



## TEACHERS AND USE OF INFORMATION TECHNOLOGY IN EDUCATION: DIFFICULTIES AND OPPORTUNITIES

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**Abstract:** *This paper would present problems and possibilities that teachers meet during applying information technologies in their professional carriers. Opportunities and difficulties that technologies enable teachers, to improve their professional development, teaching and learning, and dealing with daily tasks with use of computers, will be shown.*

*After that we can see results of research, how much and for what teachers use computers for previously noted in practice, what troubles they meet and what are possibilities for their removal.*

**Key words:** *information technology, distance learning, opportunities and difficulties applying technology, high school*

### 1. INTRODUCTION

Throughout the last several decades of the twentieth century, our country had stagnated in educational development, with drastic negligence of the educational institutions and the entire educational system. Main tasks of a quality and efficient educational system involve providing all the necessary terms for the development of the individual potentials of all users, valuation and cherish of independent, social, personal, and ethnic integrity of each individual, community, and a group.

In context of technological and marketing terms changes, educational systems are forced to provide increase of the educational efficiency through - decreasing of studying durability, faster matter update, providing constant availability of data and information, individualization of courses, etc.

Increase and improvement of educational and learning process efficiency can be realized by the development of new educational models with the use of information technologies. Information technology becomes a means for disrupting existing practices and for creating a new way of schooling rather than becoming an accouterment to the existing practices (Herdman, 1988).

Professor's capability of the efficient use of these technologies is necessary for the proper education of the students.

Question that appears on its own is: How should teachers use the technology with as much efficiency as possible? Efficient use of new technologies requires that teachers not only have access to the technology but to have possibility to reveal what are its potentials, and to learn how to use it and to experiment with its diverse applications.

### 2. TECHNOLOGY IN EDUCATION

With appearance of new technologies (photography, film, radio, television) teachers have got greater opportunities for showing ideas in different ways, while presenting new materials and thereby motivating students to learn. Process of implementing new technologies was never so fast. Although teachers want to use all available tools in order to help their students to learn, new technologies have become more and more complicated, making transition to them very difficult, because they require a lot of training before the teachers can efficiently implement them. Teachers must have substantial

time if they are going to acquire and, in turn, transfer to the classroom the knowledge and skills necessary to effectively and completely infuse technology into their curricular areas (Brand, 1997).

When speaking of technologies in education, we often think about the improvement of the educational processes with the help of technology. While attention to choosing the appropriate hardware and software for the classroom is prerequisite, it is the skill and attitude of the teacher that determines the effectiveness of technology integration into the curriculum (Bitner, Bitner, 2002). Also, it is very important to note the emphasis on influencing learner motivation, not controlling it. Systematic motivational design has been shown to be effective when used properly and within the boundaries of modifiable influences on learners (Keller & Suzuki, 2004). Students need guidance and support before and during their studies. This is especially true in the digital age when students need to be skilled computer users and able to deal with different types of media in order to study effectively. (Seppo, 2006).

However, implementation of technologies in education is characterized with potentials as well as with barriers.

#### A. Education and Technology: Potentials

I. Potentials of technology use in education are:

- 1) Changes in teaching: technologies are used as help and support for teachers or working groups;
- 2) Support in realization of daily tasks: making of preparations for classes, following of student's progress, communication;
- 3) Possibilities for increase of professional development: "Just in time" training and support, regular courses and advanced degrees, informal educational possibilities;
- 4) Preparing / training of new professors: models of effective learning, computer video simulation and case studies, electronic network.

#### B. Education and technology: present barriers

Barriers that show during implementation of new technologies:

- 1) Professors need time to: experiment with new technologies, share their experience with other colleagues, plan and correct lessons using new methods involving new technologies, etc;
- 2) Accessibility and the price of technology.
- 3) Vision for the rational use of technology: school must have a plan, and professors must clearly see the advantages of using the new technology in courses;
- 4) Training and support.

### 3. RESEARCH

In an attempt to see if teachers of the Technical course are using the computers, how often and for what purpose, we executed an Inquiry in 7 elementary schools (3 in Zrenjanin, 1 in Macvanska Mitrovica, 1 in Zasavica, 1 in Knezevac and 1 in Novi Sad), in which 18 teachers participated.

