

MHeL

Millennium Hospital / E-Learning

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Report***

Recommendations for Italian and European authorities for the alignment of national and international credits.

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Executive Summary

The beneficiaries of the MHeL Consortium consider it strategically important to provide institutional bodies, who are guarantors of the proper delivery of medical and scientific training courses in Italy and Europe, with a summary of the results of the experimentation performed. This summary includes guidelines that can help them successfully implement the training methods based on the input of MHeL technology and methodology.

This choice is motivated by the willingness to consider the results achieved through the MHeL project as a common asset, facilitating synergistic relationships between providers and institutions. These relationships are aimed at improving the courses offered in the healthcare sector, including those provided using innovative methodologies.

This document includes recommendations for institutional bodies. Recommendations based on the analyses carried out during the project, and summarized in the results. These enable the provision of the appropriate recommendations that can improve the system of continuing medical education, aiming to provide an alignment between the Italian system and the European one.

A relevant experience in this regard, which is the key asset of the training system, is the level of learning directly acquired from the operators of the consortium that created the courses with the MHeL model, enabling themselves to push their limits and increase their potential.

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1 Recommendations to the Ministry of Health for the alignment of the Italian CME system with the competency-based CME system, and communication of the outcomes of the project to UEMS in view of the adoption of a shared community framework for continuing medical education.

The MHeL project, aside from contributing to the creation of a system and a dialogue between institutions, has enabled the consolidation of an operational and technical expertise that can provide a valuable resource for all players involved in the innovation of medical training. This is especially true for the institutional bodies governing the system of continuing education in Europe, and more specifically, in Italy.

1.1 Introduction

The analysis of the 1st and 2nd Trasfer pilots fully described in R9 and R14, confirm the assumption that the blending of “game based learning” combined with “reflective e-learning” results in a sustainable solution that can be effectively used in all fields of medical sector. This was also confirmed by receiving both accreditations per ECM and CME credits. Finally we conclude that the MHeL solutions can be utilized as an adaptable one-stop learning solution for any sector where large groups of learners can benefit from the knowledge and experience of experts in their field of working.

1.2 Major problematic issues in the use of CME requirements

The Millennium Hospital e-Learning project has demonstrated that it possesses the characteristics necessary to become a useful tool in the provision of distance learning (DL) training that is in accordance with the requirements of Italian and European law.

The platform was in fact implemented as required by Italian law (State-Regions Agreement of April 19, 2012) and European law (The Accreditation of e-Learning Materials by the EACCME - UEMS 2011/20), allowing for the management of (a) registration and identification of the user, (b) training course progress tracking, (c) the completion of the assessment and evaluation questionnaires, (d) the download of the certification of completion for the release of CME credits, and (e) the extrapolation of data to be sent to the authorities responsible for the final approval of the credits.

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1.2.1. Tracking participant progress

The project thus enables, above all, the fulfillment of the obligations required by law to "*track*" the path of the learner, and as a result, enables the provider to allocate credits to those participants who attended the entire training program.

Generic e-learning platforms are available on the market that are adaptable for every type of training. However, these usually require significant customization to be used for medical/scientific field, and in order to comply with CME regulations. The MHeL platform was instead created and designed to comply with the logic and strategies that inspired the Italian and European training systems, in compliance with all standards required by Italian and European CME regulations.

The experimental phase has enabled us to successfully test the ability of the MHeL platform to support the provider in complying with the steps required by law, specifically:

- registration of the participant and his/her personal and professional information;
- tracking the effective participation of the user in the training program, and the acquisition of teaching materials;
- passing the learning assessment, including evidence of having surpassed the minimum threshold for the number of correct answers;
- completing the training evaluation form, which also provides for the widening of fields aimed at supporting the need index analysis;

Furthermore, the method of data exportation enables the maintenance of objective evidence in the document archives in the case of checks, audits or other requests, such as the re-forwarding of credit allocation for a user who lost the original documentation.

