E-learning and the third age

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Abstract
As a result of the general improvement in living conditions in industrialised Western countries, people aged over 60 years usually reach the ‘third age’ in good mental and physical condition. Contemporary society has thus had to endeavour to offer the ‘new old’ not only social services but also pastimes, leisure, social, cultural and educational activities. Among the range of opportunities being made available is that of acquiring skills in the use of information and communication technology (ICT), an area of ever-increasing prominence. This can be seen not only as an opportunity for individual cultural growth but also the basic condition for conceiving a range of practical network-based services and applications of great social significance for the elderly population. This article refers to one of these initiatives, developed in Liguria (one of the Italian regions with the oldest population), whose purpose was to train about 600 over-60s in the use of ICT. What we will analyse here in particular are the results of e-learning activities offered to a sample of participants and with reference to a segment of the entire training process envisaged by the regional initiative. The specific objectives of the activity were to verify the real possibility of proposing short, online learning modules on the use of Internet for older users; to survey users’ attitudes/reactions to e-learning; and to analyse the follow-up of distance training activities.

Keywords
case study, distance, groupware, ICT use, instruction, third age

Context of reference
The phenomenon of the ageing of the population is now common to most industrialised Western societies. However, it is in precisely these industrialised societies, where the socio-economic conditions seem better than in the past, that new ways of using free time are opening up for the elderly once they have left work (Young & Schuller 1991; Gelderblom 1999). This implies profound reflection on ageing not so much as a phenomenon in itself but rather as an integrated process in the evolution of life (Tuijnman & van der Kamp 1992).

Thus, while on the one hand it is necessary to make improvements in welfare in the strict sense, on the other it is equally important to develop education projects to allow elderly people to keep their skills alive and up to date (even when they are no longer directly usable following retirement) or acquire new ones, as well as enabling them to participate in the innovative processes and rapid changes that are occurring in our society, experiencing progress as consciously as possible, thus avoiding the progressive obsolescence of their knowledge and skills (Hiemstra 1992; White et al. 1999).

In particular, for elderly people, the acquisition of abilities in adequate and targeted use of ICT is not only an opportunity for personal development and growth (Hazzelewood 2001, 2002), but also offers the possibility of conceiving a range of network-based services of great social significance, such as facilitated access to information and help desks, assistance and aid, reduction in the risk of isolation, and the possibility of making one’s own professional, hobby and

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life experiences available to others (Irizarry & Downing 1997; Irizarry et al. 1997).

The ‘Informatica per la terza età’ project

From the standpoint of the effective cultural growth of the elderly in the use of information and communication technologies, between 2001 and 2002 Liguria region launched an experimental education plan (Progetto Informatica per la Terza Età – ICT for the third age – hereafter I3E) whose goal was to introduce over 600 over-60s to the use of ICT.

The basic idea was to educate ‘discerning’ users of computers, i.e. people capable of relating to IT tools (hardware and software) with a certain ease, accessing Internet services, and knowing how to interpret at least the essential information that usually appears in computer sales catalogues, etc.

The education goals were pursued through the provision of 42 simultaneous editions of the training course, organised in 42 different classrooms (scattered throughout Liguria), each made up of 13–15 people for a total of about 600 participants. Each edition was divided into two macro-phases:

- theoretical and practical training (onsite activities), lasting a total of 80 h, organised in two out of three weekly meetings of 2 h each run by an ICT teacher backed up by a classroom tutor;
- distance activities, lasting about 24–30 h, to be carried out in one’s own home as described below.

Distance activities

At the end of the classroom course, the participants who had attended lessons successfully (about 70% of the total) were given free use of a personal computer. This made it possible for them to continue the training course in two different ways:

- distance work (aimed at all participants) to reinforce what had been learnt in class, in other words a sort of independent revision/practice followed at a distance by an ICT teacher;
- online learning aimed at an in-depth examination of some topics linked to the use of Internet and targeted at a sample of participants (no more than 40) who had shown themselves to be totally independent in the use of network technologies.

