



# GoDigital - Integrating mobile learning and upgrading teachers' digital skills: A tool kit for effective in primary school

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Intellectual Output 1: The Digital Competence Framework for primary schools

P2 – PDE Crete



## 1. The utilization of ICT in Primary Education

### The utilization of ICT in Primary Education

The rapid development of Information and Communication Technology has led to a new reality in all sectors of life. Hence, the need to adapt the educational process to the challenges of this new reality renders necessary the integration of ICT at all stages of the educational system, so as to be able to meet the contemporary demands for education and training and the rapid developments of the market. The introduction and utilization of ICT in modern school has induced dramatic changes in the educational system. The traditional school which was based on the teacher as the sole master of information and knowledge, transmitting it to the student, is transformed to a new type of school. In this new school the role of the teacher is associated with that of facilitator, counselor, guidance provider to the students who gain knowledge and information by means of computer and the New Technology, functioning as researchers, guided by the teacher and being able in this manner to cultivate their skills and particular characteristics.

The idea of interaction on which New Technology is based offers the students the chance to participate along with their teacher in the designing of the educational activities and express freely their perceptions and emotions. Moreover, the appropriate psycho-pedagogic school environment is fostered allowing the communication between the class members within the framework of an equal relationship, interaction and feedback.

The speedy development of ICT leads to societal changes in a very fast pace and the school must be able to keep track of this development and adapt to the new rhythms. In order for this to be achieved, it needs to be supported by all the relevant bodies, so that ICT could be utilized in the most expedient way and improve the educational process. Primary school students need to be trained in the most appropriate and methodical way, so as to be able to face the societal challenges. According to Eurydice data on the use of ICT in Primary education, ICT is part of the students' curriculum almost everywhere in Europe.

### General Goals for Primary School

ICT in Primary school can be utilized as:

☐ Cognitive-Discovery Tool: use of open source software of discovery learning for primary school. This software can take the form of interactive multimedia,

simulation, educational games, modeling etc., allowing the students the possibility of discovering real or fictional situations, in accordance with their maturity level facilitating the development of creative and discover learning. The computer becomes the means for development of activities and organizing knowledge and skills.

☐ Visual aid Teaching tool in basic teaching subjects: effective use of computer with a software of broad usage (painting, word processing, excel) which will be integrated into the framework of teaching basic subjects, like Language, Writing, Mathematics, creation and development of skills in art and group activities.

☐ Communication Tool and Information Searching: Use of data bases for information searching, use of the nets for communication with other students.

☐ Computational Literacy: familiarization with the basic functions of a computer: memory, information processing, communication, within the perspective of technological literacy and recognition of the potential of computational technology..

Within this context a basic goal for primary school students is for them to understand the main principles underlying the use of computational technology in important human engagements within the framework of various educational activities that students perform with the use of computer. In reality, a very important factor to be taken into account is the fact that students at this age become familiar with the use of computer with no particular effort. The secondary goals are for students to become acquainted with the basic ICT concepts, to get to know the computer and the rest of its units so as to grasp their usefulness and recognize the potential of computational technology, to become familiar with the use of general purpose software, whereby the computer is part of the teaching process of basic subject matter, to be able to seek information on the internet or other sources of information, to co-operate for performing team work activities, to discuss and express their thoughts.

The Particularity of teaching Computer Science in primary education and its combination with other taught subjects.

Computer science by its nature cannot be separated from other teaching subjects.

The diffusion of Information Technology in teaching other subjects in primary school has as its basic goal the utilization of ICT as a means of communication and information searching and as a visual teaching aid for the purposes and objectives of teaching, thus significantly influencing the teaching process.

The use of computers in the everyday educational practice has brought about important changes in the teacher-student relationship, as the new way of teaching and the whole teaching process changes from being traditionally teacher-centered to a new one more student-centered, with students adapting to a novel learning

environment, which is characterized by a climate of communication, cooperation and exchange of ideas and opinions with the use of New Technology.

The frequent use of Computer Science Labs enhances in a dynamic way teaching of every other subject, improving the quality of the educational process, through the use of appropriate teaching material-software and upgrading flexibility in the application of teaching methods. Moreover, it contributes to the interdisciplinary approach of knowledge and the application of active methods of learning, giving the opportunity to adapt the curriculum to new modern methods. It develops students' general abilities, enhancing the willingness for actual participation in class, activating their curiosity, since as proven, the computer is the most attractive means due to the potential offered for direct student access to information, stimulating in this way the interest of the majority of the student community and creating an environment of creative, discovery and experiential learning. Of course, the teacher has to train students so as to exhibit a critical stance towards the information, to check the various sources and understand their content having as a primary aim to secure quality in this new educational process.

#### Familiarization of the school community in primary education with ICT

The utilization of new technologies with the introduction of methods of active learning promotes discovery learning, enhancing the development of internal motives while at the same time it introduces more flexible processes when it comes to teaching each school subject. Hence, it offers students the chance to broaden their horizons at all levels of learning.

Despite this, there has been a notable retardation in terms of applying and developing methods with the use of New Technologies. This delay is mainly attributed to the lack of knowledge of New Technologies on the part of primary education teachers and their potential to offer in the process of teaching and learning. It is worth noting that there is a large group of primary school teachers who protest because they are not allowed to use the school computer lab in the educational process. The reason for this denial of access that head teachers usually bring forward is usually fear of a potential dysfunction of the computer

equipment. Additionally, some principals ask teachers to be certified in the use of ICT so as to be allowed to use the school lab.

There is also a part of teachers that strongly react to the use of ICT at all educational levels, either because they exhibit a stance of futile conservatism, expressing the belief that ICT can hinder the “authentic” or “by the book” teaching, especially when it comes to humanitarian subjects or because they themselves are not familiar with ICT and are reluctant or do not have the time to become involved in a process of continuous professional development and training, claiming that ICT is suitable only

for administrative matters. Furthermore, it has been noted that some of the teachers, mainly those belonging to a generation that never used computer for personal or professional reasons, while admitting the advantages of using ICT in the educational process they are still reluctant to change or modify the traditional way of teaching, because they feel weak and vulnerable in front of their students, for fear of losing the class control.

The introduction and the use of New Technology in contemporary school is enhanced by the willingness for cooperation between teachers and students in the educational process. Of course, an important prerequisite for the appropriate usage of New Technologies and means of Communication in the educational process is the suitable and methodical preparation of the educational community in its entirety at all levels. Moreover, the continuous, administrative and technical support of the educational community is necessary, as New Technologies belong to a constantly developing field. This parameter of course involves the analogous financial cost. The state efforts to equip all schools with computer labs should be positively viewed by the educational community and by no means should it create inequality among students of different schools due to the potential difficulty encountered by some teachers to make use of this infrastructure. Therefore there is an imperative need for continuous training of all teachers on New Technologies and the creation of new educational activities that will make effective use of them, aiming at the improvement of the teaching quality and the transmission of knowledge. Finally, all the University Teachers’ Training Departments should include more computer science courses in their curriculum, so as to offer the future teachers the ability and the experience to use New Technologies and pedagogically make use of them in as many subjects as possible.