These are the results:

*Question: Do you know how to use a computer*

*Answer: 66,6 % said Yes, and 33,3 % said No.*

*Question: Did you attend some course to learn how to use a computer? Answer: 83,3 % said Yes, and 16,7 % said No.*

From those who attended a course: 16,6 % went on their own; 66,6% was sent by their companies; 16,6 % was trained on colleges during their course of study.

From all the professors questioned, 50% had a computer at home, from which 16,6 % used a computer every day, 16,6 % 2-3 times per week, 66,6 % once a week. Computers are mostly used for: entertainment (games), communication (e-mail, chat rooms, etc.), lessons preparation, surfing on the internet. Distance learning was not once mentioned.

*Question: Does the school have a classroom with the computers, yielded the following results:45% the school has such classroom, 55% the school does not have such classroom (Figure 1).*

66,6 % of the professors use these classrooms; 44,4 % of the professors don't use these classrooms for teaching.

*Question: Are you familiar with possibilities of computer usage in teaching? 94,4 % answered Yes; 5,5% answered No*

For preparing classes, most commonly used information sources are (sorted by frequency of use): books, TV and radio programs, expert magazines, courses and seminars, magazines and daily newspapers, community, internet, electronic books and journals.

Mostly used mediums for information transfer for classes are: voice, models, video and TV, projectors, panels, radio or tape recorders, computers.

Most commonly used ways of communication and contact with parents and other professors are: direct communication, written communication and home phone. Other methods that were not mentioned, such as the mobile phone, fax, voice mail, or e-mail, are generally not used.

*Question: Do I use the computer and other information technologies enough for? (Figure 2)*

a) Preparing lessons: enough 33,3 %; not enough 66,6%

b) Lessons realization: enough 11,2 %; not enough 88,8%

c) Professional development and improvement: enough 16,7 %; not enough 83,3%

Barriers that appear during usage of computers and other new information technologies are:

- lack of suitable courses for training and lack of support in further use
- not enough time for attending workshops or training courses
- accessibility and price of computers, software, and accompanying equipment
- not clear enough of a vision of the actual opportunities that new technology provides in teaching
- not enough time for tracking fast technology development
- not enough time for experimenting with new technologies

Following suggestions for removing those barriers were made by the questioned professors:

- organizing courses and training for the professors
- more computers in schools
- more practical work on the computers
- economic situation should improve especially for youth
- better equipped computer classrooms

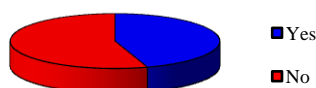


Fig. 1. Answer on the question: “Does the school have a classroom with the computers?”

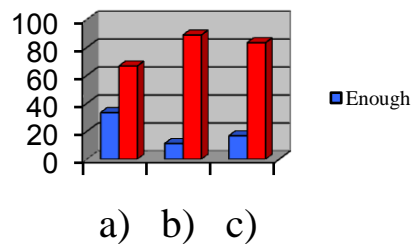


Fig. 2. Answer on the question: “Do I use the computer and other information technologies enough for?”

Inquiry participant's most frequent comments on the Inquiry and its theme were:

- everything is OK if there is something to work with;
- inquiry is good and it contributes to the possibility of greater use of the computers in education;
- inquiry is good, but mostly for younger colleges

#### 4. CONCLUSION

Based on the Inquiry results we can realize that the usage of new technologies in professional life of teachers is not applied enough. Although most schools have classrooms with computers, and the educational program for the Technical course contains themes from informatics which should be realized on the computers, 44,4 % of the inquired professors do not use these classrooms, while one third doesn't even know how to use a computer.

The lack of the application of technology can be seen from the data which shows that even 66,6 % of the professors believe that they **do not use the computers enough** for preparing lessons, 88,8 % lack the computer usage for realization of lessons, and 83,3 % lack its usage in professional improvement and development.

Largest barriers that appear in application of the new technology are: the insufficiency of suitable courses for training and the lack of support in further use, not enough time for attending workshops or training courses, accessibility and price of computers, software, and the accompanying equipment, lack of examples which will show real advantages of technology use for the professor's professional needs. Suggestions for removing of those barriers include organizing computer trainings for the professors, as well as organizing the courses with real live examples which will present advantages of new technology use.

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