This second activity, identified by the name of I3E-learning, was to enable the project practitioners to experiment with the use of e-learning methods on a limited (and therefore controllable) scale. The objective was to understand if, in a further edition of the same training course, e-learning could assume a more important role, to the point of being considered a complementary way (but not necessarily an alternative to the traditional way) of delivering contents.

Given the specific purpose of this article, from hereon reference will be made only to e-learning activities.

E-learning activity (I3E-learning)

The recruitment of the sample of participants to involve in the e-learning experimentation was based on indications given by the respective classroom teachers, who were asked to point out the participants who satisfied a number of conditions, in particular (a) basic understanding of the use of e-mail, and Web browsing, and (b) availability of tried and tested network technology in their own home.

The participants selected in this way were then organised in two separate virtual learning groups, each of which was coordinated and run by an online tutor.

In addition to respecting the criteria specified above, an attempt was made in the composition of the two groups to create a numerical balance between the gender, as well as a uniform distribution of the age of the participants in the 60–80-year-old range.

Teaching methodology

An online learning strategy was adopted to run e-learning activities, thus characterised by a strong network interaction between all the actors in the process (online tutor and group of participants) (Trentin 2002).

For each teaching unit, the participants were asked (with a specific explanatory message) to perform one or more exercises. At the end, they had to return the result asynchronously to their own tutor. Moreover, because of asynchronous communication, each of them could dedicate as much time as they wanted to learning and a study of the topics that were suggested online.
After the initial days of interaction, characterised by a mainly one-to-one (tutor–participant) form of communication between the tutor and individual pupil, the tutors urged the participants to establish self-help relations to solve the problems that emerged, thus fostering peer-to-peer learning dynamics.

E-learning objectives and contents

The I3E-learning process envisaged the acquisition of two specific skills of the typical Internet worker:
- the appropriate and optimum use of search engines;
- the establishment and management of one’s own networked e-group.

Table 1 gives the structure of the declared e-learning objectives, while Table 2 shows the modular format of the training course.

Network technologies used

The management of the I3E-learning course and interaction between participants used:
- e-mail, for one-to-one communication between tutor and individual participant;
- two e-groups (one for each virtual learning group), for one-to-many and many-to-many communication between tutor and participants, for group interaction between the participants themselves and for the distribution of teaching material.

The two e-groups, in particular, were set up on the Microsoft portal (http://www.msn.it), one of the many portals that today offer this type of service free. The choice of a free service lies in the goal of making participants acquainted with a tool that could be used after the course without economic constraints. The same objective could not have been achieved if, for example, a Learning Management System had been used.

Monitoring and evaluation of e-learning

Extensive monitoring was conducted parallel to the training to provide an overall assessment of the outcome of the experimentation. This evaluation concentrated on the analysis of three main aspects:
- the achievement of the declared training goals;
- the level of participation and involvement of the individual participants in online activities proposed by the tutors;
- the participants’ general attitude/degree of satisfaction regarding the method adopted to run the online activities.

Table 1. Objectives structure of the e-learning segment

<table>
<thead>
<tr>
<th>Macro-objectives</th>
<th>Intermediate objectives</th>
<th>Final objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make optimum use of search engines</td>
<td>Distinguish types of engine</td>
<td>Know how to search using directories</td>
</tr>
<tr>
<td></td>
<td>Make precise, optimum research</td>
<td>Know how to search using key words</td>
</tr>
<tr>
<td></td>
<td>Conduct advanced research</td>
<td>Know how to use Boolean operators</td>
</tr>
<tr>
<td></td>
<td>Understand the indexing mechanism</td>
<td>Know how to use adjacency operators</td>
</tr>
<tr>
<td></td>
<td>Understand other types of research</td>
<td>Know how to use the online help of the specific engine</td>
</tr>
<tr>
<td>Construct and manage virtual communities</td>
<td>Subscribe to and socialise in a Web community</td>
<td>Understand the advanced research functions of Altavista</td>
</tr>
<tr>
<td></td>
<td>Create a Web community</td>
<td>Understand the advanced research functions of Google</td>
</tr>
<tr>
<td></td>
<td>Manage a Web community</td>
<td>Understand the advanced research functions of Hot Bot</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Know how to use meta-tags</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Know how to use meta-search engines</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Know how to use newsgroup search engines</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Know how to moderate a community</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Know how to found a community</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Know how to personalise the community virtual space</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Know and adopt the network tools available to the community</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Understand management operations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Understand maintenance operations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Know how to moderate a community</td>
</tr>
</tbody>
</table>
Methodology adopted

