

*La Multimedia EgreMenSoft, para la superación profesional  
de los oficiales egresados de la especialidad de menores  
EgreMenSoft Multimedia, for the professional improvement of  
officers graduated from the specialty of minors*

**Claudia Teresa Bueno-Villalón; René Bueno-Chiba; Ibia Villalón-Jiménez**

Universidad de Guantánamo, Cuba

**Correo(s) electrónico(s)**

[claudia@cug.co.cu](mailto:claudia@cug.co.cu)

[renebueno@nauta.cu](mailto:renebueno@nauta.cu)

[ibiavj@cug.co.cu](mailto:ibiavj@cug.co.cu)

ORCID: <https://orcid.org/0000-0003-0178-9130>

<https://orcid.org/0000-0002-5256-9763>

<https://orcid.org/0000-0002-8826-0864>

**Recibido:** 22 de septiembre de 2021

**Aceptado:** 2 de octubre de 2021

## Resumen

El objetivo de este trabajo es elaborar una multimedia para la superación de los egresados de universidades militares y cursos básicos en la Especialidad de Menores, del Órgano de Menores del Ministerio del Interior en Guantánamo. La multimedia educativa permitirá que exista una estrecha relación entre el egresado, los oficiales y viceversa que permita utilizarla de forma interactiva y alcanzar los conocimientos de diversos temas que influyen en su relación profesional, y en el componente investigativo y laboral, demostrando la importancia y demanda que tiene el mundo digital, en el ámbito militar, educacional y su contribución para el mismo.

**Palabras clave:** Multimedia educativa, Fase; Sistema operativo; Ordenadores.

## Summary

The objective of this work is to elaborate a multimedia for the improvement of the graduates of military universities and basic courses in the Specialty of Minors, of the Minors Organ of the Ministry of the Interior in Guantánamo. The educational multimedia will allow the existence of a close relationship between the graduate, the officers and vice versa, allowing to use it in an interactive way and to reach the knowledge of diverse subjects that influence their professional relationship, and in the investigative and labor component, demonstrating the importance and demand that the digital world has, in the military, educational field and its contribution for the same.

**Keywords:** Educational multimedia, Phase; Operating system; Computers.

## Introduction

The introduction and effective use of computers for teaching purposes has become a complex phenomenon with wide perspectives, the results of which will flourish more in a longer term, to the extent that the answer to the question how to use the computer facing each educational situation, it is clear that, for all in one way or another involved in the area of educational informatics, and be consistent with it.

A very accurate reflection related to the above is the following: "The main key to the role assigned to computers in education does not lie in the particular characteristics of the transmission and interaction system, but in the symbol systems that can be handled with it.

The computer must help the student to work with his mind, not simply to respond automatically. Moreover, it must be clear that no one medium can do everything, particularly in educational situations.

To ensure that the use of computers in the teaching-educational process plays a relevant role, it is necessary to provide them with quality multimedia, which should be measured in terms of the knowledge they are capable of representing and transmitting. Therefore, the objective of this work is to elaborate a multimedia for the improvement of the graduated officers of the juvenile specialty in Guantánamo.

## **Development**

The educational institutions of the Ministry of the Interior recognize the extraordinary importance of the use of information and communication technologies for the management of academic, administrative and scientific information, as an essential resource to meet the objectives proposed by society.

As part of this process, each year a set of actions is carried out together with the authorized institutions in order to prioritize the use of ICT tools in the management of science with an output in the effectiveness of educational processes.

Among the authors who in recent years have devoted their work to the use of ICT in educational environments, the following stand out: Cabero, J. (2004), Torres, P. (2005), Toro, M. and Castellanos, (1997), Barrera's, F. (2003), and Marqués P. (2010). Similarly, the works of Cabrera (2006), which approach the subject from the approach that information is a methodological means for the scientific development of any nationality, by becoming knowledge as an active entity that provides professional prerogatives, are accentuated.

The transformations that today operate in the educational system of the world and in particular in Cuba, demand the use of educational Web sites, but in particular in the Ministry of the Interior and in the Organ of Minors, a site with multimedia will be implemented to allow the officers graduated from the Specialty of Minors of the Ministry of the Interior, an adequate preparation and training.

In this sense, Fernández, M. states that:

Technological changes about access to information and its treatment influence, unintentionally, in all social spheres and of course in the educational sphere, facilitating new forms of communication and new ways of communicating, new social, community cultures, new ways of transmitting and reorganizing knowledge and knowledge. (2000, p.32).

With the informatization of society, Information and Communication Technologies (ICT) have emerged from the union of digital technologies, informatics (with multimedia resources), and communications, with the possibility of data transmission.

