

Information Technology in the Czech Secondary Schools

Božena (Boba) Mannová

Department of Computer Science and Engineering

Czech Technical University in Prague

Karlovo náměstí 13

CZ 121 35 Praha 2

+420 2 311 79 04

mannova@cslab.felk.cvut.cz

ABSTRACT

This paper describes the situation in use of computers in the secondary schools in the Czech Republic. The overview of historical development is given and the current state is discussed. There are formulated some questions, which have to be answered. Strategies for teachers in service education are described.

Keywords

Information technology, teachers education, computer use, CHI

HISTORICAL BACKGROUND

The use of computers in education always followed a development of information technology:

- The end of the sixties was typical for the technical base of electronic data processing. Students (mainly in universities) were acquainted with the principles of computing machines.
- The seventies emphasize algorithms and active use of programming languages. The main motto of this epoch was „Every Czech should be a programmer“.
- The eighties preferred the user's access to computers. Computer literacy for everyone was the main aim of the people interested in computers.
- Current practice integrates computers in schools into all subjects, also called the „Information technology cross-curriculum“.

CURRENT STATE

In 1986, it became compulsory for secondary schools in the Czechoslovak Republic to teach a one year subject Information Technology for all students. The schools were badly equipped to do so at that time and there was a distinct shortage of teachers trained in computer science.

The situation has changed dramatically since 1990. The schools are now better equipped and there are specially educated teachers. There are secondary schools all over the Czech Republic, which have not only good computers in reasonable quantity, but they have connection to Internet. But the most of schools in the Czech Republic have not yet this opportunity. There are two reasons for it:

- There are still not enough well prepared teachers.
- There is not enough financial support for these activities.

We consider the first reason as a crucial one, so we have to focus on teacher pre-service and in-service education.

SOME QUESTIONS

In these days there is no question whether to give pupils and students opportunity of interaction with computers at schools or not to give it.

But there are another questions:

what, how, whom, whereby ...

What to teach?

- Algorithms and programming with classical programming languages
- Algorithms with software packages and which ones
- Algorithmic thinking „hidden“ under other activities

How to conceive a way of teaching?

- To handle many different functions of computer machines
- To master many software products
- To apply some computer application on a particular part of certain subjects
- To find some areas in the educational process appropriate for computer processing

When to start with computer education?

- What age of learners
- Frequency and period of learning
- In what subject

Whom offer the computer education?

- To all students in all subjects
- To students of Information Technology
- To teachers of Information Technology
- To all teachers
- To pre-service teachers
- To in service teachers

Whereby - to chose the proper tools?

- Type of technology
- Type of CHI
- Type of software

All these questions could not be discussed separately. They are complex. All have to be integrated and the answers are sophisticated, not simple.

STRATEGIES FOR TEACHERS IN SERVICE EDUCATION

The computers can be a catalyst for change in teaching and learning, but pedagogical issues are still being explored. Only if in-service support can focus on these issues and support the strategies required to achieve a new perspective computer can deliver their promise. Information technology also behaves differently from other subjects which is disorientating for teachers. The concepts of progression and the increase of experience with age are challenge when a teacher is faced with a pupil who is clearly more able and better resourced in this field. This undermines the authority of teachers.

Resourcing is a problem as teachers are not usually given computers as part of their job. Without the tool, teachers can feel deskilled. Reading and writing skills are no longer adequate. As well as academic literacy, professional teacher must master computer literacy, network, media literacy and all based on CHI.

We are trying to develop a range of innovative strategies to increase the opportunities for in service education for teachers, putting the teacher first, not just in increasing their professional development opportunities to develop skills, but also in feeling confident in the judgments they must make about the role in of advanced technologies in society.

The goal is to create responsive and information-rich learning environment for teachers. The focus have to be on some basic problems as:

- To study effect of technology on curriculum development and teaching methods.
- To determine techniques for on-line workplace training and life-long-learning.

- To define knowledge and skills required for students and teachers.
- To train teachers and students in project based, service-driven learning.
- To develop a virtual community linking teachers to information technologies.

CONCLUSION

For societies like one in the Czech Republic that have been isolated from developments outside the Eastern Block, there is the great hope that the Internet will help to break down international barriers of status, class, politics and continents. The optimistic approach to human endeavor in world will depend on partnership between the makers of new technologies, the sellers, the politicians and the educator. These partners attitudes could be nurtured that will map the creation of "a brave new world" where politics, economics and social well beings are shared responsibilities, rather than free market accidents or dictatorial precepts.

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