

**Title of paper:**

“EDUGAMING PCs AND QUICKPDA –eBOOKS: A new model for surpassing fragmentation in mobile learning on e-health”

**Authors:**

Miguel Angarita, Rafael Bernal, Erika Ortiz, Bibiana Pinzón, Alfonso Esguerra.

Mobile Learning, e-health, (División de Educación, Fundación Santa Fe de Bogotá), Bogota, Colombia Calle 114 No. 9-45. Torre B Apto 915

Email: (miguel.angarita, erika.ortiz, rafael.bernal) @fundacionsantafe.edu.co

**Abstract:**

Many medical e-books are but digitalized versions of their written counterpart, with their interactive component limited to a “click” and “scroll” function, known as “fancy next-clicking e-books”. Their potential as valuable tools in life-long-learning processes, and its instruccional technology’s requirements are limited. On the other hand there is still fragmentation in trying to close the gap between learning applying x-rays films in medical training and learning games during medical practice.

The objective of this paper is to try to address these limitations which are the result of fragmentation on e-health, because of the amount of new information and number of communication devices.

We present an instructional technology fusion strategy of edugaming on PC’s and QUICKPDA e-books in our hospital environment. Our development has been applied during the first two years of radiology residence. Measurements of retention and learning were assessed using a virtual platform of LMS (Learning Management System).

The design, learning theory justification, and preliminary results are presented. We discuss evaluation of the model and the future of mobile learning on e-health.

**Keywords:**

Mobile technology, Instruccional Technology, Lifelong learning, e-health, fragmented learning process, medical.

## **Getting over mobile fragmentation on e-health environments.**

On health environments there is also a fragmented learning process due to several mobile learning objects known as a “fancy next-clicking e-books”. Most of the information on these formats are sometimes difficult to integrate during medical practice because of its lack of instructional technology design and the limitation for including radiological teaching images (chest x-rays) to be played on a mobile device’s screen.

These problems have to be address in order to secure a successful arrival of mobile learning on e-health. Therefore, it was necessary to create a well tailored learning/knowledge theory that differs from classical “linear transmission of knowledge”, robust enough to support and overcome m-learning fragmentation. This paper depicts the main principles of our e-learning theory with its new promising design solutions of m-learning that contributes to the overall medical user experience. In this matter we included an interactive complementary e-training module that emulates sometimes a virtual machine (VM), to “let know to the student how and when” apply a mobile quick-reference tool. For this we decided to apply andragogy principles, and others learning tools to improve and secure our learning memory and prediction system in radiology.

## **Introducing edugaming into Continuing Medical Education**

This interactive e-book, is accessible over the web and suitable for Continuing Medical Education. Also, its interactivity uses e-learning games (edugaming) in addition to the traditional multiple choice and true or false formats, accessible at the end of each chapter to make fun and enjoyable the learning process

Our development has been applied during the first two years of radiology residence. Measurements of retention and learning were assessed using a virtual platform of LMS (Learning Management System) in Moodle. In this regard we emulated the same look and feel radiological x-ray cases in a question format, to demonstrate if the radiology resident was able to find correctly relevant imaging findings.

The design, learning theory justification, and preliminary results are presented. We also discuss this evaluation of the model and the future of mobile learning on e-health.

## **LEARNING OBJECTIVES**

1. Understand the changes needed to transform e-reading textbooks into useful life-long-learning tools.

2. Introduce a revolutionary way of making e-books.
3. Overcoming the fragmentation of m-learning on medical educational PDAs.
4. Introducing learning by playing on a mobile learning health environment.

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