The monitoring and evaluation process was based on a series of checks made both by the online tutors and by researchers from the Institute for Educational Technology of the Italian National Research Council, the project’s scientific partner.

As far as the first two objectives were concerned (evaluation of learning and participation), a method already tested in other online courses was adopted (Benigno & Trentin 2000), focused on analysis of what the participants produced (essays, reports, exercises, messages) and on their level of involvement in group interaction.

In particular, having used a teaching strategy that mainly involved exercises, the evaluation of learning took into account the level of correctness of what participants produced in relation to the tasks assigned to them.

The evaluation of participation in online activities was based, instead, on both objective and subjective analysis of what happened in the virtual learning groups. Objective analysis made use of the tutors’ reports regarding the tasks assigned to the participants, distinguishing between exercises done and not done. The subjective analysis took into consideration the messages produced within the virtual groups, cross-referencing the quantity (number of messages produced) and the type (whether they were messages of socialisation, requests for help, etc.).

Survey tools

Three tools were used for the analysis described in the previous point:
- a grid for the results of the exercises associated with each teaching unit (exercises done/not done; correct/incorrect solution);
- a grid for the classification of the messages produced by the individual participants, distinguishing between those regarding the task to be completed, requests for clarification, suggestions to colleagues on the course, socialisation with other participants, etc.;
- an incidence table (Mackenzie 1996) for analysis of the relations in order to define the degree of centrality of communication within the virtual groups.

Analysis of the participants’ attitude and their level of satisfaction with the online methodology adopted was instead conducted on the basis of a satisfaction questionnaire at the end of the course, of direct observation of group interaction and even more on the personal messages between the tutor and individual participant, the channel preferred by participants (especially in the first part of online activity), to communicate unease, uncertainty and worries.

Analysis of the data collected and outcomes of e-learning activities

What follows is a summary of the experimentation interpreted through the information gathered during online monitoring. This synthesis is structured according to the three main aspects on which evaluation of the experience was focused.

Levels of achievement of training goals

As illustrated in the chart in Fig. 1, a fair number of participants completed correctly the exercises included in Table 2.

<table>
<thead>
<tr>
<th>Teaching unit</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UD.1.1</strong></td>
<td>Course presentation</td>
</tr>
<tr>
<td><strong>UD.1.2</strong></td>
<td>Visit to the virtual classroom</td>
</tr>
<tr>
<td><strong>UD.1.3</strong></td>
<td>Socialisation of the virtual group</td>
</tr>
<tr>
<td><strong>UD.1.4</strong></td>
<td>Organisation to launch the course well</td>
</tr>
<tr>
<td><strong>UD.2.1</strong></td>
<td>Types of search engine</td>
</tr>
<tr>
<td><strong>UD.2.2</strong></td>
<td>Correct syntax for research online</td>
</tr>
<tr>
<td><strong>UD.2.3</strong></td>
<td>Help online</td>
</tr>
<tr>
<td><strong>UD.2.4</strong></td>
<td>Altavista</td>
</tr>
<tr>
<td><strong>UD.2.5</strong></td>
<td>Google</td>
</tr>
<tr>
<td><strong>UD.2.6</strong></td>
<td>Hot Bot</td>
</tr>
<tr>
<td><strong>UD.2.7</strong></td>
<td>Altavista Education</td>
</tr>
<tr>
<td><strong>UD.2.8</strong></td>
<td>Basic concepts of MEGA TAGs</td>
</tr>
<tr>
<td><strong>UD.2.9</strong></td>
<td>Meta-search engines</td>
</tr>
<tr>
<td><strong>UD.2.10</strong></td>
<td>Web and research in newsgroups</td>
</tr>
<tr>
<td><strong>UD.3.1</strong></td>
<td>Subscribing to a Web community</td>
</tr>
<tr>
<td><strong>UD.3.2</strong></td>
<td>Socialising in a Web community</td>
</tr>
<tr>
<td><strong>UD.3.3</strong></td>
<td>Community tools</td>
</tr>
<tr>
<td><strong>UD.3.4</strong></td>
<td>Search for a Web community</td>
</tr>
<tr>
<td><strong>UD.3.5</strong></td>
<td>Create a community</td>
</tr>
<tr>
<td><strong>UD.3.6</strong></td>
<td>Codes of behaviour (netiquette)</td>
</tr>
<tr>
<td><strong>UD.3.7</strong></td>
<td>Personalisation of the community virtual space</td>
</tr>
<tr>
<td><strong>UD.3.8</strong></td>
<td>Moderating the community</td>
</tr>
<tr>
<td><strong>UD.3.9</strong></td>
<td>Management operations</td>
</tr>
<tr>
<td><strong>UD.3.10</strong></td>
<td>Maintenance operations</td>
</tr>
</tbody>
</table>
in the course. In particular, about 26% of the participants completed all the exercises correctly, 32% completed three-quarters correctly, and so on.

