ENHANCING ONLINE LEARNING: THE USE OF OPEN COURSE WARE AS A TECHNOLOGICAL PLATFORM FOR THE STUDY OF COMMUNITY PHYSIOTHERAPY

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Abstract

Introduction: In the field of Higher Education, the modification of teaching-learning processes through the use of new teaching methodologies, is needed. To publish multimedia teaching materials (MTM) on technology platforms such as Open Course Ware (OCW) is currently possible. The aim of this study is to create on-line MTM for the subject Community Physiotherapy (CP) (University of Valencia, Spain) and present these materials in the OCW repository.

Methodology: Eight presentations were created, reviewed and presented in the online repository OCW. These MTM included different types of resources, such as presentations, images, graphics, texts, tables and concept maps. In addition, we designed a hypertext structure, in which texts, images or videos referred to other web pages, as well as to additional information related to Community Physiotherapy.

Results: This work presents the MTM that have been designed for the subject CP and are available in OCW. MTM have been differentiated by the type of teaching material. Thus, asynchronous study of the material is allowed. We expect students to improve their skills, increase their interest and have direct access to information. Educational Innovation Project funded by the University of Valencia.

Conclusion: The proposed MTM can be considered a valid and useful resource for students, with the aim of achieving the learning objectives of the subject CP.

Keywords: Innovation, technology, research projects.

1 INTRODUCTION

In the higher education field, knowledge society requires flexible organizational structures that allow broad social access to knowledge as well as personal training that facilitate the interpretation of the information and the generation of knowledge itself. For this reason, it has been necessary a renovation of the superior education concept, based on the students learning and also on the design of methodological tools that make easier the acquisition of skills and strategies for the management, analysis, evaluation and retrieval of information both electronic and conventional [1].

Therefore, it is necessary to modify the teaching-learning processes through the development of new curricula and the use of new teaching methodologies. In these kind of reforms, information and communication technologies (ICTs) play a very important role as a didactic resource, object of study, element for communication and expression, and as an instrument for the organization, management and educational administration (Ferro Soto Et al, 2009). In this context, universities must become more flexible and develop ways of integrating ICTs into learning processes. This involves changes in the standards of teaching and learning towards a more flexible model. In order to understand these processes of change and their effects, as well as the possibilities that changes and technological advances entail for the teaching-learning systems, it is convenient to place ourselves within the framework of innovation processes [2].

ICTs are a set of processes and products derived from the new tools, information supports and communication channels, related to the digital storage, processing and transmission of the information in a quick way and in large quantities. The main characteristics of these technologies are interactivity, instantaneity, innovation, high image and sound quality, digitalization and diversity. ICTs play an important role in the teaching-learning process of European universities (European Higher Education Area), regarding innovation in the forms of generation and transmission of knowledge and lifelong training [1].
The use of ICTs in higher education has many advantages in improving teaching quality, such as to access from distant areas, flexibility in time and space for the development of teaching-learning activities or the possibility of interacting with information on the part of the different agents involved in these activities. The main advantages that ICTs provide to the teaching-learning process are: the rupture of the space-time barriers, the possibility of interaction with information, their usefulness as a tool to support learning and as open and flexible learning processes. ICTs also improve communication between the different agents of the teaching-learning process, let more personalized teaching, a quick access to information, the possibility of interacting with information and create complementary activities to support learning.

However, the progressive incorporation of ICTs in university teaching in recent years has allowed the possibility of improving the creation, access and distribution of didactic resources, such as learning objects [3]. Learning objects are defined as small units of interactive content, whose most important feature is the possibility of being easily reusable. They can incorporate any type of format (printed, web, multimedia, word, etc.), according to the needs of the course itself, in addition to other additional elements [4].

It is clear, therefore, that the creation of an optimal learning design is a crucial aspect in guaranteeing the quality of the entire educational process. Therefore, it is intended to maintain a perfect organization of all learning units and to present an adequate planning that facilitates and guides students in their learning process according to their needs and availability [4].

Content development is one of the most important aspects to take into account in the process of integrating new technologies in the classroom. This development incorporates a series of guidelines that not only involve a significant change in learning methodology, but also expands the possibilities of customization and adaptation of the learning environments to the specific needs of each user.

