Technology Enhanced Learning in Continuing Medical Education

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INTRODUCTION

The traditional training programs will be increasingly intended as the early stages of a learning process designed to last over time under the direct responsibility of the individual.

This is true particularly in cases where professional knowledge is prone to rapid obsolescence. Such is the case of the medical profession where, besides an initial university education and professional development based on direct experience, there is the need for a process of continuous education on scientific research results and best professional practice carried out by colleagues (Manning & DeBakey, 2001; Wyatt, 2000).

It is precisely due to this requirement that many educational institutions and agencies in Italy have set up specific continuing medical education (CME) programs.

In particular, given the steady diffusion in the use of information and communication technologies (ICT), also in the context of the health care system (Curran, Hoekman, Gulliver, Landells, & Hatcher, 2000), special attention is currently being paid to the use of technology enhanced learning (TEL) approaches as a further means of providing educational activities within the CME (Letterie, 2003; Slotte, Wangel, & Lonka, 2001; Wutoh, Boren, & Balas, 2004). TEL is referred to the use of ICT to maximize learning within an environment of sound course design that can offer students the options of time, place, and pace and emphasizes different learning styles (TEL Committee, 2004).

The Italian situation is moving in this very direction on the grounds of both national *ad hoc* experimentations and local initiatives of individual Local Health Units (LHUs) (*).

In order to provide an actual overall picture of how much the educational models centred on the use of ICT are currently utilized in CME, between 2005 and 2006 the Institute for Educational Technology (ITD) of the Italian National Research Council carried out specific research whose results will be illustrated and discussed here in this paper.

RESEARCH BACKGROUND

In January 2002 the national project of CME was set up in Italy. Extended to all professionals in the health care sector (not only doctors then), the project is inspired by the principle of training intended as a duty-right of every professional to enhance their knowledge, skills and competencies, and tailoring them to technological and scientific progress. Therefore, the value of training, bound by ethical codes, becomes a prerequisite to maintain professional practice.

The practical consequence of CME being mandatory and extending to all professional categories is that every health care worker must accrue at least 30 CME credits per year.

The credit is recognised as both the quality of the training activity and the time dedicated to it on the grounds of the specific professionalism. By way of example, for each doctor, one training day entirely given over to CME—according to the highest quality standards recognised by the CME National Commission—corresponds to about 8-10 credits. This implies that, to reach the required 30 credits, each medical doctor must commit the equivalent of about four working days per year.

From an organizational and operational perspective, for the LHUs, it would therefore be desirable that, besides the time spent for the "live" training activity, as little time as possible should be added for "logistics" relating to participation. Hence the training activity should:

- Be primarily based on training offers accessible on the premises, thereby minimising as much as possible any travelling from the workplace;

- Be planned so as not to take up an entire working day but divided into training segments (or modules) each lasting one or two hours.

For this reason, since 2002 the national programme of CME has included, on experimental basis, Distance Education (DE) among the various ways of providing health care workers with training courses. Almost from the outset, interest has been oriented towards DE based on the educational use of ICT (Ruiz, Mintzer, & Leipzig, 2006).

RESEARCH AIMS

The aims of the research has been to draw up a picture in Italy on the ways of using TEL in accredited educational activities for CME, highlighting both the main approaches adopted and the critical issues related to their introduction.

In other words, it was agreed to proceed with not so much a quantitative survey on the use of TEL in CME, as rather a qualitative analysis on the ways it is proposed and managed and on the outcomes of its introduction within the LHUs which have already gained experience in the educational use of ICT.

However, research has not been limited to analyzing the use of TEL in the "formal" context of CME, that is, those related to accreditation, but has also spread to the use of ICT in "informal" learning processes. Health care is regarded as particularly suitable for the adoption of both educational approaches (Trentin, 2005).

"Formal" training refers to approaches based on a precise training programme, with a start and an end, a direction managed by the training provider and a scaffolding for the trainees made up of tutors, teaching materials, the presence of experts/specialists, and so forth. All this is independent of the use of learning strategies, whether individual, assisted, collaborative or blended.

"Informal" learning refers instead to those processes that see the individuals meet their cognitive/professional needs independently (Coiera & Dowton, 2000), even via "networked" interaction within professional communities of practice aimed at enhancing the sharing of knowledge and best practices.

From an initial reconnaissance carried out in the wake of research work and based primarily on what was presented at national conferences, since 2002 there has been an increasing diffusion of TEL approaches (above all "formal") within health care training. However its diffusion is scattered like leopard spots which is typical though during the initial stages of any innovation process.

METHODOLOGY

Having defined the specific research objectives and the corresponding indicators for the data collections, a sample was then defined, that is, those LHUs were identified which had already acquired experience using TEL methods in CME.

Subsequently an online questionnaire was administered, developed according to the above-mentioned indicators and divided into four sections relating respectively:

1. To the general approaches followed by the LHUs in proposing and using TEL;
2. To the opinions of staff interviewed about TEL;
3. To the characteristics of TEL courses already realised or planned;
4. To the "informal" learning processes based on the sharing of knowledge and good practices within the different professional communities.

However, before administrating the questionnaire, steps were taken for its validation and so it was piloted by a subset (about 10%) of the entire sample identified (84 LHUs).

Having made the necessary modifications suggested during the validation stage, the questionnaire was then e-mailed to those responsible for training in the LHU sample. Two weeks later, the ITD personnel contacted (by phone) those who received the questionnaire to offer support in compiling it. At the end of this stage, 61 of the 84 LHUs sample had answered and given their own data and information.

RESULTS

From the survey it emerged that the overall judgement of the LHUs on the use of TEL in CME is fairly positive. Nevertheless, as those responsible for training point out, there is a general feeling that more time is