

Teaching information technology in general education: challenges and perspectives

Valentina Dagiene

dagiene@ktl.mii.lt

Institute of Mathematics
and Informatics

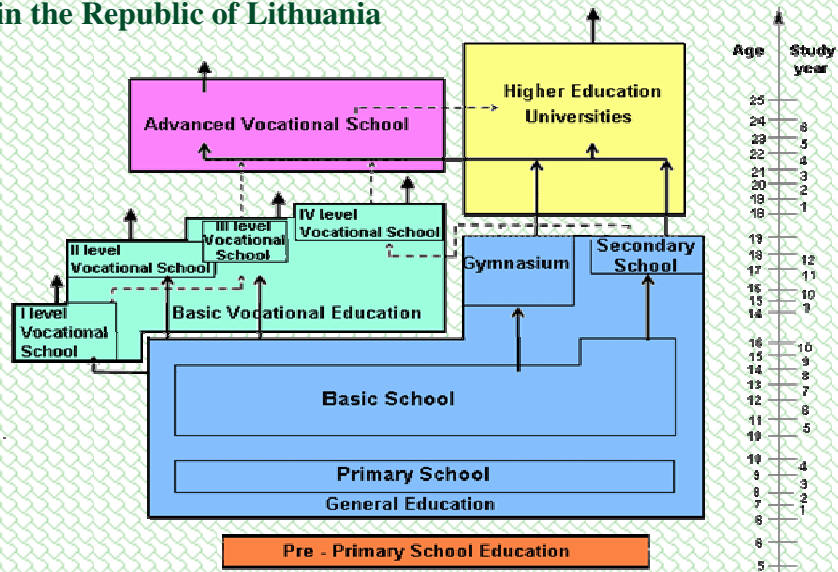


Lithuania – LIETUVA



- **Territory** – 65 300 km²
- **Population** – 3.5 mln.
- **Lithuanians** – 83%
- **Language** – Lithuanian, belongs to the group of Indo-European
- **Capital** – Vilnius: 576 400
- **Borders:** with Latvia, Belorussia, Poland, Russia and Baltic sea

The Educational Structure in the Republic of Lithuania

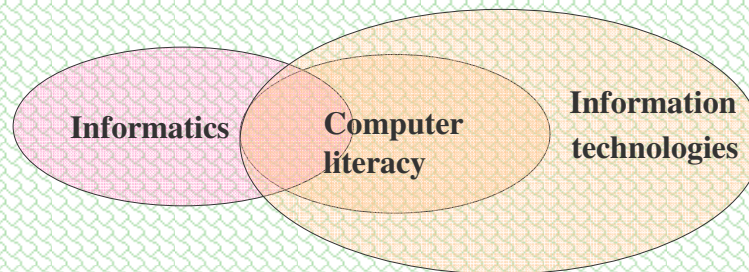


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3

Informatics is defined as the science dealing with design, realization, evaluation, use, and maintenance of information processing systems, including hardware, software, organizational and human aspects.



IT is defined as the technological applications of informatics in society. **ICT** means the combination of IT with other, related technologies.

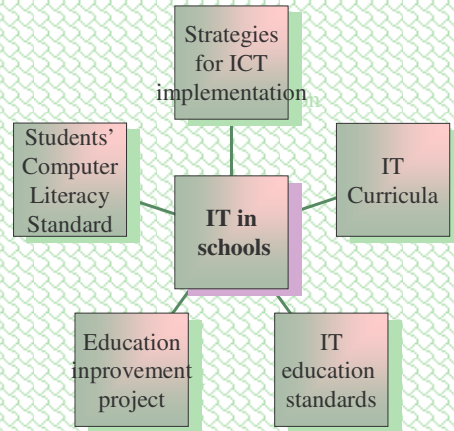
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4

ICT implementation in general education



Education Improvement Project 2002–2005

- **Component A: Improvement of teaching and learning conditions at basic schools**
- **Component B: Quality management of education**
- **Component C: Energy efficiency**
- **Component D: Optimization of school network**

Financial support: the government of Lithuania, World Bank loan 1.1 mil. euro

Component A. Improvement of teaching and learning conditions at basic schools:

Main objectives

- Developing a long-term **program of training for teachers**, heads and school teams involving municipality education sector officers
- Creation of a **virtual learning environment** at schools
- Provision of schools with **new teaching aids**
- Preparation and publication of **learning materials**
- **Co-ordination, support and management of the processes in schools**

Component A Improvement of teaching and learning conditions at basic schools:

Outputs

- Well-trained teacher' teams of 64 basic schools
- A Virtual Learning Environment with the content accessible to school communities
- New teaching aids
- Approximately 80 teachers' trainers

Strategies and Programs for ICT implementation in education

- A first fundamental Strategy for introducing ICT into Lithuanian education was elaborated in 2000
- Second Strategy was developed in 2004 (for 2005-2007)
- **Impact:** the work of various institutions was coordinated and the funding was planned on the basis of the Strategy
- Based on the Strategy, Programme for ICT in education is developed and approved every year
- The Strategy is being revised every year: reviewed and modified

Strategy for ICT implementation in education: Stages for 2001–2004

- **Preparatory:** to establish necessary financial and legal structures, to create technical conditions
- **Informational:** modernizing libraries and expanding computer centres for teachers
- **Integration:** to foster computer literacy among pupils, teachers and the population
- **Networking:** the expansion of network infrastructure and the use of telecommunications

Strategy for ICT implementation in education: Goals for 2004–2007

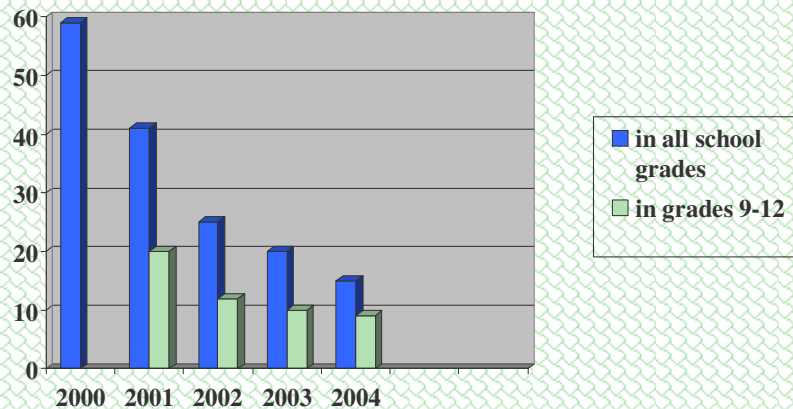
- To make breakthrough of ICT implementation in school teaching and learning
- To create educational computer network – well-stocked electronic space designed for teaching and learning as well as nurturing the conditions for modernization of education management and communication between school societies
- To improve all inhabitants' computer competence helpful for solving the problems of social imparity

Main principles of Strategies for ICT implementation in education

ICT must be introduced on the basis of the principles:

- **equal opportunities** and municipalities' stimulation
- **combining centralisation and decentralisation**
- developing **network infrastructure**
- **to concentrate on research:** the implementation of teaching software, teacher in-service training, implementation of students' computer literacy standard, effectiveness of distance learning

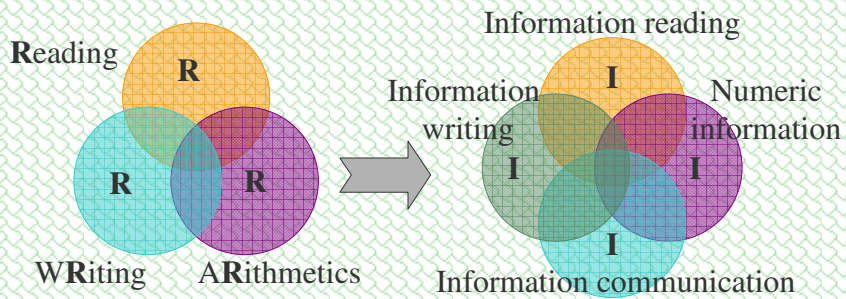
The pupil-to-computer ratio in Lithuanian schools



From Informatics to Information technology (IT)

