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ABSTRACT
From chalk to silicon
Towards a new society of learning

A social analysis of distance learning (DL) must take into account the following points:

• computer mediated communication (CMC);
• shared environments-situations;
• the role of people who mediate the knowledge.

Looking at the issue from the perspective of the "theory of the situated action" clearly shows the importance of building up "shared situations" based on the "cultural artifices" in the CMC between teacher and learners involved in DL:

the teacher, in defining the situations, interprets the environment on the basis of the frames afforded by previous didactic experiences, which, in most cases, might well still be defined as traditional;

however, the students involved in DL, since they are motivated differently from traditional learners, constitute an educational situation which is not always in line with that of the teacher and this misframing leads to misunderstanding in communication. Defining communication becomes more difficult when the process of negotiating the meanings on which to build shared situations and the cooperation required for the learning processes is mediated not only by the machine but also by a tutor. As a result of this mediation we pass from the non-transparency of the machine to the non-transparency of the class and we arrive at the paradox of a teaching environment where the teacher does not see the class and the learners do not see the teacher;

teachers do not perceive that there is a class – in their sense of a class - in front of them (both because the reference points of a class on the net are different from a traditional class and because the concept of a class on the net is different from a traditional class);

the students perceive the presence of the tutor and didactic contents much more than the teacher as intended traditionally, since the material on line and the tutor are the opportunities afforded by the environment in order to find a simple situation which is enough to pass the exam.

PAPER
From chalk to silicon
Towards a new society of learning

This paper reports a number of the conclusions of a study into the relationship between learning and new technologies.

The study comprised three investigations which were carried out during a three year PhD:

- during the first investigation a questionnaire was administered to a sample of 106 students aged between 24 and 32 (average age 28) who were attending two on-line modules of a post graduate course (restricted to graduates with so-called "weak" degrees);

- during the second investigation interviews were carried out with 73 students of a University of the Third Age (UTE), the youngest interviewee was 51, the oldest 82 (average age 65). Interviews were also carried out with the didactic heads of the UTE and of Universities for All Ages in Friuli Venezia Giulia;
- in the third investigation a questionnaire was administered to 70 students of an on-line degree course in Public Relations (PR). Out of a total of 166 course participants the sample was made up of students aged between 19 and 58 and the average age was 32.5. 17 teachers of the on-line course were also interviewed.

Digital presence/absence

Virtually all the teachers interviewed perceived the presence of very few members of the class: at best 20% of the students, at worst 0%, i.e. total absence.

However, this does not mean that the students were not present, both as readers of the forums even if they did not intervene, and to obtain information in order to plan their course of studies. Indeed, the very same students of PR felt cut off from their teachers (61%) which indicates that both parties were willing to interact even if they did not actively seek to do so. Simply listening in on the net leaves only the slightest of traces, and although they can be tracked electronically and made available to the system administrator or tutor, there remains no real trace in the virtual experience of the teacher, especially if the teacher is still locked into a traditional perspective of interaction with students, i.e. interpersonal, face to face relations. It is no coincidence that the teachers who felt this absence least were teachers who had already been using e-mail to further didactic explanations with their students. Behind us there are thousands of years of relating to each other face to face (Mantovani, 1997) and other forms of communication have not cancelled the previous ones but simply supplemented them. The student who physically attends a lesson might well be mentally more absent than a lurker in a chat session but the student is there, occupying a seat in the classroom, and depending how interactive the lesson is, the student's level of involvement can be measured, the student might even occasionally ask a question, or nod and in all probability the teacher will remember the student was there. On-line it is different: some chat systems signal when someone has come into the room, but in order to communicate the person must interact with the keyboard, the Web Cam is rarely used. A few lines which then disappear followed by other messages, a mail which ends up in a long list of other e-mails, is not as effective to build up the idea of a person as an hour of a lesson, given that until nowadays much of our mental resources have been devoted to human relations face to face, to organising and managing information from tangible realities. One example will suffice to render he idea: if you meet someone you will remember the meeting, perhaps you will write some brief notes of what was said. But no-one would dream of summarising an e-mail, a chat session or a forum. Knowing that the information is always available on-line on the one hand makes it superfluous to memorise it (Longo 1998) and on the other hand renders the net (as a group of connected memory machines) an extension of the human memory (Longo, 2004; De Kerkove, 1991). Visual memories leave a greater trace in our memory (Devoti, 2000) and the reality is image, as well as depth, movement, smell, touch. These are stimuli which involve the individual synaesthetically, and involvement increases interaction, and interaction enhances memory (Perego, 2001). Writing, on the other hand, much as it supports sharp reasonings, however leaves a vague trace in our memory (Devoti, 2000) and on the net a person is almost always written text.

