

ICT Integration in Ecuador's Military Education: Going Beyond PowerPoint

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Abstract. The use of Information and Communication Technologies, ICT, as a way to generate better learning experiences by increasing student motivation in a constructivist framework, is one of the objectives to be reached by educational institutions in the current times, from which military education does not take distance, something in which the use of Information and Communication Technologies can help, being more than the use of simulators or a slide presenter. In Ecuador, the level of ICT integration in education is not high, which is reflected in military education, for which a referential model is proposed.

Keywords: Military Education, Information Technology and Communications, Technology Integration, Digital Competences, Constructivism.

1 Introduction

UNESCO [1] indicates that there are still people around the world who maintain that the schooling model has no future in the digital age due to the existence of e-learning, mobile learning and other digital technologies.

The importance of including computer technology in education is given by its versatility, its integrating nature and the possibilities it offers in the classroom. The didactic use of the new technologies makes them a didactic resource and / or a resource for the expression and communication, to facilitate the individualized attention to the student, the modification of the teacher's role and the access to a greater quantity of information [2]. The teacher who uses them appropriately takes on the role of accompanying the student in their learning, which has new capacities based on ICT to draw conclusions based on the available evidence [3].

The amount of information available these days, requires a careful and effective planning of what will be shared with students, and then teachers become increasingly essential in this new role. New technologies facilitate access to information, and sometimes too much information, which is because teacher guidance is essential. Teachers must use ICT, along with several other aids available for teaching, as instruments of their students' learning, as elements that facilitate it, as the means and not as the end [1].

Technology, then, must be used to remove the physical barriers that can hinder learning and in the transition between the focus on the retention of knowledge towards its real employment, that is, in the creation of competences. The ease of access provided by distance education and the availability of databases on the network, allow knowledge to be closer to students, with an appropriate guide, can develop skills based on new technologies [4].

In this context a referential model for ICT integration in Ecuadorian education is proposed, which can be used in the military education system of the country.

2 ICT INTEGRATION IN EDUCATION

Records of favorable results of the use of ICT in education are in sight. Pérez, Cebrián and Blanco, cited by Fuentes & Torres Gutiérrez [5], agree in their studies conducted between 2005 and 2006 that the use of ICT in education results in a considerable increase in students' motivation, and in a best classroom environment. A more recent study, carried out by Fuentes and Torres [5] to 15-year-old Spanish students, resulted in the technological factors employed in the houses acting positively on the students' grades.

After their experience in adult education using ICT in Andalucía, Fernández and Torres [6] concluded that they encourage motivation towards their use, personalized work, communication and the acquisition of knowledge. These conclusions are similar to those reached by Bravo and Forero [7], when they evaluated the learning acquired by their students when they used robotic prototypes or specialized programs for pedagogical purposes.

Also, there is an evidence of unfavorable results as indicated by Calero and Escardíbul [8] when mentioning the results of Israeli, Colombian and American works that did not find an improvement in the performance of students who used ICT for learning, although they also present evidence of work in England, India and the United States in which it was evident that students of science, mathematics and English who used ICT for their learning obtained better results than those who followed a traditional method.

Experiences in Ecuador indicate that the degree of use of ICT in education is low and therefore it is still too early to establish if the results are positive. Amores [9] indicates that the students of mathematics and physics of the Central University of Ecuador in Quito do not use new technologies in their learning except for the exchange of information between them, even though their teachers consider that these tools facilitate meaningful learning. In contrast, as indicated by Ortiz [10], at Casa-grande University in Guayaquil there is a greater use of new technologies, such as blogs, collaboration tools and social networks, which generates an approach to digital natives and the consequent change in the student's role, criteria that are shared by Hi Fong [11] based on studies conducted at the same University. The national experiences are varied, but the tendency is a low integration of the technology use in the teaching practice, as indicated by Rodríguez based on his experience with the Quito Educanet program of the Municipality of Quito and the Benalcázar School [12], as well as

Ortiz and Chiluzza, who determined that higher education teachers linked to the Ecuadorian Consortium for the Development of Advanced Internet (CEDIA), mainly use technology for administrative use, and a lesser extent as a support to teaching, being the lowest level is the innovative use of technology [13], despite the fact that the study group is of teachers committed to the use of technology in education.