Prior to the process of elaboration of an educational multimedia, it is essential:

- To determine the existence of an educational problem to be solved.
- To ensure that the computer effectively has qualitative advantages over other educational means to solve the problem.

The appropriate application of technologies has shown that they can expand learning opportunities, as they provide data of veracity and novelty. On the other hand, they can also testify to the advancement of thinking, with emphasis on analysis and synthesis.

In spite of all the disadvantages that the use of ICT in the educational world may have, we admit that the benefits have a greater weight. Because of the great importance it gives us as a means of teaching-learning, and within it, the production of educational technological products, such as: electronic books, Web site, multimedia, educational software, etc.

Cuban society aspires that the educational centers guarantee that the new generations assimilate the scientific-technical advances and are integrally formed, that they play an active and efficient role in the knowledge and transformation of our reality.

It is opportune to recognize that informatics is useful for the development of the innovative society, its use is inevitable in the systematic advancement of the teaching-learning process, since it allows the intellectual development of the student, in accordance with the potentialities it offers.

The officers graduated from the Specialty of Minors must acquire and develop a system of knowledge, habits, abilities and attitudes that allow them to work with Minors in an independent and creative way in the solution of the difficulties that arise in the construction of our society. The strengthening of an environmental culture is important what is desired in the new generations and for this, teachers prepared to carry out the required environmental education are required.

The Chiefs and officers with years of experience play an important role in the preparation and improvement of the graduates of the Specialty of Minors, they participate as agents of change in personal and collective behaviors in correspondence with the social vision of the importance of improvement through specialized classes.

The process of elaboration of the proposal was carried out through the dialectic relationship established between the relations Problem - Object - Field - Objective that expresses the need for the professional improvement of the officers graduated from the Specialty of Minors of the Ministry of the Interior in Guantánamo.

Assuming the problem posed in this research, the magnitude of the contents that should be made available to the graduated officers and the potentialities offered by the use of informatics, Multimedia was selected as a support for this knowledge.

### **Use of NICT**

It activates the acquisition of knowledge, disseminates it quickly and effectively; it also provides possibilities for the development of teaching by accelerating the cognitive process, the formation and development of intellectual capacities, habits and skills that enable self-learning and creative activity of the graduates, contributing to the integral formation of young people in correspondence with the ethical principles of our society. It contributes to the firmness of results and knowledge developed through daily effort, practice, example, with the condition that they attract and contribute.

Multimedia is intended to function locally, although it can also function on the Net. In general, there is a tendency to develop applications that run on computer networks and Cuba is no exception in this sense. An example of this is the current elaboration of educational software produced by specialized centers.

The use and implementation of Multimedia is formalized because it provides new ways of communicating, new social and community cultures, new ways of transmitting and reorganizing knowledge and knowledge. And it is a necessity because the graduate officers are not only

prepared to use these computer tools, but also to generate their own information from the preparation that is done in this sense, which brings as a consequence a change in their role in society.

The design of the Multimedia EgreMenSoft is attractive, adapted to the preferences of the target users, the colors used are refreshing and are related to the educational topics, in the contrasts warm and cold colors are used, transparencies are used in the text backgrounds. The font type and size is adequate. The different elements that are part of the graphic design were adequately distributed. In addition, it allows a quick and easy navigation without the need for the user to have high computer skills.

Objective of the Multimedia EgreMenSoft: to create a space in which to allow the Chiefs and experienced officers to facilitate the scientific exchange and the improvement of the officers graduated from the Specialty of Minors of the Ministry of the Interior.

Target audience:

- Officers graduated from the Specialty of Minors of the Ministry of the Interior.

Main characteristics

- Ease of use

The functional design has been structured to offer a solid and open graphic model that allows navigating through the Multimedia in a fast and efficient way. The same graphic structure allows access to information. It has a friendly interface. The execution is immediate, it does not require installation processes, nor specialized configurations of the operating system.

### **Multimedia Description**

The following hyperlinks are located at the top of the page:

Home: it is the initial page, the first one that the user visualizes when he/she opens the Multimedia, in it is shown in the left part 10 icons of the different topics approached in the same one and in the right part appears the definition of those that is and that works the professional overcoming.

The following screen appears the different windows numbered from 1 to 10 with their respective tasks of each topic, in the part of below to seem windows with which I must know, sounds, help, exit and to return to the main screen.

### **Methodology of analysis and design of EgreMenSoft Multimedia.**

According to the philosophical dictionary "Methodology. 1. Set of research procedures applicable in any science. 2. Theory on the methods of scientific knowledge and its transformation..." (Rosenthal, M. and Ludin, 1981. p.54).