- The major developments of educational reforms in Lithuania occurred in the field of curriculum development
- The new curricula and standards seek to strike a balance between knowledge and applications
- The main aim of teaching IT in general education is to develop students' **information culture** (literacy) in a broad sense

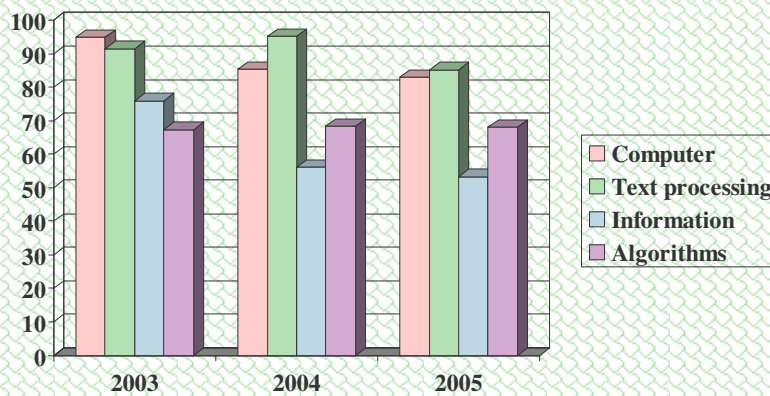
Information culture



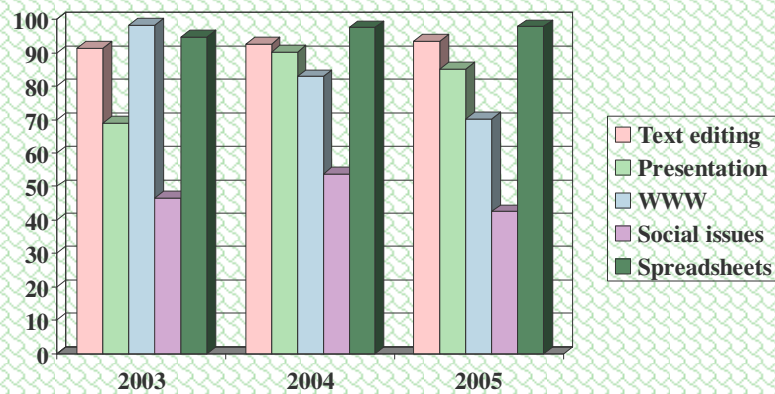
Contents of IT subject curricula

Compulsory course, 9-10 grades	Compulsory course, 11-12 grades	Advanced (optional) course, 11-12 grades
Computer (principles of the work)	Advanced elements of text editing	Data base
Text processing	Presentation	Multimedia
Information (basics of information handling)	WWW and electronic mail	Programming
Algorithms (main concepts and commands)	Social and ethical issues of using IT	
	Spreadsheet	

How do you evaluate the content of IT for 9-10 grades? Results of tutors' survey



How do you evaluate the content of IT for 11-12 grades? Results of tutors' survey



Future Directions of IT Implementation into Education

- The major developments of educational reforms in Lithuania occurred in the field of curriculum development
- The IT curriculum for 5th and 6th grades has been elaborated (68 hours)
- Besides this, 34 hours of IT training should be integrated into different subjects

Distribution themes and time for 5-6 grades

Themes, subthemes	IT hours	Subjects, integration is addressed to
Introduction to computer programs	10	
Principles of computer use	6	
Drawing with computer	4	Art; 10
Text and keyboard	14	Lithuanian; 10
Internet and electronic mail	10	Lithuanian; 4
Projects with Logo	24	

Conclusions

- Informatics has been changing to practical-based activity, which pays main attention to IT
- Firstly, it can be a separate part of the course intended to form the most general information skills and knowledge
- Secondly, the course can be regarded as a component of all subjects
- Thirdly, there can be some specific and deep knowledge of professional informatics and ICT

Conclusions

- IT course emphasizes three main parts:
 - 1) information search (Web)
 - 2) text layout (text processing)
 - 3) work with numerical data (spreadsheets)
- These are the things that should draw the main part of IT school course compulsory for all

Thank for your attention

Valentina DAGIENE
Institute of Mathematics and Informatics
Lithuania

dagiene@kti.mii.lt