1.2.2. The interactive model

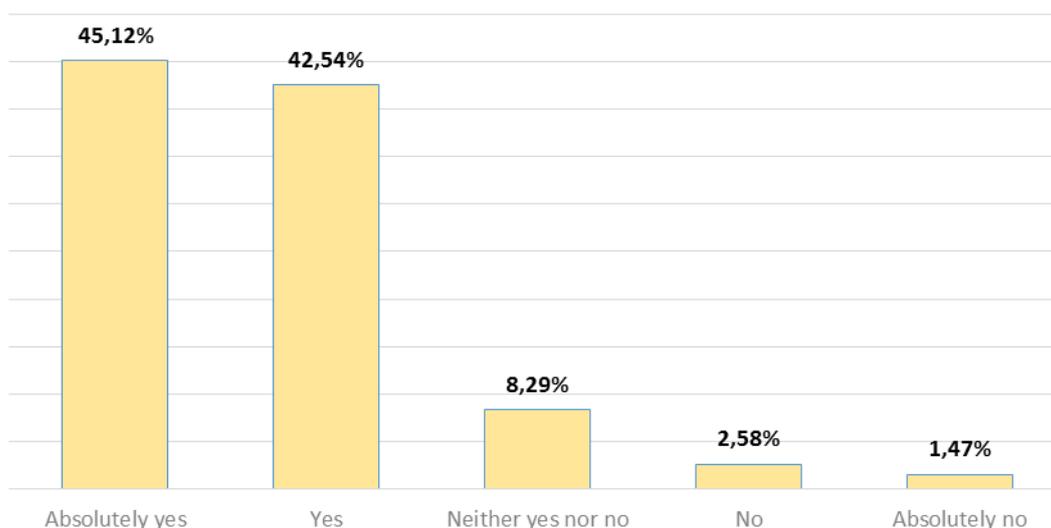
The interactive nature of the training program is another quality aspect of the model that can be transferred to future training programs both in Italy and in Europe. The simulation clearly demonstrated the ability of this valuable aspect to enrich the distance learning (DL) method, which in the past was often seen as a "*neutral*" method that did not allow for the active involvement of the learner.

Historically, this limit represents one of the motives for which the spread of DL programs was not facilitated within the Italian and European CME training programs.

The interactivity of the MHeL project was greatly appreciated by students and opinion leaders in the customer satisfaction questionnaire, as objectively demonstrated in the data

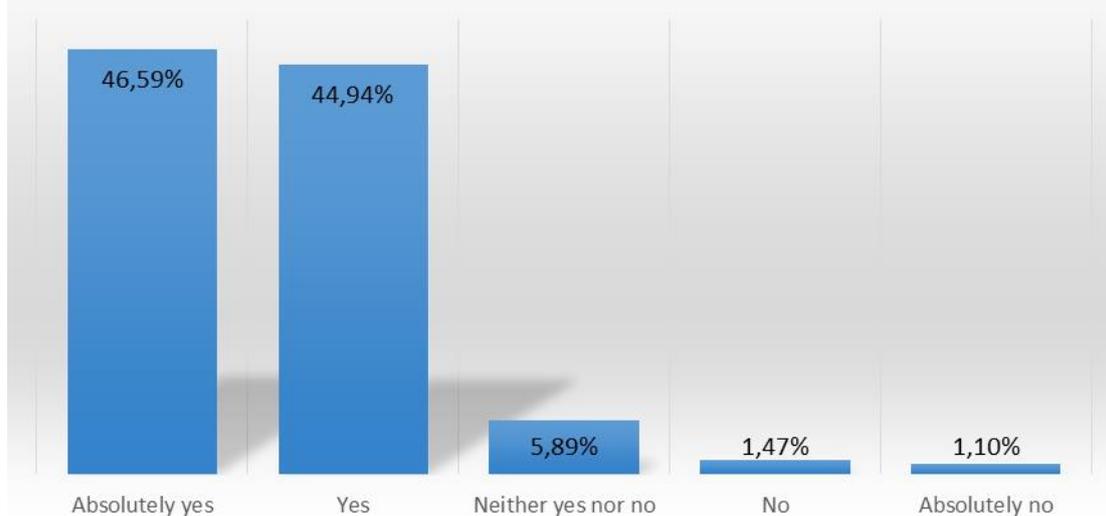
analysis of responses to question 16 - *"Does the gamification functionality offer greater benefits in comparison with traditional training solutions?"*: 476 users (87.66%) believed that the gamification mechanism offered greater benefits in comparison with traditional training solutions. 45 users (29.8%) were neutral in their response, and 22 (4.5%) preferred the traditional training solutions.

Does the gamification mechanism assure benefits, comparing to the traditional training solutions?



Another very important aspect that emerged from the experimentation model is given by the effectiveness of the proposed training method, as directly reported by participants in the answers to question No. 17, *"Do you think your competences have improved as a result of the virtual training solution?"* 497 users (91.53%) improved their skills as a result of the virtual training solution.

Do you think your competencies improved thanks to this virtual training solution?