These experiences indicate that in military educational environments, whose courses are developed in different ways depending on the objective sought, be it training, specialization or improvement, the use of ICT will be of great help, both to bring the knowledge to students to develop their competences still far from the study center, using distance education, as facilitating the development of skills such as teamwork, collaboration or professional skills, through teachers who integrate technology into their practice pedagogical.

3 Military Education in Ecuador

Now, although military education has the same characteristics as general education, it is necessary to specify some particular definitions that are used within the Ecuadorian Armed Forces, and relate them to those that are used within the pedagogical processes of civil institutions.

The Education Model of the Armed Forces in effect has as its first specific objective to implement a curricular design with a competency-based approach to military education [14], which encompasses the processes of training, preparation, specialization and improvement of Army, Navy and Air Force personnel from its entry until its retirement, processes that must be within the frame of reference that indicate the guidelines of the aforementioned model.

Training and improvement are only carried out in military institutes in the country, due to the sensitivity of the information, while training and specialization can be carried out both in national military institutes, as well as in foreign military entities or civilian educational centers.

Thereby, training and professional specialization are defined in articles 41 and 45 of the Regulation of the Armed Forces Personnel Law [15] as follows:

"The professional training is the preparation of military personnel that will be carried out through courses or seminars, which may have a maximum duration of one year, and that will be carried out without prejudice to the work activities of each military. They will be aimed at keeping the knowledge up-to-date and granting them the additional basic tools to perform in the workplace efficiently. "

On the other hand, professional specialization courses group the preparation received by military personnel in a specific field of their area of higher education, after their graduation from training schools, which allows them to perfect themselves for their occupation, profession or area of expertise performance, and the positions they must assume.

Professional specialization differs from training, in that these studies help you directly for your work, such as, for example, the specialization courses with which members of the Navy choose their qualification as members of the Surface Warfare

Force, Submarines, Marine Corps, Naval Aviation or Coast Guard once they graduate from training schools as officers or crew and with the title of Bachelor of Science or Naval Technologist respectively.

On the other hand, the improvement is defined by article 52 of the Armed Forces Personnel Law [16] as the educational activity through which the military, once discharged as an officer or troop, receives military and complementary knowledge to the performance in the immediate superior degree. These are courses that are carried out for promotion and develop military skills for their performance in the Armed Forces.

4 Constructivism in Military Education

The first idea of "military education" can be framed in a behavioral model by the rigidity of military forms, in which one might think that there is little space for creation, freedom and interaction, which are characteristics of a constructivist model [17].

Classes in the militia have not stopped of being mostly a transfer from the "instructor" to the "student", due to the cultural framework that, in the militia depends on traditions and inheritances [18], but for a while now it has been clear in different military institutions throughout the world, that constructivism in education can be the most effective way to reduce the gap between "knowing information" and "knowing how to use information" in complex environments, typical of an aircraft combat or an Combat and Information Center - CIC - of a ship [19].

It is for this reason that along with the Instructional model in which someone who "knows" teaches the one who can "learn" [17] each day, more experiences are generated in which a military team can use structured processes to consider alternatives and consequences before acting, without using pre-planned answers that are not necessarily adapted in the best way to the different situations presented by reality [19]. In that sense, the pure instructional model is not adapted to the military of the present and future, defined by Szabó [20] as a person, who must be thoughtful, creative, with several competencies, great capacity for adaptation and with abilities to solve problems about the half.

