

Interactive digital models combined, using radiological images in the teaching of human anatomy to Medical Imaging and Radiotherapy students

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Abstract

The recent graduates in Medical Imaging and Radiotherapy (IMRT) have lack anatomical knowledge for safe clinical practice, mainly due to the reduction of clinical practice and integration, and pedagogical models, which should have a curricular reform.

This project aims to create an innovative and digital-based matrix for the teaching of the syllabus of Anatomy, which considers the aspects described above, stimulate new practices and promote a broad discussion among health schools.

According to a socio-constructivist model and connectivism logic, an innovative plan based on digital teaching was developed to be applied in the Anatomy course, through Learning by doing coherence to promote networked, technologically and digitally mediated learning, in which the teacher is a mediator of learning. With this method we think that the student will develop skills in socialization and collaborative learning, in increasing complexity (Bloom's taxonomy).

The plan was developed in 3 thematic blocks, with synchronous and asynchronous typology, distributed in hours of direct contact and autonomous work.

Synthesized morphological images will be acquired through the Krea.ai tool, focused on design and visual prototyping, 3D models and volume data segmentations. An explanatory podcast (notebooklm software) will be used for online discussion and a training quiz, with automatic feedback (Genially tool), will be used.

The final evaluation will be supported by the conceptual model of digital evaluation, PrACT.

Through the combination of mixed teaching methodologies, in the next academic years the evaluation of the results of the UC Anatomy, taught through fully digital resources, will be obtained by comparing with results from previous years.

Recent graduates in Medical Imaging and Radiotherapy (IMRT) lack the anatomical knowledge required for safe clinical practice, mainly due to a reduction in clinical practice, as well as pedagogical models adopted. This issue requires a reform of the curriculum.

This project aims to create an innovative, digital matrix for teaching the anatomy syllabus that considers the above aspects, stimulates new practices, and promotes broad discussion among health schools.

According to socio-constructivist and connectivist principles, an innovative digital teaching plan has been developed for the anatomy syllabus. This plan is based on the idea of learning by doing to promote networked, technology- and digitally-mediated learning, in which the teacher acts as a learning facilitator. We believe enable students to develop socialisation and collaborative learning skills, increasing in complexity (Bloom's Taxonomy).

The plan structured into three thematic blocks, incorporate synchronous and asynchronous activities, balancing of direct contact hours and autonomous work.

Will be used synthesised morphological images from CT scan and MRI will be acquired using the Krea.ai tool, which is focused on design and visual prototyping, as well as 3D modelling and volume data segmentation. An explanatory podcast (NotebookLM software) will be used for online discussions, and a training quiz (Genially tool) will be used. The final evaluation will be supported by the conceptual model of digital evaluation, PrACT.

Through the combination of mixed teaching methodologies, the results of syllabus Anatomy, which is taught using fully digital resources, will be evaluated in future academic years by comparing them with results from previous years.

Keywords: Anatomy; Digital teaching; Pedagogical models; Imagens radiológicas; Aprendizagem.

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