

# The Electronic Portfolio as a Teaching Complement for Technical Skills in Health Sciences

*Rosa Villalonga, Department of Clinical Sciences, University of Barcelona, Barcelona, Spain*

*Ramón Pujol, Department of Clinical Sciences, University of Barcelona, Barcelona, Spain*

*Víctor Moreno, Department of Clinical Sciences, University of Barcelona, Barcelona, Spain*

*Jordi Carratalà, Department of Clinical Sciences, University of Barcelona, Barcelona, Spain*

*Francesc Borrell, Department of Clinical Sciences, University of Barcelona, Barcelona, Spain*

*Francesc Gudiol, Department of Clinical Sciences, University of Barcelona, Barcelona, Spain*

---

## ABSTRACT

*The portfolio has gathered pace in recent years, being a useful tool for teaching and assessment. The main goal is to improve learning through student reflection and continuous feedback of evaluations. The implantation of information technology has facilitated the introduction of the electronic portfolio (e-portfolio). Based on previous experience with portfolios, it was decided to implement it in some subjects within Medicine and Dentistry in the Department. The objectives of the study (2009-2013) have been assessing the response to its introduction, assess student satisfaction and determine the extra load imposed on the teaching process. The topic has focused on clinical skills of students, using the e-portfolio Mahara®, installed on the Virtual Campus of Barcelona University. There have been 1241 e-portfolios and 1611 email exchanges between teachers and students. All assessment is carried out on-line (average response time 48 hours, 40 minutes /portfolio). Satisfaction surveys show a high level of acceptance by the students. This allows one to conclude that the e-portfolio has proven to be a good teaching tool, presenting a high degree of compliance and satisfaction among students, encouraging student-teacher relationships.*

**Keywords:** *Dental Education, Educational Methodology, Electronic Portfolio, Evaluative Portfolio, Medical, Portfolio Assessment, Self-Guided Learning, Simulation, Students, Teaching, Technical Skills*

---

DOI: 10.4018/jcit.2014100103

## 1. INTRODUCTION

This formative experiment took place at the *Bellvitge Health Sciences Campus* (<http://www.ub.edu/bellvitge>), part of Barcelona University (<http://www.ub.edu>). It forms part of the excellent international campus *Health Universitat de Barcelona Campus* (<http://hubc.ub.edu>), which aims to articulate interaction with major hospitals and health research institutes. It is a strategic group of faculties and university colleges, hospitals, research centres, institutions and businesses in the field of health and has a strong territorial presence, situated in the *Barcelona and Hospitalet* region.

In the *Bellvitge Health Sciences Campus*, study options include degrees in Medicine and Dentistry along with studies in the fields of Nursing and Chiropraxy.

The study was carried out in the Clinical Sciences Department (<http://www.ub.edu/cienciascliniques>) of the Faculty of Medicine, key to the Medicine and Dentistry degree courses.

Our department has had for some years a special interest in everything to do with innovation in education. The Commission for innovation in education was created to promote teaching tools that would bring education in line with the European Higher Education Area (EHEA).

In 1999 we took part in the Communication Clinical Skills and Personal and Professional Development (CCSPPD) project, thereby joining the MEDINE group.

This partnership brought together teaching and evaluation tools such as the Objective Structured Clinical Skills Evaluation (OSCE) and the creation of new tools.

In the year 2000, said commission initiated the gradual implementation of three substantial initiatives:

1. Introduction of the paper portfolio.
2. Creation of the clinical skills lab.
3. Later on, the electronic portfolio.

The paper portfolio was implemented between 2000 and 2009 in the following subjects:

*“Habilidades clínicas y desarrollo personal y profesional I y II”* (CCSPPD), *“Semiología y Propedéutica Clínica”* (Semiotics and Clinical Propaedeutics) - both part of the Medicine degree and *“Anestesia y Reanimación”* (Anaesthesia and Reanimation) - of the Dentistry degree. During this period 250 Medicine students and 900 Dentistry students completed the paper portfolio.

In 2005 a Clinical Skills Lab was created, as simulation was establishing itself as a useful teaching tool in the Health Sciences. It was originally implemented in the Campus classrooms, but in 2012 an agreement was reached with the *Bellvitge University Hospital* moving it to the hospital, where students could get some experience of the hospital environment. The lab is adequately equipped with simulation dummies and substitute materials for practising clinical techniques. The purpose is that the students learn clinical skills and techniques (technical, communicative and teamwork), relevant to their degree. It is available for key subjects as well as those that are optional, such as higher degree programs.

Our team's ample experience of the paper portfolio methodology led us to consider implementing the electronic version over 2009 - 2010. This was facilitated by free access to the *Mahara*® e-portfolio program via a link on Barcelona University's Virtual Campus to their Moodle platform.

Our plan was to continue innovating and systematically making more use of Information Technology (IT) and online teaching in the Department. The advantages of speed and versatility are easily within reach of the students as they are already accustomed to communicating via these channels.

This paper presents an overview of our project, exposing the current state of both the use of e-portfolio as a teaching tool as this informal learning (Section 2). Describe its main objectives, the methodology used and the outcomes obtained (Section 3). The advantages and the drawbacks as well as the challenges of introducing a new teaching method are presented (Section 4). Finally, some conclusions are posed.

12 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: [www.igi-global.com/article/the-electronic-portfolio-as-a-teaching-complement-for-technical-skills-in-health-sciences/120702](http://www.igi-global.com/article/the-electronic-portfolio-as-a-teaching-complement-for-technical-skills-in-health-sciences/120702)

## Related Content

---

### Intelligent Query Answering

Zbigniew W. Ras and Agnieszka Dardzinska (2009). *Encyclopedia of Data Warehousing and Mining, Second Edition* (pp. 1073-1078).

[www.irma-international.org/chapter/intelligent-query-answering/10954](http://www.irma-international.org/chapter/intelligent-query-answering/10954)

### Learning Bayesian Networks

Marco F. Ramoni and Paola Sebastiani (2009). *Encyclopedia of Data Warehousing and Mining, Second Edition* (pp. 1124-1128).

[www.irma-international.org/chapter/learning-bayesian-networks/10962](http://www.irma-international.org/chapter/learning-bayesian-networks/10962)

### Formal Concept Analysis Based Clustering

Jamil M. Saquer (2009). *Encyclopedia of Data Warehousing and Mining, Second Edition* (pp. 895-900).

[www.irma-international.org/chapter/formal-concept-analysis-based-clustering/10926](http://www.irma-international.org/chapter/formal-concept-analysis-based-clustering/10926)

### Web Mining in Thematic Search Engines

Massimiliano Caramia and Giovanni Felici (2009). *Encyclopedia of Data Warehousing and Mining, Second Edition* (pp. 2080-2084).

[www.irma-international.org/chapter/web-mining-thematic-search-engines/11106](http://www.irma-international.org/chapter/web-mining-thematic-search-engines/11106)

### Learning Exceptions to Refine a Domain Expertise

Rallou Thomopoulos (2009). *Encyclopedia of Data Warehousing and Mining, Second Edition* (pp. 1129-1136).

[www.irma-international.org/chapter/learning-exceptions-refine-domain-expertise/10963](http://www.irma-international.org/chapter/learning-exceptions-refine-domain-expertise/10963)