Juhary [21] states that military education should be seen as a tool that teaches the student to solve problems, but from conceptions, visions, doctrine and military modalities. Military education is a balanced mix in which behaviorism and constructivism must coexist, allowing students to learn to carry out orders at first and then develop as leaders. In this regard, recognizes the need to raise significant learning using constructivist techniques, but is pragmatic to recognize that in an environment like the military, the freedoms that must be granted to achieve the construction of knowledge must coexist with the traditions and forms of the militia.

The constructivist approach makes clear the importance of the student being exposed to different perspectives on the topics under study, which go beyond sharing information or working in groups, where the objective is to guide the student to achieve learning that supports the diverse points of view and allows you to make reasoned decisions [19].

In this sense, what is stated by Juhary [21] does not depart completely from this approach, since learning is contextual and is related to what is known and believed, as stated by Annen, Nakkas and Mäkinen [18] when they indicate that the constructivist approach is the most appropriate for a military student, where learning becomes a social process, taking as examples cases given in the military forces of Holland, Canada and Israel. Johnson-Freese [22] reaffirms this by saying that the military can find many advantages for his intellectual development by entering a more open environment of education, which allows him to create networks of knowledge.

Then, military education adapts in the best way to the postulates of the constructivist approach, because it tries to train soldiers capable of solving problems in complex environments or situations of group pressure, because when the student works to achieve their own learning, the educator it stops being the center of that learning, passing the responsibility of the process to the student [23].

When the student is empowered by his own learning he achieves real performances, which contribute to his own motivation to continue learning, because when relating the new knowledge with real life, with those performances that are expected of him in the future in his career, he will be trained to be used in different contexts [24]. This way of learning will serve those who live in environments of rapid decision making, teamwork, high pressure situations and often away from possible additional sources of consultation that allow you to expand the knowledge you already have. The challenge in Ecuador is to overcome previous conceptions and adopt constructivism as the norm. The study carried out by Romero [25] indicates that only 6.66% of the teachers of the Escuela Superior de Policía (Police Academy for prospective Police officers) use some constructivist pedagogical technique.

A study conducted in the Training and Specialization School of the Ecuadorian Navy (ESCAPE), demonstrated that its teachers did not agree on the importance of using e-mail and social media as means to improve their learning experience [54]. On the other hand studies conducted by Colorado and Cogollo [53] and Ruth [28] at the Military University of Nueva Granada (UMNG) of Colombia and the Naval Postgraduate University (NPS) and the Academy Naval of the United States (USNA), respectively, coincide when affirming that the current military students would use their mobile means of learning in a good way if it were considered as valid employment by their professors. According to this research, 79% of UMNG students, 55% of distance students and 60% of NPS resident students, and more than 70% of USNA students, would use these learning ways. The Police and Navy experiences, compared to the studies conducted in Colombia and United States, tell us that our teachers may be not doing what their students expect of them to motivate their learning.

Knowledge is defined by UNESCO [1] as the information, understanding, competences, values and attitudes acquired through learning and necessarily linked to the culture, society, environment and institutions in which it is developed. In this context, Ruiz Barría [26], states that competency-based education is born from learning as a phenomenon of the individual who learns and from the need to train professionals capable of solving problems in real performance areas.

5 ICT Integration in Military Education

Just as new technologies have changed the lives of societies in general, this is no different for the military. The Army and the Air Force of the United States have changed their models focused on the instructor towards the new student-centered paradigm, in which relevant, interesting and tailor-made learning experiences of the person who is learning are sought, with access to knowledge through mobile devices, with advanced systems organizing expertly guided learning [27].

Studies carried out at the Postgraduate School and at the Naval Academy of the United States determined that their students, Officials and Midshipmen respectively, had similar behaviors regarding the use of technology in education. In fact, almost all the students of both institutes indicated that they used their smartphones to read their e-mail and surf the web, download or use live (streaming) audio and video files, but only 10% used them to read e-books or use podcasts of their classes. Students, in general, demand greater integration of their educational platforms - Sakai and Blackboard - towards mobile devices in such a way that they can have greater access to them [28]. This is a clear indication that the generation of "Millenials" is not only present in civil society, but also among the military, which becomes an additional reason to firmly believe in the advantages that the integration of the ICT in pedagogical practice.