Means of non communication

The study set out from a paradox, a classroom with no teacher and no students: applying the theory of situated action (Suchman,1993) as a key to read and describe the phenomenon observed (e-learning) the following hypotheses can be drawn:

- the cultural framework of University teachers depart from and that of the students in their courses do not correspond and that
- these two players from the same virtual environment draw out different situations, making it difficult to share a domain of consensus on which to base interaction

and the outcome is teachers who do not see the students and students who do not look at the teacher. This occurred to a certain extent and indeed it would have been wholly so had it not been for the mediation of tutors since one of their functions may be to moderate and manage the dynamics of communication and relations on the net (Cohen, 1994).

However, there is a clear sensation among the teachers interviewed that the class is largely absent, despite continual stimulation to communicate. The consideration of this widely felt perception among teachers opens an important question:

a networked computer is usually idealised as a means of communication and represents perhaps the only case where
- the operations of the means
- the communication (composition of the message, sending, reception, part of the coding/decoding) and
- the context of the communication (at the level of shared representation overlapping with the channel and the means, the context is usually defined as "in chat", "in Internet"…),

are manageable on the same interface through languages whose minimum elements make up the basic bricks of more complex and higher codified systems (from the bit to virtual reality).

It is hence even more difficult to distinguish, in communication mediated by computer (CMC), the channel from the means, the context from the channel and the means from the message (McLuhan, 1964).

On the basis of the above and of its multi-media aspect, the computer is reputed to be, and used as, a means of communication by most people (even 16% of the students of the University of the Third Age).

However, it can also become a means of non communication contradicting the paradigm according to which is it impossible not to communicate (Watzlawick, Jackson, 1971):

a student can follow a lesson in a virtual environment without the teacher realising he is there.

In the absence of information regarding presence such as:
- intense communicative activity by the student,
- icons or other forms which indicate at least the passive presence of a lurker,
- a register of presences

even the absence of a person cannot be signalled, in that in the absence of signs to indicate otherwise, i.e. presence, there cannot emerge significant signs of absence, and this semiotic of presence/absence is even more applicable to a written text such as exchanges on the net (Costantino, 2002; Greimas, 1986).

Perception of identity and origin of the artefacts

The most well known studies on virtual identities are probably those of Sherry Turkle (Turkle, 1997): "whilst some people resort to life on-line as a surrogate for a life off-line or "real" which is not very fulfilling, most cybernauts use digital environments to build an identity perceived subjectively as more real, indeed perhaps to build a multiplicity of personal identities" (Roversi, 2004, p. 35). Taking on board this interpretation and probably motivated by this reason, many users of the web join the infinite numbers of virtual communities in order to play, from the MUDs of the past to the latest MPORGs. These virtual spaces are environments animated and built by the

participation of players who take on millions of identities (Extremelot alone, an on-line role game, two years ago boasted 30,000 identities).

The case of a psychoanalyst who pretended to be a paraplegic woman on-line and thus gathered the intimate confessions of numerous women (Stone, 1995) is famous as is the experiment of the first computer program which managed to simulate a credible psychoanalyst (Weizenbaum, 1966).

In the light of these briefly outlined considerations, it was to be expected that there would be a generally widespread variation between the perceptions of oneself and of others on line, whereas a global analysis of the responses highlighted the following groups of users:

– the teachers of the on-line PR course, who did not perceived people as particularly different between on-line and face to face;

– the students in the post graduate course who perceived slight differences, the profile of these participants is in general less computer literate than the on-line PR students, they followed the lessons on-line in classrooms physically shared with fellow course participants and, as was to be expected (Birkenbihl, 1998) they frequented on line the same classmates they had earlier met face to face;

– a third type who effectively have different perceptions of self and of others according to whether they are on-line or face to face, within which there are only on-line PR students (some female students, students who spend many hours on their PCs and students in the third year of the course).

This is very important from the point of view of situated action applied to the origin of the artefacts. As outlined at the beginning of the paragraph, a number of previous studies have shown that the person who wants to seem different on the net can manage to do so at least with regard to others. This however has only been verified for a small number of cases examined within this research study and generally coincided with the participants who were most exposed to aspects connected to computer literacy (hours spent on the PC, year of studies in the on-line university course, communication on-line). This leads us to deduce that a person who has not yet overcome the needs connected to the functional and operational aspects of presence on line requests an exchange of an especially informative nature, we might say, in terms of language functions (Ricci Bitti, Zani, 1983), adopting a form of communication which is more referential-representative. People who have spent more time on-line and have greater computer literacy also ask themselves questions regarding the perception of identity, thus they manage to read the differences between being present physically and being on the net, practise conversational exchanges on-line which go beyond a mere request for information as to "how to do something", perceive and elaborate information about the identity of the participants and activate the interpersonal-expressive function of language.

This consideration raises interesting analogy with Maslow's pyramid of needs (Maslow, 1954): the table (fig. 1) proposes the example of a possible comparison between the needs and the issues which students would face according to the level of literacy and frequency on-line.

