

## Chapter 35

# Web-Based Learning Environment for Medical Education: E-Fer, A Practical Tool for Diagnosis and Treatment of Chronic Wounds

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### ABSTRACT

*This chapter describes the saliency of learning environments supported by information and communication technologies, followed by a conceptualization of the virtual learning environments, highlighting their overall advantages, more specifically those in the field of medical education. Special attention is also paid to some learning methodologies and strategies and their applicability. Before describing the E-Fer, as Web based learning system, the authors also introduce some practical examples of the use of information and communication technologies in medical education. The importance of this training platform for the diagnosis and treatment of chronic wounds is demonstrated here, with a description of its functionalities, as well as its characteristics such as case based learning and game based learning. At the end of this chapter, the authors present the research projects currently in progress, based on the e-fer, in areas such as the impact of the content adaptive model in learning processes, cost estimate as a result of non-training and the build up of communities of practice.*

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## **INTRODUCTION**

The technological and social developments demand new ways of accessing knowledge, and the learning environments supported by Information and Communication Technologies are used to a greater extent, favouring learning and communication between teachers and students.

Health care provision is likewise developing rapidly, entailing new techniques which are gradually becoming more complex and requiring greater training to perform them.

The Virtual Learning Environments are particularly relevant in skill training in health care, chiefly because they allow us to perform a series of experiments and exercises which could not otherwise be performed safely in real life.

Many of the methodologies and strategies used in Web based learning, that is to say Case Based Learning, Game Based Learning, communities of practice and practice simulation, are widely accepted and are being used in medical education.

One of the purposes of this chapter is to highlight the importance of the learning environments supported by Information and Communication Technologies in medical education and to describe some methodologies and strategies of the Web Based Learning systems, focusing on their applicability.

A further purpose is to present the e-fer computing platform and to describe it as a Web Based Learning system, demonstrating its the importance as a training tool in the diagnosis and treatment of chronic wounds, highlighting its characteristics and functionalities.

Finally, we present the research projects currently in progress, based on the e-fer, in areas such as the impact of the content adaptive model in the students' learning processes, cost estimate as a result of non-training and the build up of communities of practice.

## **THE LEARNING ENVIRONMENTS SUPPORTED BY INFORMATION AND COMMUNICATION TECHNOLOGIES**

In the current context, societies are gradually advancing towards an economy based on knowledge, and the technological and social developments demand new ways of accessing knowledge. The learning environments supported by the Information and Communication Technologies are used to a greater extent and aim to benefit the learning and communication between teachers and students.

The advancement and dissemination of the Information and Communication Technologies represent a powerful booster of new perspectives in distance learning through the online environments.

The technological development is changing the way contents are supplied and presented. Within these advancements, the growth and acceptance of the Internet is worthy of note. This phenomenon is quite visible in the development of Virtual Learning Environments in higher education (Lange, Suwardy & Mavondo, 2003).

Web based tools and the Information and Communication Technologies, in general, remove some of the barriers between the classroom and the real world, and provide room for students to develop their skills in expression, comprehension and use of ideas, in that they allow them to access a worldwide source of information and resources rather than have a limited and local access.

### **Virtual Learning Environments**

The Virtual Environments have a way of identifying the unique capacities of computers and telecommunications to improve learning (Chen, Yonggao Yang & Loftin, 2003). They are frequently defined as supporting software for the elaboration of accessible Internet courses. Furthermore, they are especially created to help teachers prepare and manage contents, enabling

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