From the point of view of the difficulty of the exercises, about 60% of the participants were in the medium-high band (which also included exercises of a certain complexity), while about 70% correctly completed the exercises considered essential to certification of having achieved the training goals of the online course.

Again in Fig. 1 one can note a number of drop-outs (18% of participants), whose causes were almost all due to ill health or malfunctioning of computer hw/sw.

The checks show, therefore, that the acquisition of the contents tackled in e-learning activities was more than satisfactory. However, caution is needed, given the particular conditions in which the experiment was conducted. For example:

- although varied (different entry-level skills, different cultural backgrounds of the participants, etc.), the sample involved was numerically low;
- the content, of a technological nature, lends itself well to training in e-learning courses; it cannot be taken for granted that similar results would be obtained with the same group when tackling other subjects;
- training which had enabled them to acquire the basic notions on the use of network tools and services later used for online interaction beyond the course;
- people were recruited on the basis of pre-screening, made by their classroom teachers, whose key element was a good level of autonomy in computer use.

### Level of participation and involvement

Analysis of messages shows fairly high levels of participation in network activities (completion of the tasks assigned by the tutors and group interaction), even if with rather different dynamics in the two virtual classrooms.

The messages sent in the e-groups were essentially of two types: interaction messages concerning the task (sending the result of the exercises, requests for clarification, suggestions, etc.) and social interaction messages.

To analyse in greater detail the dynamics of interaction that developed within each learning group, two separate incidence tables were compiled.

An incidence table is a grid with sender/receiver (S/R) double entry (Mackenzie 1996). This is used to record interactions among participants in a discussion group (Table 3).

Supposing that there are \( n \) attendees, the table will measure \( n \) by \( n \), and each cell will represent the number of times that each participant has interacted with another group member. The sub-totals of each column represent the number of message emissions, and the sub-totals of each row the number of receptions. The table’s overall total represents the number...
of communications \(^1\) that have taken place within the group.

Applying two different algorithms to the incidence table yields two different values: the centrality and participation indexes. Roughly speaking, the former measures the extent to which communication centres around one or more participants, while the latter gauges the extent of communication distribution within the group.

In our case, the incidence table records only the messages in which there was explicit reference to one (or more) specific course participants (mentioning the name, for example, or quoting part of someone else’s message, etc.).

Starting from the data given in the table, it was possible to build up a series of graphic projections that helped to understand to what degree communication was centred on a few individuals or was distributed more or less equally within the single groups.

Let us consider the graphs given in Figs 2 and 3. The X-axis indicates the nicknames \(^2\) of the participants as senders, the Y-axis shows the same people as recipients, and the Z-axis gives the number of communications.