Traditionally, within military educational institutions, when talking about the integration of pedagogy and technology, simulators were immediately thought of. This does not stop being true, because the use of simulators in different levels are clear examples of learning in action, collaborative work and reflection in action in the so-called "War Games", an educational resource that is used more and more every day, recognized in its validity when interpolated to the civil environment and known within gamification [29].

Recent developments have made commercial simulators more and more useful for use in professional military classes, instead of systems designed specifically for such purposes. Thus, the game of naval tactics Jane's Fleet Command is used at the United States Naval War College, USNWC, regularly, while Army training centers in that country use an improved version of the game Janus to train at the company and battalion level. A version modified by the Marine Corps of the popular Doom game is used to train four-man combat teams in concepts such as mutual fire support, automatic weapon protection, attack sequencing, munition discipline and command succession. It is known that many flight students around the world have used Microsoft Flight Simulator to practice, but it is not until recently that it is known that aspiring fighter pilots of the United States Navy who used it, have regularly obtained better scores than who did not do it [30].

NETSAFA, entity responsible for cooperation with other countries in military education in the United States Navy, has taken advantage of social networks to facilitate communication with their students after they return to their countries of origin, creating Facebook pages that Teachers use to keep in contact and exchange information and questions with their students [27].

Distance education, a subject in which the Ecuadorian Navy has some experience with the use of platforms such as Moodle or Blackboard to support distance courses for students of the Naval War College (Academia de Guerra Naval) or ESCAPE. Before entering promotion courses, officers and crew must approve distance courses that qualify them for entry, as well as pass continuing education modules at the University of Armed Forces - ESPE, which are considered as requirements to continue in the race.

Another example is the Virtual Desktop initiative of the United States Navy, which seeks to improve and facilitate the educational experience of students at a distance from that institution, by allowing students to enter from any computer, generating virtual desktops to access classified information, leaving aside the dedicated terminals, and facilitating the transmission of sensitive information that would otherwise generate serious security risks [31].

More examples of the increasing integration of ICT in military education include the employment in the United States Armed Forces of intelligent tutorial systems, or virtual worlds used for Second Life-type games for decision making, and even individualized learning models as those used by the US Marines, promoting changes in the pedagogical interaction between teacher and student [32]. These forms of using ICT in military education should only remember that their use is a means and not an end, since the integration of ICT in military education is as valid as it is in civil education.

Unfortunately, while distance education is a way in which the Ecuadorian Navy has integrated ICT in education, the experience of ESCAPE and the Police indicates that the path that "uniformed education" has to travel is long. Most ESCAPE professors, for example, believe that it is good to use technology, but at the same time, they say they do not [54].

6 ICT Integration Models

In order to integrate ICT in the teaching practice, it is necessary to have a methodology that must necessarily start with a frame of reference that allows defining the state of integration, which are defined under different models.

Majumdar [33] presented in his report to UNESCO a proposal for a model of ICT integration in education. This model consists of stages that are considered as steps that identify the development of ICT in education.

Institutions that are in the initial stage of ICT integration follow the emerging approach. These are those institutions that are just beginning to have computational infrastructure and their teachers make personal use of new technologies, such as using word processors or using the Internet to communicate with friends or family. These institutions, begin to know that they can use ICT, but are not familiar with them, and therefore use them to improve the performance of their professionals

When institutions are in a stage of learning to use ICT, and seek to improve the ways of learning, Majumdar indicates that they are in the second stage, the application

in it, teachers use ICT for professional purposes, using them to support Learning in your area of knowledge.

