following excerpt shows how some of the functions of the project manager are shared between different members of the community. Here we can look at the first arrival of some newcomers from the school in Bari, a town in the South of Italy. Even though the two tutors are both connected at that time, Mantastrega (a teacher from Milan) integrates their work by actively welcoming the new children in the community:

[February 2nd, 2000]

bea:	ehi coccolini tutti ATTENZIONE ci sono i baresi ....	Ehi sweetheart ATTENTION all of you there are the kids from Bari
ale:	benvenuti!!	Welcome!!
bea:	smaaaaaack a piepa, fran., ma. e mic.	Smaaaaaack (kisses) to piepa, fran., ma. and mic.
mantastrega:	benvenuti coccolini	Welcome sweetheart
mantastrega:	sono la strega	I'm the witch
MarMich:	di dove siete?	Where are you from?
mantastrega:	buona,però....	But a good one ...
Clarence:	eccoci di ritorno :o)))	We are back :o)
mantastrega:	Ciao piepa smack	Hallo piepa smack
mantastrega:	ciao mic	Hello Mic
Clarence:	ciao BARI !! :o))**	Hello BARI !! :o))**
mantastrega:	smack smack	smack smack
MarMich:	ciao mantastrega	ciao mantastrega
mantastrega:	smack smack smack :))	smack smack smack :))
mantastrega:	vi serve qualche magia???:_))	Do you need any wizardry???:_))
mantastrega:	ciao franc	Ciao Franc
bea:	allora bimbi di Bari come vi sentite in Eurolandia? Vi piace?	So, kids from Bari how do you feel in Euroland? Do you like it?
MarMich:	si grazie	Yes thank you
bea:	sapete come muovervi?	Do you know how to move?
mantastrega:	vi presento Clarence..parla come un umano ,ma lui è un angelo;))	Let me introduce you to Clarence.. he speaks like a human being, but he's an angel ;))
MarMich:	ci piace, ragazzi!	We like it, guys!
bea:	un angelo pinguino ...:)	A penguin angel .. :)
mantastrega:	(ha le ali)	(he has wings)
Clarence:	ciao coccolini di Bari :o))	Hello sweetheart from Bari :o))
mantastrega:	sìsìsì	Yes yes yes
bea:	ehi voi li a Bari siete da soli oppure con	Ehi you in Bari, are you alone or is there a teacher

	qualche insegnante?	with you?
MarMich:	sì ci stanno accompagnando fran., pi. e marial.	Yes, Fran., pi. and marial. are with us
mantastrega:	ciao fran. ciao Pi. ciao marial. smack smack smack	Hello fran., hello Pi., hello marial. smack smack
bea:	perfetto .. allora cosa volete vedere ragazzi di Bari?	Perfect .. so, what do you like to see guys from Bari?
mantastrega:	Coccolini Baresi, volete venire a vedere la nostra casa del cibo??	sweetheart from Bari, would you like to come and see our Food House?
MarMich:	dacci le coordinate	Give us the coordinates

In this example Mantastrega plays the function of project manager in a complex way, by adopting and developing several attitudes and actions usually characterizing the performance of the community leaders. The actions she performs are all related to the management of the newcomers and their introduction into the community culture: she welcomes the new children (“welcome”), she asks them for some information (“where are you from?”), welcomes their teachers, introduces the technical tutor (“Let me introduce you to Clarence.. he speaks like a human being, but he’s an angel ;))”) and she invites all the newcomers to visit the House of Food that she and her students are building.

Moreover, by welcoming the new members, she is also acting as an expert member of the community and she starts introducing them to some shared meanings from the community repertoire:

a) the use of smacks (a way to send kisses to community members) refers to a shared repertoire of greetings that has been co-constructed in the early beginnings of the community (see also Talamo and Ligorio, 2000);

b) the definition of the technical tutor as an “angel” refers to a double meaning hidden in his nickname. The name Clarence is a reference to a movie in which an angel receives his wings by helping someone on earth. In the chat, the members of the community commonly use the reference to the tutor as an angel when they need some technical assistance from that tutor.

Introducing newcomers to the shared meanings of the community helps them gain access to the process of communication and the negotiation of new meanings. As Wenger says (1998), this is usually done by the experts, who are the members of the community having the easiest access to the process of negotiation as they are in charge of the “ownership of meanings”.

### **Facilitating newcomers: sharing tutorship functions**

Tutors' pedagogical functions in synchronous virtual communication can also be developed as shared functions. The following example shows the integration of teachers' and tutors' interventions in helping the first connection of some new Dutch students (An., Ir. and Jon.):

*[febr. 21st, 2000]*

Clarence:	An. Ir. Jon...do you like this "House of Food" ?	
Jon.:	Let's go	
An.:	Ikook	me too
Ir.:	anne ?????	
Jon:	jes i doo	yes I do
Bart L:	An., Ir., Jon., vinden jullie dit leuk?	An., Ir., Jon., do you like this?
An.:	ja/	yes
Jon:	ware is the Food	Where is the Food?
Bart L:	antwoord in het Engels: Yes, I do	Answer in English: Yes I do
Clarence:	over the table	
Clarence:	and in the fridge :o)	
Bart L:	Eten op tafel en in de ijskast	Food is on the table and in the fridge
An.:	I am sorry	
Clarence:	and there is a chicken in the oven	
Bart L:	er is kip in de oven	There is chicken in the oven
An.:	Hihhi	
Ir.:	hoe schrijf je ja ik vind het leuk hier	How do you write: I like it here?
Clarence:	I don't eat chickens ! I am a bird, too :o))))	
Bart L:	Iris I like it here a lot	
An.:	yes I like it	
Clarence:	fine !	
Ir.:	I love chickens	
Clarence:	now let's go to Ivo	
Bart L:	clarence eet geen kip want hij is ook een vogel	Clarence doesn't eat chicken because he is a bird, too
Jon.:	Yes	
Clarence:	Bart I am going to tech you the teleport	
Bart L:	we gaan nu naar Ivo	We are now going to Ivo
Clarence:	please do the following :	
Ir.:	ga je mee an. ???	Are you coming an.???
Bart L:	Okay. Please do	
An.:	ja	Yes
An.:	Ikom	I am coming