Looking at the graph in Fig. 2, one can see how communication in group 1 was centred around four people, while the other course participants sent or received only sporadic interpersonal messages. On the whole, however, communication was reasonably distributed throughout the entire group, also aided by the spontaneous triggering of self-help dynamics when exercises were being completed.

Vice versa, it can be seen from the graph in Fig. 3 that, except in a single isolated case, there was no significant interaction in the second group: participants limited themselves to a few socialisation messages sent indifferently to the whole group, preferring instead one-to-one communication with their own tutor, linked mainly to completing the task in hand. As has been said, neither of these types of message were taken into consideration during the compilation of the incidence table, and this is why the graph appears so ‘bare’.

The figures therefore highlight considerable diversity in the communication dynamics activated within the two groups: more ‘horizontal’ in the first (networked communication among participants) and more ‘vertical’ in the second (communication between tutor and individual participant).

It is important to remark that the two groups started out from almost identical initial conditions, were formed using the same criteria, and their respective members had previously participated in face-to-face similar preparatory activities (even if in different classrooms).

What influenced such marked diversity in attitudes to group interactions?

The teaching strategy adopted certainly played a part. A strategy based on exercises tends, in fact, to

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\(^1\) The total number of communications does not necessarily correspond to the total number of messages exchanged in the computer conference, given that a message may contain information addressed to more than one receiver.

\(^2\) The nicknames used by the participants within the virtual community.

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Table 3. Incidence table used for calculating the centrality index

<table>
<thead>
<tr>
<th>S1</th>
<th>S2</th>
<th>…</th>
<th>Sn</th>
<th>Total R</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>R2</td>
<td>2</td>
<td>4</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>…</td>
<td>…</td>
<td>…</td>
<td>…</td>
<td>12</td>
</tr>
<tr>
<td>Rn</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Total S</td>
<td>15</td>
<td>8</td>
<td>4</td>
<td>11</td>
</tr>
</tbody>
</table>

Fig. 2 Cross-interactions in group 1.
give priority to one-to-one communication between the tutor (who assigns the tasks) and the single course participant (who must complete them), only occasionally leaving room to many-to-many horizontal communication dynamics based, for example, on self-help. Despite this, group 1 made considerable use of this second type of interaction. However much the two groups started out from almost identical initial conditions, other factors effectively influenced their behaviour. Let us list the main ones:

- the group members’ greater or lesser propensity for online socialisation;
- the presence/absence of pro-active members capable of rousing and involving the other participants;
- the ability of the online tutors to facilitate socialisation and collaborative interaction within the learning groups.

In the specific case of group 1, the presence of at least three pro-active members who encouraged the rapid socialisation of the group was decisive, often acting as points of reference and support in helping colleagues in difficulty.

In group 2, instead, there were no members with similar characteristics and, despite the great commitment of the tutor in stimulating collaboration, interaction was limited to vertical communication between the tutor and the individual participant.

### Social interaction and level of satisfaction

From the point of view of social interaction, the attitude of the participants changed substantially as the network activities gradually developed.

In the initial stages, for example, almost all showed a feeling of disorientation and in some cases suspicion of communication via computer. The difficulties in socialisation were attributed by the participants to relating to people that they did not know and could not see physically. As has been said, all participants in the distance activities came from one of the 42 different local classes in the I3E project and had not therefore had the chance to get to know in person the other members of their own virtual group.

About two-thirds of the way through the e-learning course, however, the attitude of most participants changed radically. As a demonstration of this and of the sense of kinship that developed in the various virtual groups, it is interesting to note that on various occasions the participants in difficulty, instead of asking the tutor for explanations (as they usually did at the beginning of the e-learning process), turned spontaneously to their own group (or to some members in particular), sparking an effective self-help dynamics. This happened in particular with group 1, and the graph in Fig. 2 shows the liveliness of these cross-group relationships well.

A final note concerns the general attitude towards the teaching method used for online activities. The end-of-course satisfaction questionnaire shows that 78% of the participants stated that they were highly satisfied, 14% expressed average-high satisfaction and 8% average-low. This decidedly positive judgement was accompanied in many cases by the desire to be able to follow a further distance training course to extend and deepen an understanding of other issues linked to the use of ICT.

