

**Teaching and Learning Methodologies in Military Higher Education:
An approach to the introduction of technologies in the Classroom.**

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EXTENDED ABSTRACT

Education and training in the Portuguese Armed Forces, a comprehensive concept, aim at preparing the military for the performance of positions and the exercise of functions, responding to concrete needs of the military context, and, because they are inserted in the national education system, are the subject of evaluation and quality management procedures aimed at ensuring their continuous improvement.

Military Higher Education (ESM) in Portugal, with special relevance in the Military Sciences, consubstantiates itself in the accomplishment of courses and cycles of studies, conducive or not to the attainment of academic degrees. This teaching aims to prepare highly qualified cadres, developing command, direction and leadership skills, staff and execution to act in situations of risk and uncertainty specific to the missions of the Armed Forces and the National Republican Guard (GNR), in response to the requirements national and international security and defence. To this end, a comprehensive and integrated training of scientific, technical and technological, behavioural, military, moral and civic nature and an adequate physical and psychological preparation are required, essential to the exercise of functions in a military context.

The ESM is centred in the Military University Institute (IUM), formally created in October 2015, as a military university whose mission is to develop teaching, research, community support, cooperation and exchange activities with the purpose of training the officers and sergeants of the permanent staff of the Armed Forces and the GNR, qualifying them with the appropriate skills to carry out the duties that are assigned to them.

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In the construction of training (qualification) frameworks, it is essential to take into account the functional analysis (perspective of competencies), work context, organizational systems, institutional relations and their future application.

The European Union Military Committee and the European Security and Defence College have developed a qualifications framework at the level of the military profession. As a result of the European Initiative for the exchange of officers under the Erasmus program, a competency-based qualification framework for young officers trained by the Military Academies or similar has been developed.

Many of today's challenges are related to the breadth and diversity of knowledge, skills and attitudes required and to the necessary reflection on the most appropriate methodologies to promote and enhance the learning of new generations of officers.

In a changing environment, and with the notion that new generations (e.g. Millennials and Zeds) learn differently from previous generations, the increasing use of ICT in teaching in a military context can more easily bring together training objectives and focusing on the selection and integration of the best technological tools for a high educational return.

In this context, the use of Information and Communication Technologies (ICT) is instrumental and unavoidable because it facilitates innovation and renewal of institutions and provides efficiency and effectiveness gains. The latest technologies allow new uses and experiences in a training environment, in "Classroom" (in its physical and virtual dimensions), previously impossible.

Despite a whole range of new technological possibilities, the teacher continues to be reserved a hinged role, although now with new contours. In this sense, the preparation of the "military teacher" must be systematically rethought and updated, in order to incorporate the knowledge, skills and attitudes necessary to the demands and functional requirements of each moment, appropriate to the teaching of key competences for the 21st century .

In this way, the object of study focuses on the use of ICT in the different teaching and learning modalities in the ESM, being delimited under four perspectives:

- Temporary - present moment (2017/18 and 2018/19 academic years), since the research subjects are the current IUM teachers and students;
- Universe - teachers and students from promotion courses to senior officer (CPOS), joint staff (CEMC) and promotion to general officer (CPOG);
- Space - national military context, IUM scope;
- Content - analysis of the relationship between ICT and teaching and learning methodologies, with emphasis on their suitability to specific curricular areas.

Given the problem described and the object of study, the general objective of the research is to analyse the ESM, with special focus on the theme related to the concept of innovation in the "Classroom", teaching and learning styles, the role of ICT and the effects of the generational factor in the military context.

In this sense, it is important, in the first stage of the research, to analyse some relationships that are established between key variables of the study, which are

expressed from some specific objectives (SO), in relation to which the respective hypotheses will be listed later of research:

SO1: To relate students learning styles and teachers teaching styles in order to understand their impact on the teaching and learning process;

SO2: Analyse students and teachers attitudes towards greater use of ICT in the "Classroom" in order to understand their impact on the teaching and learning process;

SO3: To evaluate the suitability of teaching and learning methods resulting from the new technologies in the "Classroom" to the curricular areas, in order to identify opportunities for their introduction into the teaching and learning process.

Methodologically, the study is based on a hypothetical-deductive reasoning, based on a mixed-quantitative-qualitative research strategy, combining these two approaches for the illustration and mutual enhancement, materialized in a case study type research (Bryman, 2012; Guerra, 2006) and operationalized in a collection of data based on questionnaires, interviews and documentary analysis.

For the collection of empirical data (quantitative component) the following instruments are used: (1) Index of Learning Styles (ILS) Learning Style Questionnaire, proposed by Felder and Silverman at North Carolina State University, USA; and (2) Technology Acceptance Model, proposed by Kieran Mathieson at Department of Decision and Information Sciences, Oakland University, Rochester, Michigan. The collection is complemented with *ad hoc* items, designed to verify the appropriateness of ICTs in relation to specific curricular areas.

The qualitative component stems from individual interviews and discussion groups on results.

The analytical phase of the study is centred on the presentation and interpretation of the collected empirical data. In the concluding phase the results are discussed, conclusions and contributions are presented for the knowledge and practical implications, suggesting complementary studies.

Final note: although the research is still at an embryonic stage, the proposed communication will focus not only on the presentation of the conceptual framework and its interconnection with the methodological strategy for the empirical study, but also on the conclusions obtained from the results in the meantime collected and analysed.