This excerpt shows some interesting phenomena about shared and distributed tutorship during on-line connections. We focus on the coming together of the action of the on-line tutor with the intervention of the classroom-teacher who can better focus on the children's real skills. Here Bart L. (the children's classroom teacher) is trying to facilitate the children's' first connection by translating what the tutor says. In this way the students can focus their attention on Clarence's instructions. These considerations open new views on the integration of tutorship expertise at

both global and local levels in large virtual communities. The teacher acts here as a cultural mediator, because in this situation he is the main expert about children's skills and about the cognitive overload that they can sustain, while the on-line tutor can act in his role of supporting them on a technical level only. The on-line tutorship is here supported by the teacher's expertise in classroom management (which is also communicated through telematic communication). The interaction continues, but after a while the two girls lose the gist of the conversation:

Ir.:	ik snap het niet jij an.	I don't understand it, do you An.?
EDUHML I.:	Willen jullie uitleg?	Do you want explanation?
An:	ik ook niet heeft5 ze het tegen ons?	Me neither, Is she talking to us?
An:	ja graag	Yes please
Clarence:	I can't understand Dutch sorry :(	
Ir:	ja graag	Yes please
EDUHML I.:	Jullie willen naar de coördinaten 3d 6w?	You want to go to coordinates 3d 6w?
Jon:	Okay	
An.:	ok	
EDUHML I.:	Je drukt op de Alt-toets	Press the ALT key
EDUHML I.:	Dan T	Then T
EDUHML I.:	Nog een keer T	again press T
EDUHML I.:	Dan zie je een veld met "Euroland"	Then you see a field with "Euroland"
Bart L:	Okay Clarence I am going to do that	

As soon as the Dutch student expresses her difficulty in understanding the meaning of the English-spoken interaction, Ivo, another Dutch student (from another school) intervenes. The help he offers to the newcomers mirrors the action of the two tutors, by starting to facilitate the comprehension (offering a Dutch translation) and going on to give some technical explanations.

## CONCLUSIONS

In this project, the tutorship on-line was aimed at establishing a virtual community of learners. From the results gathered, it is possible to observe that tutoring on-line is quite a complex action, performed through four different functions: managerial, social, pedagogical and technical. The function performed most on-line is the managerial. This result is, at least partially, due to virtual nature of the overall learning environment within which the community lives and interacts. Discussing the project and defining the responsibility of each classroom are mainly dealt with in the real context, within the classroom. When these aspects need to be discussed within the virtual community, then the chats on-line are the best tool and the on-line tutors are the ones taking charge of it. The discourse analysis shows that, in specific situations, the other members of the

community cover some aspects of the tutorship. This result shows that a virtual community of learners has been established and, at the same time, highlights new features of on-line tutorship. During their work in the classroom, the students added new meanings and values to the project, as shown in the example reported on the fluid tutorship. In this way, the students are appropriating not only the content of the curricula, as suggested by the community of learners' model, but also what the entire project is about. When this emerges, the tutors have to show enough flexibility to accept the students' initiatives, even at the cost of putting aside some of their own expectations.

The community models also promote a new role for the teachers: they should not limit their actions to information management, but they should also act as social managers. In the example reported about the shared management of the community, it is evident that the teacher is covering this function and the official tutor accepts this new teacher's role.

The arrival of newcomers provided an opportunity to observe some new features of on-line tutorship. First of all, there is an integration between a "local" tutorship, performed by the teacher of the newcomers, and the community tutorship, still in the hands of the official tutors. The teacher is "situating" the tutorship for his students, helping them take the first steps in the virtual world, where a new language and new objects are used. The official tutor recognizes his limits (he does not speak Dutch) and reinforces the "local"/teacher tutorship. Secondly, the more expert students (and in this case spending a longer time in the community) can also act as tutors, giving different types of support.

In this project, there is a reciprocal relationship between the virtual community and the classroom community. The virtual community constantly gives inputs for the work in the classroom and, at the same time, is itself enriched by what the students are importing from the classrooms. In this case, the tutorship needs to be clearly defined in its functions, but progressively distributed among all the participants, as already emerging from the discussion about the changes of the tutor role as reported in the first paragraph. We found that the distribution of the tutorship is situated in time and space, related to the events occurring within the community, as instanced in our project by the arrival of newcomers. It is distributed and negotiated among all the participants depending on personal skills and competences, made relevant by the nature of the task. It is fluid and dynamic, shaped constantly around the needs and the growth of the community. When the community members are able to adopt some of the

tutorship functions, they progressively move from a peripheral toward a central participation, which is an important learning process within a community (Lave and Wenger, 1998).

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