### Analysis of follow-up

About 6 months after the end of the course, a survey was conducted to understand the type of use that participants were making of the knowledge acquired during e-learning.
The survey questionnaire used was divided into four main sections:
- frequency of Internet use;
- type of Web use;
- type of interpersonal communication used;
- personal impressions of the type of effects of taking part in online training.

The questionnaire was sent via e-mail also with the intention of checking directly the effective use of Internet by those interviewed, as well as to test their response times.

In all, 76% of the participants in the I3E-learning project who had successfully completed online activity (26 out of 34) answered the questionnaire; Table 4 gives the results of the survey.

Qualitative analysis of the answers shows that the Web is used mainly for access to sites of
- news (online newspapers and newsletters),
- local authorities (town councils, regions, etc.),
- government bodies (ministries),
- associations (sports, voluntary groups, cultural, etc.),
- financial nature (stock exchange, finance, contacts with their own bank),
- concerning health and/or specifically targeted for the third age,
- tourism agencies, and
- libraries and museums (real and virtual).

Two of the former participants also declared that they had set up their own website.

As far as interpersonal communication is concerned, the chief use of e-mail was to:
- correspond with friends and relatives (especially children far away) resident both in Italy and abroad;
- maintain contact with alumni of the I3E course (whether participants or not in I3E-learning).

Table 4. Quantitative data from the follow-up questionnaire (out of 26 respondents)

<table>
<thead>
<tr>
<th>Frequency of Internet use</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connects more than once a day</td>
<td></td>
</tr>
<tr>
<td>Connects at least once a day</td>
<td>8</td>
</tr>
<tr>
<td>Connects at least every 2 or 3 days</td>
<td>3</td>
</tr>
<tr>
<td>Type of Web use</td>
<td></td>
</tr>
<tr>
<td>Regular browsing of the net</td>
<td>22</td>
</tr>
<tr>
<td>Has created a personal website</td>
<td>2</td>
</tr>
<tr>
<td>Type of interpersonal communication used</td>
<td></td>
</tr>
<tr>
<td>Uses e-mail regularly</td>
<td>26</td>
</tr>
<tr>
<td>Uses e-groups regularly</td>
<td>9</td>
</tr>
<tr>
<td>Uses chat rooms regularly</td>
<td>3</td>
</tr>
</tbody>
</table>

About one-third of those interviewed also declared a regular use of e-group services for:
- managing communities whose members are mainly former course companions (including those who did not take part in distance activities), based on free e-group services studied during online training;
- subscribing to newsgroups on various themes.

Notes and observations

Reading the outcome of the monitoring of the online training experience for older people, it seems that the results are truly excellent, both from the point of view of the skills and knowledge acquired and of the effects on the everyday life of the people involved. However, caution is needed, given the particular conditions under which the experiment was conducted.

Nevertheless, some useful considerations can be drawn from what emerged during the experiment to lead new lines of research which, combined with those already developed in the general context of elderly education, can act as a complement to them in the introduction of e-learning techniques. For example:
- Older people have a great deal of time available, and so the fact of being able to interact asynchronously at a distance allows them to render their participation in e-learning activities flexible, i.e. giving them the chance to devote the time they want to the training activities proposed and to differentiate in-depth study of course content (Stayer et al. 1987).
- Compared to younger people, the elderly, especially in the initial stages of a technology-supported course, show a greater need for direct personal interaction for a variety of reasons, which range from practical ones (unfamiliarity and uncertainty with technology tools) to emotional and social ones (a training course is an excellent occasion to pass their time relaxing in the company of other people). It is thus felt that it is not feasible to propose purely e-learning training approaches, as they might be marketed via Internet by an e-content provider; a blended solution would seem more appropriate, in which periods of e-learning (individual or group) alternate with onsite activities.
- In e-learning courses, the response times (above all sensorial), motivations and needs of older people
differ from those of younger participants, and for this reason many methods need to be rethought both in the design of materials for e-learning and in running online activities, especially group ones (Cherry et al. 1993; Withnall & Percy 1994). For example, there are differences compared to younger people in the speed of moving the mouse, typing messages in the framework of synchronous and asynchronous interactions, browsing through screens, as well as a different ability to maintain concentration on individual segments of the training course. This is evidently reflected on the organisation of the teaching material, on the choice of the graphics and metaphors to use, etc. When online collaborative learning strategies are envisaged, the time needed for interaction in forums or chat rooms, the forms of composition of network learning groups, etc. should certainly be reviewed compared to what happens with younger groups.