Thus, digital educational materials can be considered as a valid option in the university context. Open Course Ware (OCW) is a free access repository that includes educational materials related to university setting. OCW uses the EduCommons computer platform, which allows teachers to post courses in a homogeneous way, while students can access to the course content easily. In addition, most universities belonging to the International Consortium OCW use the same platform. Thus, OCW is a useful tool for the assimilation of knowledge and techniques and therefore for the improvement of learning patterns [5].

The aim of this study is to create multimedia materials available online, in relation to the subject of Community Physiotherapy (University of Valencia, Spain) and present these materials in the online repository OCW, to improve knowledge and facilitate the students the accessibility to information.

2 METHODOLOGY

Community Physiotherapy is a compulsory subject of the 2nd year of the Degree of Physiotherapy (University of Valencia), with a teaching load of 4.5 ECTS. Regarding to its structure, it is divided into 8 lectures and 5 practical lessons.

Theoretical classes are included within the theme of Community Care for different risk groups: 1) Maternal health; 2) Child health; 3) Adolescent health; 4) Adult health; 5) Disability. The 5 practical lessons include the following thematic blocks: 1) Prevention and Health Promotion; 2) Communicable diseases; 3) Occupational health: the role of the ergonomist; 4) Attention to the disability; 5) Psycho-functional training.

In order to carry out this activity, several multimedia materials were created. In total, 8 presentations were created, reviewed and presented in the OCW online repository. These multimedia materials included different types of resources, such as presentations, images, graphics, texts, tables and concept maps. In addition, we designed a hypertextual structure, in which texts, images or videos referred to other web pages, as well as additional information related to Community Physiotherapy.

All the students were informed about the performing of this project and, therefore, it was possible the asynchronous work at any moment, according to the preferences and availability of the students. Additionally, through the "Download this course" button, the platform offered the possibility of downloading educational materials by the students.
In relation to the subjects’ content, the lessons were available on the following website: http://ocw.uv.es. The contents of the subject in OCW are under a Creative Commons license.

OCW also shows a description of the structure of the course, as described below: 1) General description of the course; 2) Competences; 3) Methodology used in the subject; 4) Seminar and class material; 5) Evaluation; 6) Academic guide; 7) Recommended bibliography; 8) Lecturers; 9) Download this course.

3 RESULTS

This communication presents the educational materials obtained, regarding to to the design of various multimedia materials about Community Physiotherapy.

As previously mentioned, the theoretical classes include 8 thematic blocks, for which the materials presented in this communication were designed, with the aim of being deposited in OCW. Figure 1 shows the OCW home page of the Universitat de València.

![OCW Home Page](image)

*Figure 1. The Open Course Ware platform: multimedia educational materials on-line.*

Educational materials that we present include different types of resources, such as presentations, images, graphics, texts, tables and concept maps. In addition, a hypertextual structure was designed and, therefore, texts, images or videos were related to other web pages and with additional information on Community Physiotherapy.

Next are some examples of the material available to students in OCW, differentiated by type of teaching material used.

Several graphs were used to be hung in OCW, with the aim of assimilating the information offered. The text was also a resource used in our OCW materials. In addition, the images and tables completed the information provided by the materials, for a better assimilation of concepts.

In order to enrich the quality of multimedia resources presented, the materials also included several formulas and concept maps. To conclude, we present several hyperlinks to additional materials in this course: hyperlinks with direct access to institutional health pages, hyperlinks to videos on YouTube, Clinical Practice Guidelines, evidence search engines, bibliographic databases, links to videos on Community Physiotherapy, links to normative, links to mass media like periodicals and breaking news on Community Physiotherapy, etc. Figures 2 and 3 show some examples of hypertextual multimedia materials designed in this project.
As previously stated, we offered the possibility of downloading the materials of the entire course, using the "Download this course" button. Therefore, it is a simple and accessible way to study asynchronously the material made.

We expect students to improve their skills and abilities in Community Physiotherapy, due to the asynchronous use of these resources. In the same way, we hope to improve interest and provide direct access to information to increase their knowledge.

4 CONCLUSIONS

The proposed multimedia materials can be considered a valid and useful option for students, with the aim of achieving the learning objectives of the contents of the subject Community Physiotherapy in the Degree of Physiotherapy.

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REFERENCES