The third stage is known as infusion and involves integrating ICT into the curricula, using them in laboratories, classrooms and administrative sectors. It not only involves the teaching - learning processes, but also those of its management. These institutions understand when and how to use ICT and thus seek to facilitate learning.

The fourth and last stage is called the transformation stage and it happens when the educational institution renews its organization so that ICTs are an integral part of professional practice. The teachers of these institutions seek to create innovative learning environments using ICT.

Based on this model, Anderson [3] identifies the stages in which teachers could be found by comparing their ability to use ICT. Thereby, a teacher who applies tools such as word processors, programs to make presentations, databases, spreadsheets or email to support their process, will be in the first stage, while those who use software to support learning, I could already say that it is in the second.

The teacher who seeks to facilitate learning using multi-mode instruction, using a variety of multimedia tools to facilitate the learning of their students, selecting the one that is most appropriate for each task, will be in the third stage.

In contrast, the teacher who uses modeling and simulation, expert systems, interactive learning tools, will be in the fourth stage and will also be more open to supporting pedagogical innovation.

In order to determine at what stage the institution and its teachers are, there are different models that can be adapted to the reality that exists to obtain valid indicators that clearly determine the level of ICT integration in pedagogical practice. As indicated by Majumdar [33], the International Society of Technology in Education, ISTE, developed since 2000 the national standards of technology education, NETS for teachers, NETS • T, based on the national standards of technology education for students, NETS, which focus on teacher education before starting their work as a teacher, define concepts, knowledge, skills and attitudes to apply technology in education. After a few years, the ISTE changes its standards for teachers in a second edition, indicating that those who apply, design, implement and evaluate learning experiences can engage students and improve their learning using ICT. The standards are defined as follows [34]:

- (1) Facilitate and inspire student learning and creativity.
- (2) Design and develop learning experiences and assessments of the digital era.
- (3) Modeling work and learning in the digital era.
- (4) Promote and model citizenship and digital responsibility.
- (5) Involvement in professional growth and leadership.

ISTE participated in the definition of the ICT Competencies Framework for UNESCO Teachers [35] together with other institutions such as Microsoft. UNESCO aims to achieve the objectives of national economic and human development through education, which means that there are differences between these two models of the integration of ICT in pedagogical practice.

Thus, the UNESCO Framework emphasizes that it is not enough for teachers to have ICT competences and be able to share them with their students, but that they should be able to help their students collaborate with each other, solve problems and learn in a creative way using ICTs to become good citizens and members of the workforce [36]. This model takes three approaches: technological literacy, the deepening of knowledge and the creation of knowledge, and in that way takes into consideration all the aspects that define within the work of the teacher, creating a matrix framework.

A third model to be taken into consideration is the Common Framework of Teaching Digital Competence of the Ministry of Education, Culture and Sport of Spain [37]. This works on 5 different domains, which take into consideration the digital competences that must be achieved and integrate teachers in their practice, referred to the domains of Information, Communication, Content Creation, Security and Resolution of Technical Problems [37, pp. 66-73].

The standards defined by UNESCO, ISTE or the Ministry of Education of Spain are clear and are accompanied by their respective indicators and as such, can be used to guide the evaluation to the pedagogical practice of teachers in military institutes, as such way that allows measuring the integration of ICT in it, and thus be able to define at what stage they are according to the model defined by Majumdar, which may provide a clear idea of the shortcomings and needs to make the best decisions that could improve those levels and take military education and its teachers to the higher stages.

For example, ISTE has indicated that a study conducted by the Richard W. Riley College of Educational and Leadership, cited by Beglau [38] found that teachers who use technology to support learning in their classrooms have frequently reported large benefits in learning, commitment and development of skills, compared to those who have not. The same study found that only 34% of 1000 teachers surveyed use technology 10% of their class or less. That is why it is necessary to train teachers according to the approach made by ISTE, which has found positive results using 3 models [38]:

- (1) Cognitive training.
- (2) Instructional training.
- (3) Peer training focused on technology.