- Closely linked to the previous point, there is thus the need of specific training both for designers of e-learning for the third age, and for the online tutors who are asked to organise online learning communities for the over-60s (Knowles 1984; Gorham 1985; Gibbons & Wentworth 2001). This means that the training course for these professional figures must be based on a close matching of andragogy/geragogy and e-learning design methodologies or, in the case of the tutors, on the management of network learning groups composed of elderly people. For the time being, this match has been only partly explored, and in any case certainly less closely studied and perfected than in e-learning contexts for other age users.

### Conclusions

For elderly people, the acquisition of abilities in adequate and targeted use of ICT is not only an opportunity for personal development and growth, but also offers the possibility of conceiving a range of network-based services of great social significance, such as facilitated access to information and help desks, assistance and aid, reduction in the risk of isolation, and the possibility of making one’s own professional, hobby and life experiences available to others.

In this sense, ICT, and Internet in particular, can be proposed to the elderly as:
- a tool for remote access to a multitude of services;
- a social space in which to organise and/or participate in virtual communities;
- an environment for e-learning activities and, more in general, life-long learning.

In order for the elderly to be able to enjoy these possibilities, it is necessary, however, to spread a culture of the use of ICT through basic literacy and then more in-depth courses.

The hypothesis discussed in this paper is that while in the first case a face-to-face interaction is necessary, in the second it could be useful to envisage online courses, i.e. using ICT both as the content of training and as educational media.

In the context of the training of older people, the second approach has so far been virtually unexplored (at least in Italy), and it was for this reason that a pilot e-learning project was experimented in the framework of the regional I3E program. The specific objectives of the activity were therefore to verify the effective possibility of proposing short, in-depth online modules on the use of Internet to elderly users; to survey the attitudes/reactions of the users themselves towards e-learning; and to analyse the follow-up of the distance training activity.

While maintaining the necessary caution due to the limited sample involved in the experience, the results obtained were decidedly positive.

From the educational point of view, it can be concluded that it is possible to:
- propose successfully online learning activities to an elderly population, above all if the activities involve exercises and are assisted by online tutors;
- organise networked learning groups and that these will follow evolutionary dynamics similar to those observable in groups with younger members.

The reactions of the participants to the teaching method adopted were also positive, despite an initial sense of disorientation and in some cases wariness about communication via Internet, attributed by the course participants themselves to the difficulties in relating to people they did not know physically.

Finally, from a analysis of the follow-up to the e-learning activity conducted about 6 months after the end of the course, it emerged that most participants had continued to use Internet both for access to information and communication services, and to increase their own knowledge of the use of ICT itself.

The approach adopted (the use of Internet both as
content and as the teaching medium) would therefore seem to have encouraged continuity between the period of training and habitual/everyday use of what had been learnt. For older users, this thus confirms what had already been found in the application of the method for other age groups (Benigno & Trentin 2000).

To conclude this paper on a light note, it seems important to quote a comment made by one I3E-learning participant in the follow-up questionnaire.

According to my husband, the computer has become my lover since I took part in the I3E-learning! If I want to relax, I turn it on and, with games, or chatting to friends, or browsing the Web I find a huge range of interests in the outside world. I am now learning Excel, often asking friends for advice and help via e-mail. As there is so much to learn, if the Liguria Region runs a new online course, as I hope, I will take part with many of my colleagues with great pleasure.

It is interesting to note that she was not the only person who sent us messages of this kind!

References