1.2.3. Flexibility of the MHeL model

The experimentation analysis specifically showed how the MHeL platform is able to model the degree of interactivity according to the learning objectives and duration defined by the scientific manager.

The presence of various, specific virtual environments ("*teaching materials section*," "*video/slide section*," "*awards/reflection and test/mini games section*," "*library/bibliography section*") offers the user a wide range of training opportunities, thus making the platform a highly flexible instrument that can be used for different types of CME training events within the healthcare sector.

This aspect can be used by the CME provider to create individual, single-topic courses with a limited duration, rather than creating long-lasting, modular master courses.

Some providers are, in fact, tailoring their training courses to single-topic events aimed at examining a specific disease. This analysis often originates from needs that are directly expressed by national or European healthcare policies, which require the creation of a restricted, specialized event.

Other providers, however, offer longer and more articulated training programs. These training programs consist of sequential modules based on progress, starting from basic concepts to those that are more advanced and specialized. In this case, the platform makes it possible to structure the programs using shared evolutionary methods, by retaining the "*teacher/student*" relationship, and providing for the creation of "*training schools*" among learners who share common programs.

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This last aspect is strongly connected to the "*continuing*" component of the "*Continuing Medical Education*" concept, which maintains that health professionals have the ethical obligation to keep themselves up to date in their field of practice for the entirety of their "*professional life*."

1.2.4. The training needs model and analysis

Another element of the MHeL project that will definitely pique the interests of the Italian and European institutions is its ability to conduct effective analyses of educational needs based on the real needs of the health professions, so that the training will effectively contribute to the improvement of local and international health services. This is made possible by the interactive functionality of the platform itself ("learn by doing") that integrates technology solutions with methodological standards, which are adapted to educational content that is structured by set of competences and learning outcomes.

The training needs analysis "*diagnoses*" the real needs that require continuing education for healthcare professionals, and is conducted using effective social research tools.

The Millennium platform offers the learner the possibility of directly indicating the topics on which he/she wishes to focus his/her training, both by directly expressing his/her training needs first-hand, as well as by having the learner choose which, among a panel of training proposals, he/she believes to be the one most suitable to his/her needs.

The training interactivity and "*friendly*" environment of the program allows for monitoring the level of learning, and increases the desire of the learner to express the individual areas that he/she needs work on. This enables the provider to create training courses that are suited to the real needs of healthcare workers.

For this reason, the presence of an active tutoring service for participants allows for positive interaction, and complements more traditional methods, such as the needs analysis questionnaire.

1.2.5. The virtual community within the MHeL model

Another important element of the MHeL model is the ability to create "virtual" communities of learners that can stay in touch even after finishing their training programs. This is of particular importance considering the vast "audience" of students that reside within the European territory.

In the residential course, the "*provider-student-teacher*" interaction generally ends at the end of the training day, since no recall spaces are planned for participants. The MHeL platform

instead allows a learner to remain active in the community even at the end of the training, and continue to interact with the tutor, re-analyze the material on the platform, and further explore parts of the course they are interested in.

Virtual communities can be activated using platform communication tools (either synchronous or asynchronous), enabling online discussion and interaction. These communities promote sharing and the cooperative build-up of knowledge within a collaborative medical learning environment.

Collaborative learning is facilitated by the fact that the evolution of technology allows individuals to communicate with colleagues and experts. The virtual community functionality further reinforces this concept by enabling people to share knowledge sources that can be consistently used to solve professional issues in both Italy and Europe.

1.3 Alignment of training systems with CME quality standards

The system of continuing medical education in Italy must comply with the standards of continuing education mandated at the European level. The MHeL project has created methods that will be useful in aligning the European training systems, garnering European recognition of competences and national credits, creating training mobility for healthcare personnel and sharing medical knowledge through the use of multimedia technology and the e-learning platforms.

In order to align training management methods, it is advisable that in the future, institutions implement training programs that are shared and aligned in order to facilitate the movement and operation of health care professionals within common contexts, enabling the comparison of their professional experiences with those of their colleagues from other European nations.

1.3.1 The research of training results

Considering the substantial investments within Italy to manage a complete continuing education program for healthcare professionals, it is evident that there is considerable difficulty in assessing the actual impact of these programs on patient health.

The assessment of CME efficiency in terms of the appropriateness of diagnosis and therapy represents a typical problem in Italy. The Italian scenario is not always oriented towards active research and sharing of knowledge, based on outputs, but on a mere reading of content, based therefore on inputs.