UNESCO [39] has carried out studies to determine the results of ICT integration using its frame of reference in the Asia-Pacific region. For example, Malaysian teachers indicated that after being trained to use ICT in their teaching practice they were able to incorporate them into their classrooms allowing them to live new forms of learning. Another important experience is that of Indonesia, a country that has committed to education using ICT with programs such as wireless networks in all schools with radio frequency links or free software licenses for donated computers. Other countries that were evaluated were the Philippines, Singapore, South Korea and Thailand, each of them with success stories referring to positive change for having applied ICT integration standards in education [40].

The Spanish case is different, since the frame of reference is more recent. However, digital literacy actions have been carried out in the community of Madrid since the nineties, which since the issuance of the frame of reference have been increased, such

as courses related to the use of computer tools in curricular areas, and employment of web 2.0 applications [41]. In general, there are actions tending to integrate ICT in schools such as the provision of digital educational content platforms, tablets in classrooms, interactive digital whiteboards or even the freedom to carry their own device in some communities [42].

A large percentage of 5,000 Spanish teachers surveyed in a study conducted by Arca, Sanabria and Vega [43], indicated that the increase in the availability of resources and technological infrastructure is a positive element that has allowed integrating innovations based on ICT into pedagogical practice, through information search activities, work with word processors, on-line exercises. One of the most important findings is that 80% of teachers surveyed believe that ICT in the classroom does not cause an increase in the distraction of students or an added effort of importance to their teaching.

Now, these models are the result of the reflections of their creators and therefore define a reality that is a function of the observed. The Ecuadorian case, as can be inferred from the research carried out at universities in Guayaquil and Quito, and the Police and Navy experiences, is different. The conclusions of these studies indicate a low integration of ICT that does not even reach the lowest levels of the proposed models.

That is why, in order to establish a scale of integration of ICT in teaching practice that is better adapted to the Ecuadorian reality (including military), the models of ISTE [34], UNESCO [44] and the Ministry of Education, Culture and Sports of Spain [37], and the experiences obtained in the studies carried out by graduates of the Central University [9], Universidad Casagrande [11] and [10], FLACSO [12] and the Escuela Politécnica del Litoral [13]] in professors of university level are taken as reference, to define a scale of levels of integration of ICT in the teaching practice in the following way:

In the proposed model (see Figure 1), in the 1st level: Digital Literacy, the class is standard, with a basic knowledge of technological tools and practical integration of technology on very basic topics such as generating documents or using a slide presenter. The 2nd level: Design of digital experiences, the class is standard, but using digital tools beyond PowerPoint. Design and evaluate authentic learning experiences to develop knowledge and skills using digital tools as support. In the case of 3rd level: Work modeling and digital learning, the class uses collaborative groups, applying knowledge to solve complex problems. I use complex digital tools to achieve collaborative work. In 4th level: Citizenship modeling and digital responsibility, teacher manage and guide the class. I exhibit a behavior that guides my students to integrate technology in an adequate, legal and ethical way in their practice, while creating their knowledge. In the, 5th and last level: Involvement in professional growth and leadership, we improved the professional practice, while learning for life model demonstrating the effective use of digital tools and resources and encouraging students to create knowledge by taking me as a learning model. Students are able to solve technical problems, and innovate the use of technology in a creative way.

