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#### **REVIEW**

# How to keep medical preceptors effectively motivated in a web-learning environment? An overview \*

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#### **KEYWORDS**

Distance education; Medical education; Preceptorship Abstract Distance learning has strengthened medical education, especially in geographically extensive regions. Despite the many characteristics of these web-based resources, the motivation of students to perform effectively in virtual educational programs remains a challenge. © 2017 Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

#### PALABRAS CLAVE

Educación a distancia; Educación médica; Preceptoría ¿Cómo mantener a los preceptores médicos motivados de manera efectiva en un entorno de aprendizaje en la web? Una visión general

**Resumen** La educación a distancia ha permitido potenciar la educación médica, especialmente en regiones geográficas más extensas. A pesar de la gran cantidad de propiedades de los recursos Web, los aspectos motivacionales de los alumnos para un desempeño efectivo en los programas de educación virtual siguen siendo un desafío.

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Abbreviations: DE, distance education; ABEM, Brazilian Association for Medical Education; MOODLE, modular object-oriented dynamic leaning environment; VLE, virtual learning environment; CPCP, Development of Pedagogic Competencies for Preceptorship Practice.

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J.P. Guará et al.

#### Introduction

The act of learning and teaching by distance have been a great challenge throughout the years. The appearance of information and communication technologies brought new perspectives for Distance Education (DE), allowing educators to develop digital resources with a spread of approaches. Brazil approved the specific legislation for national education in 1996<sup>1</sup>; nevertheless, e-learning systems for Brazilian medical educational programs just became widely used recently.<sup>2,3</sup>

The insertion of DE technologies is not specifically a revolutionary action; however it comprises a field of possibilities.<sup>4</sup> The simply availability of any subject for learners via media shall not be motivational enough. It is strictly important to favor the significant learning; and this learning should encourage the continuous improvement, providing organized and pertinent information on a proper moment; and promoting the internalization of this knowledge.<sup>4,5</sup>

If, on one hand, the educational web-based tools overpass some traditional programs limitations, such as high cost; on the other hand, the effective participation in the virtual environment precedes intimacy with the technology resources, connectivity and time availability.<sup>6,7</sup>

The Brazilian Association for Medical Education (ABEM) is a non-governmental institution that cares about the quality of medical education. It acts in under-graduation, medical residency and graduation programs. Recently, the national demand of preparing the preceptorship for new educational perspective, based on individual student profile and active methodologies, incited ABEM to finance the project of qualification for regional leaders in order to nationally empower the medical education.<sup>8</sup>

Initially, this project qualified over three hundred leaders among professors, tutors and preceptors from 12 Brazilian Federal Universities. These institutions were established as qualification centers, so the leaders could replicate the methodology locally. Additionally, as a consequence, a national educational network were structured.

The project, named Development of Pedagogic Competencies for Preceptorship Practice (DPCP), was divided in two steps: an initial face meeting, then, a distant phase.<sup>8</sup> A MOODLE platform was applied for DE activities.<sup>9</sup> Along the course, it was observed that the participant's motivational endeavor to keep effectively connected fluctuated, reasoning the purpose of this review.

#### **Methods**

The problematizing methodology was used in the DPCP course: the authors, according to each personal and previous experience, were required to enroll the factors they considered to influence the quality in distance education; then, a brain storm was performed. A list of different variables was cited. Mutually, the items in the list were numbered according to what the group classified as the most important. The effective participation and motivation in the virtual platform was pointed as the main influencer factors for higher performance in DE.

Then, the authors reviewed the medical literature individually, focusing the solution for the problem: how to keep effectively motivated the learner in a web-learning environment. As the papers were being selected, they were shared by MOODLE forum. A deadline of two months to finish the selection was covenanted.

After that, a final paper was gradually written by all through the Wiki tool, available in MOODLE. This source allowed a mutual textual construction. Ultimately, a single member was randomly selected to review the final text.

#### Review

## What do Virtual Learning Environment, e-learning and MOODLE mean?

There are several technologies currently being used in medical education. Although their approach overlap in terms of components and instructional possibilities, the main goals are similar: to make easy the acquisition of basic knowledge; to improve the ability of making decisions; to enhance perceptual variation and coordination skills; to practice rare or critical events; and to develop psychomotor capacities. <sup>10</sup>

The virtual learning environment (VLE) represents the online classroom. It contents a bunch of interfaces, tools and structures for an interactive learning. The management of this environment comprises a myriad of aspects, especially strategies for communication and learners' participation, supportive care and self-assessment.<sup>11</sup>

The e-learning is an educational technology based on computer, which information subjects are left available electronically. It is a generic definition, with a spread of usage. 12 Few examples are: the *Computer-assisted Learning*, which supports the face-to-face classes to enhance the discussion; the *Personal Digital Assistants* (PDA), that are available on smartphones and routinely used for quick researches, like medical questions, patient management and treatment decisions; the *Digital Games*, especially for some motor skills training, as surgeries simulation, for instance; and the *Simulation*, which a patient condition, or anatomic region, or even some clinical tasks are imitated, and the students are required to solve them. 10

Likewise, MOODLE appears as tool to benefit some e-leaning medical education programs. It name is an acronym of Modular Object-Oriented Dynamic Leaning Environment<sup>9,13</sup>; and it is an oriented dynamic strategy with a clear aim. This model demands an active participation of learners, once the knowledge is continuously debated and shared; so, the final success depends on the quality of subjects, the cooperative learning and the tutorial easiness.<sup>13</sup>

Another key of success for MOODLE courses is giving opportunity for learners to know about the platform tools. For instance, if a face meeting happens before the distance activities; then, the student performance in VLE shall to be higher. This previous meeting also interferes positively the motivational aspects during the virtual phase.<sup>14</sup>

Overall, it is incorrect to consider as e-learning strategy the simply information delivery by internet. This technology demands a group interaction; it requires the mutual presence of learners and tutors, besides the supportive materials. Having said that, it definition implicates the

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