This has the inherent limit of considering the acquisition of credits in a predominantly quantitative manner in regards to time dedicated to CME, with the risk of neglecting the quality of the continuing education itself.

Based on participant feedback from both gynecologists and other practitioners on the MHeL project, it was evident that the participants were able to fully engage in the training and satisfy their educational needs through a process of actively seeking knowledge rather than simply reading content. This was especially enabled by the use of reflection activities and simulation of clinical experiences through mini games ("experimental learning").

In this context, the MHeL project has proven to be a remote training program that is both interactive and stimulating, enabling a more "immersive" method of learning, and offering the possibility to create virtual communities that interact in both training and organizational aspects. This training experience can thus be shared by the entire group of health care professionals.

1.3.2 Alignment of training methods and courses

A fundamental element for the alignment of training systems throughout Europe consists of defining common strategies for individual training courses for healthcare professionals. These should be oriented towards objectives that the European Community considers a priority, including:

- Technical and professional objectives, aimed at acquiring expertise within a specific health profession, both for private practices and within public healthcare facilities, in accordance with the guidelines established by governing scientific societies, thus leading to technological and scientific advances.
- Process objectives, aimed at acquiring interpersonal and communication skills with patients, team members (colleagues and management), outside parties (institutions), the general public and working groups.
- System objectives, aimed at acquiring concepts regarding the work environment, the code of ethics, the knowledge of general rules and organization in terms of patient safety, appropriateness and quality of services and care, and rational allocation of resources).

The establishment of community goals might push some national providers to plan a beyond-borders training program that is not oriented only to a single country, but potentially open to professionals in the national and international scientific community.

Together with a "standardization" of training objectives, it appears equally useful to research aligned formats of the three main macro-types of training activities:

- residential training (RES),
- distance learning (DL)
- field studies (FS)

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The importance of using the "blended" format should also not be overlooked. Through the use of DL sessions, this format allows for the asynchronous management of technical insights and practical exercises with respect to the topics discussed in course lectures, which are typical of the residential model. The virtual spaces of the platform are well suited for implementation of concepts learned in theory, also developing opportunities for discussion and "teacher/student" debate, which the synchronous model of the residential course does not always allow. Additionally, this greatly reduces the costs associated with the training.

1.3.3 Recommendations for the improvement of CME training systems

The MHeL project highlights the fondness of participants for interactive training courses, whether they are delivered through residential training methods or remotely. This element should be taken into consideration by institutions for future emissions of regulatory provisions governing CME.

In recent years, the interactivity aspect of residential courses has been "rewarded" in the phase of training credit attribution by the National CME Commission, which provides a 50% "bonus" in terms of credits assigned for courses that fall into the category of "interactive residential training," i.e., events *"in which participants play an active role, and the level of interaction between them and their instructors is large. This usually takes place through group work, exercises, role-playing, simulations, etc. It is carried out in the appropriate educational location, possibly equipped for that purpose. Forms of remote transmission may also be used provided they properly facilitate teacher/student interaction. In order to guarantee adequate participation, it is important that the number of learners be limited (a maximum of 25 participants for teacher/student interaction)"* (see document *"Criteria for the allocation of CME credits approved by the National Commission for Continuing Education, January 13, 2010"*).

Likewise, the same reward mechanism should be applied to DL courses, granting value to programs that provide an active role for learners, as in the case of the MHeL project, compared to more traditional forms of e-learning courses in which the participant is limited to learn concepts in a passive way.

This reward system should bring benefits both to the participant, who would be encouraged to include DL courses with a high degree of interactivity into his/her personal training program, and to the provider, who would be duly repaid (also economically) for the effort and commitment that the planning of an interactive DL course undoubtedly requires with respect to more traditional forms.

Another aspect for consideration concerns the fact that to date, there are no technical documents issued by Italian or European institutions that define the characteristics of the

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different types of DL programs, where, for example, the method involving the reading of paper documents is significantly different than the method that provides for the use of "game-based" multimedia platforms.

In this regard, it would be desirable to provide for the publication of guidelines that present providers with possible methods of distance learning, while also indicating the distinctive characteristics of each individual method that must be guaranteed in order for them to be used as effective training tools.

Compared to residential training, the technological methods offer numerous and highly diverse alternatives to the provider by virtue of the various multimedia technologies available on the market, and the speed with which the technological field evolves.

The definition of quality standards for the various DL models would allow the training course supply on the market to be structured in a more articulate manner, offering learners different courses that can fulfill different educational needs, all with the aim of a subsequent analysis of educational outcomes designed to assess the impacts of the courses in the patient population.

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