

Improvement of the subject Informatics of the National Education System of Cuba

**Sc.D. Arellys García
Chávez**

Professor

Ministry of Education

**B.Sc. Juan Alfonso
Fernández González**

Advisor

Ministry of Communications

**M.Sc. César Ramón
Labañino Rizzo**

Professor

Ministry of Education

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Improvement of the Cuban National Education System

- Currently Cuba is involved in the **third improvement process** of its National Education System
- The first improvement process was implemented between 1976 and 1985, and the second between 1986 and 1990.



Some of the main commitments of the third Improvement of the National Education System

- The General Education includes the early childhood.
- Curricula: Comprehensive, Flexible, Contextualized and Participatory.
- Educational inclusion. Work with the rural sector.
- Permanent consultation with the various factors of society.
- Systematization and introduction of major scientific results.
- Emphasis on teaching Civics, English and **ICTs**.



Informatics subject

It was **introduced** in the primary education program **in 1986**.

Today it is present in all levels and all grades with a total of **622 hours**:

- Primary School 234
- Secondary School 183
- Pre-University 206

It intervenes in the teaching-learning process:

- **As an object of study**
- **As a work tool**
- **As a means for teaching and learning**

And for the faculty is also an **educational management tool**.



Why improve the informatics subject?

- The concept of ICT was generally limited to the informatics subject.
- The curricula was based on the mastery of tools without a cultural component on the history and state of the art of the discipline.
- The computer was the only ICT device of interest.
- Ergonomics problems in terms of attention to diversity and age groups.
- Programming appeared somewhat uncertain only in grade 12.
- The Pre-University level did not meet the needs of higher education.
- To develop competencies in **computational thinking**.



Contents of the new informatics subject in the different levels of education

PRESCHOOL

Early Childhood (5 years old)

- Collection to Play (12 computer programs, result of a research project).
- Aimed at children from four to six years of Preschool and Special Education.



Contents of the new informatics subject in the different levels of education *(cont.)*

PRIMARY SCHOOL - FIRST CYCLE

1st grade (6 years old)

- Knowing the device (parts and basic functions of computing devices).
- Playing I learn (interaction with educational software and multimedia resources).
- Playing and painting (Using a paint software for children).

2nd grade (7 years old)

- Painting and Writing (Children's graphics software and word processor - *Tux Paint* and *OOo4Kids*).
- Playing and writing (Educational software and word processors).
- ICT in the world around us (brief history of ICT, Internet and some of its services, ICT devices: digital camera, smart phones, tablets, computers and their types).

Contents of the new informatics subject in the different levels of education *(cont.)*

PRIMARY SCHOOL - SECOND CYCLE

3rd grade (8 years old)

- Playing and learning (Educational software).
- We continue painting (Irregular figures with the paint software).
- Learning to write more with my computer (Working with the word processor).
- I have fun on the playground (*ScratchJr*).

4th grade (9 years old)

- Playing (Educational software).
- Knowing more the word processor.
- I'm still learning with *ScratchJr*.
- ICT in the world around us.



Contents of the new informatics subject in the different levels of education *(cont.)*

PRIMARY SCHOOL - THIRD CYCLE

5th grade (10 years old)

- Recognizing the work area and writing. Drawing, animating and dialoguing. Creating games (*Scratch*).

6th grade (11 years old)

- Consolidating what has been learned.
- Knowing more about digital presentations (*OOo4Kids*).
- Drawing and animating (*Scratch*).
- Calculating on my computer (*OOo4Kids*).
- Knowing more about ICT (*ICT Resources*).



Contents of the new informatics subject in the different levels of education *(cont.)*

SECONDARY SCHOOL

7th grade (12 years old)

- Entering the world of ICT (ICT in the contemporary world, computer systems, educational software, network of devices, Internet and the Web).
- Controlling the device (Operating System). Processing documents (Word processors).

8th grade (13 years old)

- Presenting ideas (Presentations with slides, conceptual maps, time lines and organizational charts).
- Calculating and Graphing (Spreadsheet).
- The Web. Web pages (Elements of the HTML markup language).

Contents of the new informatics subject in the different levels of education *(cont.)*

SECONDARY SCHOOL

9th grade (14 years old)

- Solving problems using the computer (Elements of programming logic).
- Recognizing the work area and managing projects (*Scratch* level 2).
- Drawing, animating and dialoguing.
- Programming events and threads.
- Solving problems.



Contents of the new informatics subject in the different levels of education *(cont.)*

PRE-UNIVERSITY

10th grade (15 years old)

- Static multimedia resources (Image processing. Photo retouching).
- Continuous multimedia resources (Sound and video processing, animation).



Contents of the new informatics subject in the different levels of education *(cont.)*

PRE-UNIVERSITY

11th grade (16 years old)

- Studying in depth the ICT (Networks, -implementation, configuration and services-, Internet -concept, services, social impact-, searchers and navigators, Web 2.0 -Blogs, Wikis and social Networks-).
- Managing databases (Related concepts, creation and reports).
- Introduction to Programming (Elements of programming logic, Algorithms, elementary concepts of structured programming and elements of object-based and event-driven programming).

12th grade (17 years old)

- Bibliographic managers (*EndNote, Zotero*).
- Elements of e-learning (*Moodle, Chamilo, Opale, etc.*).

For more information:

Sc.D. Arellys García Chávez

Professor

Computer Software and Audiovisual
Media Enterprise (Cinesoft)

Ministry of Education

Republic of Cuba

Email: arelysg@cubaeduca.cu
arelys20021976@gmail.com

Tel.: +53 55295886

M.Sc. César Ramón Labañino Rizzo

Professor

Computer Software and Audiovisual
Media Enterprise (Cinesoft)

Ministry of Education

Republic of Cuba

Email: cesarlr@rimed.cu
cesarinsted@gmail.com

Tel.: +53 52092932

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MINISTERIO DE EDUCACIÓN DE LA REPÚBLICA DE CUBA

Institutional website of the Ministry of Education of the Republic of Cuba

<http://www.mined.gob.cu/>



CubaEduca
Portal Educativo Cubano

Educational Portal of the Ministry of Education,
coordinated by the National Directorate of
Educational Informatics

<http://www.cubaeduca.cu/>

Official statistics of Cuba (National Bureau of Statistics and Information):

Education: [http://www.one.cu/aec2016/18 Educacion.pdf](http://www.one.cu/aec2016/18_Educacion.pdf)

ICT: [http://www.one.cu/aec2016/17 Tecnologias de la Informacion.pdf](http://www.one.cu/aec2016/17_Tecnologias_de_la_Informacion.pdf)