We can add to this field a methodology that brings together a set of techniques, procedures, tools and documents that guide the developer of a research. In the world of information technology it would be the set of tools and documentary support to help in the analysis and design of the realization of a multimedia.

The methodologies are shown in a clear and summarized way, the fundamental concepts of the development and maintenance of the information system, the importance of project management and quality in the development of systems and its related aspects are emphasized:

This chapter will present the cataloguing card of the proposed multimedia, the technological chart of its modular and functional structure, where are included: the general and functional description of the multimedia, the design of the screens that compose it, the formal description and the methodological proposal for its use in the specialized preparation of the graduated officers of the Specialty of Minors of the Ministry of Interior in Guantanamo.

Cataloguing Card of the Multimedia: EgreMenSoft.

- Name of the multimedia: EgreMenSoft.
- Institution: Ministry of the Interior's Office for Minors.
- Product Type: E-book; Educational Hyper-environment; Tutorial
- Language: Spanish
- Educational Subsystem: General; Pedagogical Training
- Educational level: University.
- Area of Knowledge: Self-improvement.
- Formative content: ethical; environmental; political ideological, formation of results.

Minimum requirements:

Microprocessor: Intel Pentium or Celeron at 133 + MHz; Color Depth 16 BIT; Mouse; Sound; CD ROM; Operating System: Win XP, Win 7, and Win 8.1 and Win 10

Screen Resolution: 640 X 480, 800 X 600

### **Multimedia Evaluation.**

Need

Rationale: The Multimedia is directed to be of great utility in the training of the graduated officers of the Specialty of Minors who are going to work in the Minors' Organ of the Ministry of the Interior in Guantánamo, to solve the problem of how to carry out a specialized preparation of them from its use; where a better and greater development of the evaluation process is reached, which they are going to face. It faces the contents about the Specialty of Minors, it is carried out the overcoming to obtain the preliminary knowledge and to perform the corresponding task within the Specialty; it can be used to consolidate the knowledge and to know what the Specialty of Minors is and what it is based on.

#### Conceptual reliability

Argumentation: All the information used is from reliable sources and is in agreement with the work objectives outlined in the Specialty of Minors and referred to in the bibliography consulted in the thesis.

- The objectives are clearly formulated and are implicit in the verification carried out with the proposed exercises, the information presented has a rigor and precision in correspondence with the diagnosis we have of the cadets graduated from the University and the Basic Courses.
- The information emphasizes the basic elements of knowledge that one must have about the Specialty of Minors and uses a current and valid terminology, the knowledge and skills propitiate an inter-material relation.
- There are no grammatical or spelling errors, there is correspondence between the information and the starting level required of cadets graduating from the high school and basic courses.
- The orientation towards the formation of results in accordance with the principles of our society is clear. Systematizing the qualities, norms and patterns of social conduct.
- It encourages reflective thinking, feelings and qualities that should characterize Cuban revolutionaries.
- It fosters positive attitudes that lead to responsible decisions in study, work and life.

#### Functional reliability

Rationale: Multimedia runs on any Windows platform under normal conditions and does not display error messages.

It determines if the conditions of the machine on which it runs are ideal for its correct operation. Its installation prepares the machine with the resources it needs for its efficient running without being aggressive with the parameters of the operating system, it behaves well in RAM of 64 Mbyte, but its behavior is excellent in 128 or 256 Mbyte of RAM and 32 bits of color, its running is efficient in the configurations of the PCs of the Specialty of Minors in Guantánamo of the Ministry of the Interior and in the laboratories of the Instruction Center. It can be installed on hard disks and run from CD ROM independently.

### **Psychopedagogical Reliability**

Rationale: Experiments conducted at the Minors Specialty of the Ministry of Interior in Guantanamo yielded significant results:

The graduated officers assimilate approximately 5 times more the information presented than using other conventional means such as printed and digital documents in the form of texts, resolutions and directives that regulate the work. They develop skills and abilities that are systematized by the learning strategy.

### **Communication**

Rationale: the multimedia interface is user-friendly (intuitive, transparent, easy to use), the coding system used is clear without interferences, the structure of the program allows easy access to its different components; the use of multimedia resources is supported by psycho-pedagogical needs.

The means used are harmoniously distributed; navigation is always without loss of orientation, offering different levels of assistance.

### **Computer services**

Rationale: the product includes a diverse and justified variety of computer services that make it a useful and feasible tool for both the student and the teacher:

- Navigation
- Localization
- Portable
- Printing
- Feedback
- Access to other modules
- Performance evaluation



- MM Support
- Access by sections
- Methodological recommendations for the treatment of the subject or for the use of the program as a teaching tool.