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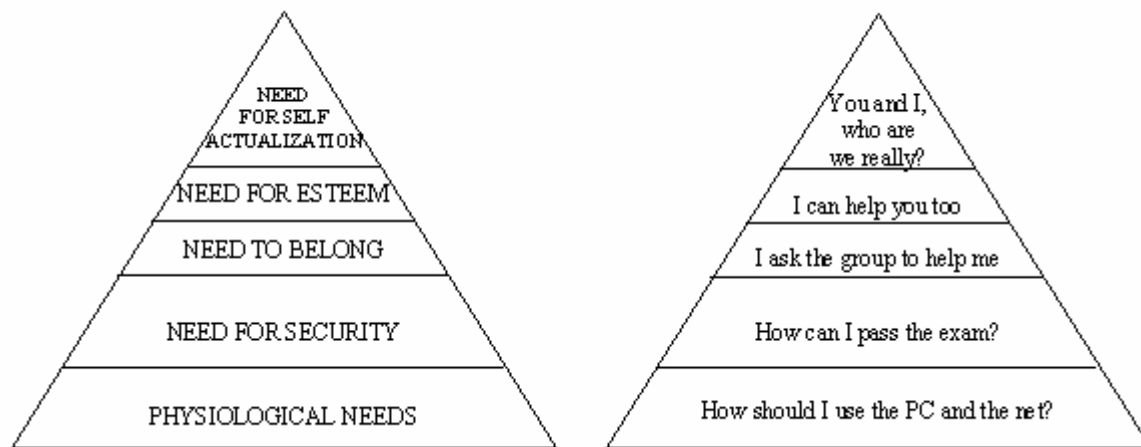
Fig. 1

With this regard it is worth referring to what was observed in the final analysis of the last investigation: the vices and the virtues of a normal university are reproduced on line and in some cases catalysed by the quality of the means of communication. That a possible linked-up society reproduces real society in many of its aspects is obvious, as was witnessed during the beta testing of "The Sims Online", a collective game environment of Electronic Arts (EA):

> In designing "The Sims Online", EA decides to include the market of goods and consumption in the game. On the other hand a simulation must be as faithful as possible to the original and so why not introduce consumer goods and the complex mechanism of their production and sale and purchase, with questions related to branding, to distribution, to company policies concerning the consumer?
> This enables EA to obtain paying sponsors, who are naturally interested in having their goods bought in an environment in which there are thousands (and potentially millions or billions) of consumers.
> Thus EA, thanks to a line of code and a highly attractive contract of sponsorship, inserts the fast food chain McDonalds in the game, permitting the players to open restaurants of the famous chain and sell tasty Big Macs to the other players, even fixing it so that a player who eats a McDonalds hamburger is advantaged compared to players who eat something which is not branded.
> Almost immediately something totally unexpected happens: a large number of players start to contest and boycott the famous brand, for principles related to the game (the presence of one single brand represents a monopoly and the fact of having to consume only that product in order not to be disadvantaged is considered incorrect) and also transfer to the surrounding world the accusations levelled against the famous American corporation in the real world (Baggis, Vanzella, 2003).

Thus we have a virtual space, a technological artefact which reproduces the needs, the vices and the contestation of the society from which the users come. The structural coupling, the reciprocal co-determination between media and society is clear (Colombo, 2003).

Yet above all the varying degree of difference perceived between on-line and physical presence provides the occasion to confirm that there is some form of structural coupling between the competences, the purposes of the player and the affordances which emerge from the virtual environment:

- when the net is taken as an instrument to acquire or form knowledge, without, simply because you are on-line, having to re-draw an identity or question yourself over much about it, you interact in virtual environments with other players who exchange information and thus you build up an open environment dense with flows of information where, by interacting with the environment and with the other players, you contribute to constructing the environment itself, the information connected to it and the connections between the information;

- but in a game community the player who plans the action on the basis of a cultural framework shared with the members of that community (Roversi, 2004) contributes to the environment by

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providing the other players with new affordances, as in an enchanted garden (Dibbel, 1995), a magic power, a weapon which will interact with the action of the other players involved, who all together will cooperate to ensure the survival of the game and the reproduction of its intrinsic culture.

According to the defences available to a virtual community, when faced with the intrusion of a player who upsets the framework of the situation of the other players, there can follow either the expulsion of the "revolutionary" identity from the community, the upheaval, or, at worst even the end, of the community itself (Rheingold, 1993): this can be someone who in a community based on Camelot proposes Tolkienian features (from a previous pilot investigation; Roversi, 2004), or someone in a chat session who does not follow netiquette or someone in a religious community of self-help who practises free flaming (Rheingold, 1993).

The opportunity to project an image which is different from that which a person might feel able to give face to face still remains a valuable resource for people who are not comfortable with their physical appearance and there is no question that in the development phase a physical perception of oneself as "inadequate" can, together with other problems, undermine not only a balanced emotional growth but also the perception of the teaching environment; indeed, it is widely accepted that there is a positive relation between well being in the environment and learning (Devoti, 2000).

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