

# Comprehensive E–Learning Appraisal System

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## INTRODUCTION

The healthcare sector in the XXI century presents a big technological development that covers a broad knowledge. All fields of medicine are deepening their knowledge, which increases the volume of material that must be handled by professionals in each specialty. This large volume of material should be taken into account by health professionals, because it contributes to a better quality of care.

The mode of transmission of this knowledge to professionals is usually through training courses in their own work areas (internal instruction) or outside the centers (external instruction). New technologies have entered the world of education, leading to changes in the way people teach and learn. The traditional way of teaching has been face-to-face classes; however, with rising technologies, virtual training via computers and virtual teachers are being implemented in some institutions. This change in the way of teaching also leads to changes in how to assess the knowledge gained through this method of learning.

The aim of this paper is to provide a small analysis of online training courses for health professionals, and deepen into an appraisal system developed to integrate different complementary

variables, and how they can be implemented as a method addressed to assess online courses in a more comprehensive way.

## BACKGROUND

### Health Training

Health training is a complex field; several areas of knowledge and practice make necessary an update in instructional and teaching methodologies (Schoonheim, 2014; Frenk, 2010; Horton, 2010).

There are many examples of instructional needs in the field of health. Many medical specialties (e.g. primary care, surgery, or oncology) require continuous training and up-to-date of professionals to provide the best patient care. Doctors, nurses, and technicians, all of them attend courses or educational programs in order to improve their knowledge or skills in each specialty.

One example is Evidence Based Medicine (EBM). It is based on the principle that medical decision making is achieved by integrating the best available evidence with clinical expertise and patient values. When teaching EBM it should integrate core knowledge with clinical practical

activities. This will lead to taught EBM with a variety of modes: lectures, tutorials, online, problem based or self-directed learning (Straus 2011; Del Mar, 2004).

Not only the health areas but also the professionals in medical specialties have troubles with their instruction/training. General practitioners (GPs) struggle with several barriers to the use of EBM related to insufficient knowledge and skills. They also find barriers related to their practice and patient population such as lack of time, patient-related factors or a lack of available evidence (Mayer 1999; Zwolsman 2013; Te Pas 2013).

Standalone teaching improves student knowledge, but not skills, attitudes or behavior in EBM. Non randomized clinical trials indicated that integrating teaching of EBM with clinical activities (blended learning) was associated with improvements across all four domains: knowledge, skills, attitudes and behavior (Coomarasamy 2004). In the results of randomized controlled trials, the authors concluded that any form of teaching, including lecture, tutorial, self-directed, online, problem-based, multidisciplinary, was associated with an increase in EBM competency (Ilic 2014).

A comprehensive meta-analysis recently conducted by Teachers College (Columbia University) (Means 2013), indicated that students in online classrooms had moderately better performances than those receiving instruction in traditional classrooms (Milic 2016).

In the Ilic's study students's perceptions were positive about using the BL approach in teaching and learning about EBM (Ilic 2015). They developed a three-step approach (i) self-directed learning through online multimedia presentations, (ii) discussion and activities in class, and (iii) application in practice. This method was positively received by students. Students involved in the BL approach found the content was useful, engaging and well-targeted to their level of competency and suggested that blended learning could be strengthened by introducing a journal club to small group activities early in the curriculum, providing an opportunity to learn in a group environment.

This could be similar to the “forums” created on e-learning platforms to debate issues or questions about different fields of knowledge.

Some other studies appreciate that e-learning alone will increase EBM knowledge but it is not effective in increasing EBM skills and changing EBM behavior. They recommended a blended learning course, because BL includes different learning or instructional methods, different delivery methods, different scheduling and different levels of guidance (Pankin 2012). An intensive blended learning course on EBM for GP trainers enables an increase in knowledge and skills that remains after four months. However, attitude and behavior towards EBM show no differences before and after the intervention (Te Pas 2015).

## **Training Methods**

The classical training methods consist in classroom lectures with students and teachers together. Lecture is a simple and fast method to present the vast issues addressed to a high number of learners. Some disadvantages of this method are long periods of time, inactiveness or absence of the students, or fast forgetting of the subject. When students have control over the learning methodology, it is called a “learner-centered” model of teaching. The role of the teachers in this context is to facilitate knowledge acquisition (Bahner 2012; Ruiz 2006; Boulos 2006; Koops 2011; Cook 2010).

Traditional learning must be stepped at a specific time and place and is considered essential in building a sense of community. New technologies have grown in educational world, driving to changes in teaching methods (Kemp 2014; Conole 2008).

E-Learning refers to the educational system in which teachers and students are separated by physical distance, but the technology allows them to learn together: it is the online way of knowledge. This system has its own limitations: there is no human interaction and communication regarding to a face to face classroom (Thiele 2003; Twomey, 2004). Online education is growing rapidly, pro-

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