### **Motivational aspect**

Argumentation: The product causes graduate officers to feel interest in its repeated use, since it does not quickly exhaust its possibilities and variants; it makes the student an active participant in the learning process. Due to its interdisciplinary nature, it allows tasks in multiple areas of knowledge.

### **Technological Charter of Multimedia**

#### I. General data of the product:

Name EgreMenSoft

Foundation:

The work with the Specialty of Minors constitutes today one of the fundamental edges worked and studied at national level, since it is one of the prioritized lines in our country for the reason of maintaining the relay from generations to generations in today's Cuba. Through research carried out, problems such as vulnerabilities are frequently detected, for such reasons it is necessary and essential to prepare the graduated officers who will work in the Specialty of Minors of the Ministry of the Interior in Guantanamo, in order to guarantee a better specialized training of these officers.

The multimedia is very useful to the graduated officers of the Specialty of Minors of the Ministry of the Interior because it empowers them with a vast source of knowledge on performance from which they can nourish for their specialized preparation, the formation of a general culture of knowledge, which is so necessary for the performance of their work; for the development of research lines, for the performance as a novel researcher and at the same time to develop skills with computers as a means of teaching, such multimedia favors the quality of learning.

### **Synopsis**

It is an interactive work environment for the study of a stage of the development of humanity; seen from different angles which will allow an efficient interdisciplinary work that helps to integrate the contents. The interaction will be carried out under a control of one or a group of officers graduated from the Specialty of Minors of the Ministry of the Interior in a developmental

learning environment, the observation and reading of a historical conditioning chart will be worked, which is supported by sound forms, or a flowchart of topics, which offer users flexible ways to build their knowledge; it offers the user a wide audible and visualized information about the different historical contents, thus as elements of the Specialty, conceives a range of exercises that supports the acquisition and development of an integral general specialized overcoming.

**Objectives:**

To contribute to the formation of a specialized superation with good quality.

To contribute to the development of the formation of ethical and esthetic results.

To develop habits and skills in the handling of interactive interfaces.

**Methodological strategy:**

To create a training system of the Specialty based on an audio-agnostic - motor approach.

Target Audience: Officers graduated from the Specialty of Minors of the Ministry of the Interior, anyone who wishes to learn about the Specialty of Minors.

**Prerequisites:**

**Technical:** Operating System: Win XP, Win 7, Win 8.1 and Win 10, with 64 or more Mbyte of RAM; 330 or more MHz; 16bits preferably 24bits in color and multimedia quality.

**Computer skills**

Familiarity of students with mouse and keyboard operation.

**Product Overview**

**Presentation theme**

Video or animation that presents the logo and/or title of the program in the center right area of the product that can be interrupted by the user at any time, also presents a group of animated Interactive objects that allow navigation to the rest of the program modules and the program output.

**Conclusions**

The development of the Multimedia EgreMenSoft contributes to improve the professional development of officers graduated from the specialty of minors, since it is applicable in the territory of Guantanamo and constitutes a useful tool to improve the development of officers graduated from the Specialty of Minors of the Ministry of the Interior, due to the advantages it

offers by creating a space dedicated to the development, scientific exchange and preparation of officers graduated from the Specialty of Minors.

## **Bibliographic references**

- Cabero, J., Llorente, M. y Román, P. (2004). *Las herramientas de comunicación en el “aprendizaje mezclado”*. Píxel-Cabrera, E. P. (s.f). *Aprendizaje colaborativo soportado por computador (CSCL): su estado actual*.
- Cabrera, E.P. (2006). *Aprendizaje colaborativo soportado por computador (CSCL): su estado actual*. Revista Iberoamericana de Educación. Pontificia Universidad Católica. Chile.
- Barreras, F. (2003). *Modelo Pedagógico para la formación y desarrollo de Habilidades, Hábitos y Capacidades*; Cátedra UNESCO en ciencias de la educación.
- Rosental, M. y Ludin, P. (1981). *Diccionario Filosófico*. Editorial Revolucionaria. La Habana, Cuba.
- Torres, P. (20016). *Retos de la investigación educativa cubana actual*. Aportes a su tratamiento.(Tesis en opción al grado de Doctor en Ciencias). La Habana.
- Toro, M. del y Castellanos, (1997), *Sistema diagnóstico para la evaluación de la efectividad del software educativo. La prueba en la escuela*. XIII Simposio Internacional de Computación en la Educación, Libro de memorias, Sociedad Mexicana de Computación.