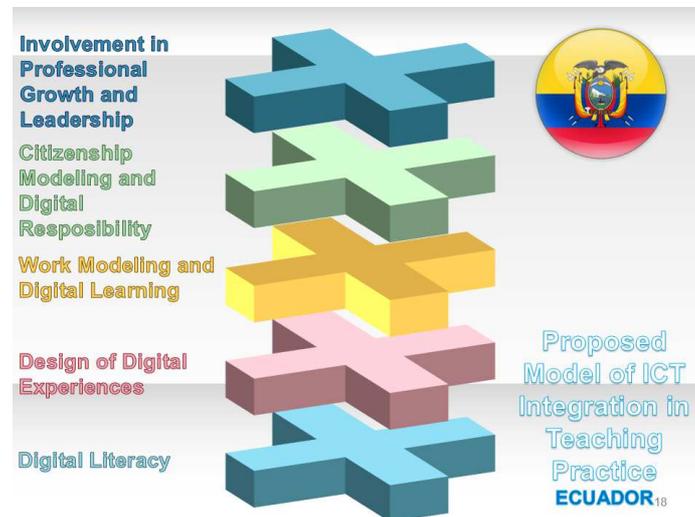


Fig. 1. Proposed Model of ICT Integration in Teaching Practice for Ecuador.

Pozuelo [45] indicates that some time ago there has been an insistence on the need to change teaching strategies in the learning process, but even so, research shows that teachers do not have enough digital skills to integrate ICT into their practice. Driskell [19], Méndez Cortes [17], Szabó [20] and Juhary [21] indicated that military education can benefit from the constructivist approach, while Bell and Reigeluth [32] showed that it can benefit from the increasing use of ICT for personalized learning.

Añel and Raposo [46] in their research on postgraduate teachers in Spain show that although the Internet is an enriching resource in the educational context, it is very little exploited, with teachers being one of the cornerstones for the integration of ICT in education, so that their availability and attitude will be fundamental to make it possible.

In that way, the positive approach that military professors could have toward the use of technological resources in education will be a strong base on which to build knowledge about the possibilities offered by ICT to improve educational processes. But it still will be just the beginning of a long process.

7 Conclusions

UNESCO Regional Office for Latin America and the Caribbean [47] indicates that in the reality of this region of the world, great expectations should not be created regarding rapid changes in the current situation, since ICT should not be considered a matter of specialists, but as a cross-cutting element for all educators. It is for this reason that initially it will be necessary to gradually pass digital literacy for military teachers in relation to the academic use of ICT. If based on the results obtained from the experiences in civilian educational institutions, it can be concluded that teachers in Ecuador are mostly within the first 3 levels of the ICT integration model proposed for Ecuador,

it should initially aim to provide them with the necessary knowledge about the different technological resources that can be used, in such a way that they can introduce them into their teaching practice as they take more confidence and knowledge in the advantages that their use can provide for the learning experience of their students.

In order to change this situation, it is necessary to describe the training needs of teachers in the use of ICT, to improve the learning experience in the military context. If we take UNESCO's recommendation into account again, these training needs must be solved gradually and based on digital literacy. The ALEPH program in Colombia seeks the knowledge, use and incorporation of ICT in the professional training of teachers and for this, has developed a program to train them in educational services of the Internet, educational communication and audiovisual media [48], very similar to the proposal of Heinz and Lara [49], focused on the development of basic competences in ICT, development of cross-cutting competences in ICT and administrative and results management. The UNED Foundation [50] in Spain offers a training program in ICT for teachers that covers topics such as the didactic integration of the Internet in the classroom, communication with ICT applied to the classroom and the creation and management of digital content, all of these, private efforts that have counterparts led by Ministries of Education such as Argentina [51] with its Teaching Specialization in Education and ICT, which reviews topics such as teaching, learning and evaluating with ICT, ICT strategies, cross-cutting integrations and development of educational proposals with TIC; or that of the Dominican Republic [52], which intends to organize 600 courses to train teachers of the different levels of the Dominican educational system in necessary elements to implement models of ICT integration, classification and use of digital resources and ICT strategies.

Taking all these experiences and designing a proposal that adapts to the training needs in the military context, according to the model proposed by the Joint Command of the Armed Forces [14] of competency-based learning, makes it necessary first of all to take into account the need to start with digital literacy and then integrate these new digital skills into the teaching practice, starting by placing the integration of ICT in the classroom as facilitator, as a medium and not as end, technological resources that are used efficiently by properly trained teachers, will help to improve student learning.

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