

Using multimedia techniques for teaching in schools in Western and North-Western Romania. Realities and training perspectives

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ABSTRACT: Using multimedia techniques in asserting teaching lessons, is a primary objective for the European Union, and for our country, in the perspective of developing a knowledge based society. This article presents a few benches-marks regarding the implementation of multimedia techniques within teaching activities in the Western and North-Western area of the country, and the need for training teachers in this area.

KEYWORDS: Information and Communication Technology, multimedia techniques, teaching process, computer skills.

Introduction

A better efficiency for the human resources in education, by improving personnel skills in using interactive teaching methods – teaching and ICT (Information and Communication Technology) and the acquisition of necessary key competencies and professional skills by students in order to get involved in research in the connected areas of the studied subjects – are all priorities at a local, regional, and national level. The new perspective, generated by using multimedia techniques in the educational process involves training teachers in utilizing the latest technologies in their teaching, learning and assessment activities, a process that needs to take

place in an organized environment according to particularly identified training needs for the specific target groups.

For this purpose, within the project called „*Center for Training School Teachers in Multimedia Teaching Techniques*”, there was an online study which was done with the purpose of assessing the degree in which multimedia techniques are used in teaching activities in the Western and North-Western areas of our country. The studied population is formed by teachers in the fields of Mathematics, Informatics, Physics, Chemistry, Biology and other technology related subjects. The group had 379 participants, and the used research method was an inquiry by questionnaire. The data was acquired online, by a web interface, and the processing was done through SPSS.

The inquiry tried to assess the following aspects:

- Access students and teachers have to new technologies;
- Teachers' competency level in the Informatics field in the Western and North-Western areas of our country;
- Frequency of multimedia technology use in the teaching process;
- The way in which different types of schools are equipped with Informatics laboratories;
- Issues of different kinds that require interventions / solutions, but also human / technological / financial resources for the schools' level within the researched area.

Out of the desire to sketch a profile of future students, there was a specific set of questions introduced in the inquiries, in order to determine the following characteristics: age, gender, county and area of origin, years of experience in teaching, degrees acquired, the level of graduate studies, etc. This information represents a selection criterion for future students and offers School Inspectorates all sorts of details regarding teachers' profiles who need of training in this area.

By analyzing the data we concluded that teachers are not evenly spread in different counties, the highest distribution being in Timis county (34%), Hunedoara (22.2%) and Sălaj (14.5%). At the opposite end of the spectrum are Bistrița Năsăud (3.4%), Cluj (3.2%) and Arad (1.8%) counties.

Regarding the location of the schools from which most of the teachers come from, we concluded that most of them are in the urban area (88.1% of the investigated group), and according to gender distribution, we noticed a much higher number of female teachers (78.9%) compared to male teachers.

Most of the respondents are tenure teachers - 88.7% (the percentage difference is represented by qualified substitute teachers), who teach in high-schools (78.9%), and the degrees they have are as follows: *level I* –

71%, *level II* – 16.6%, *permanent teacher certification* – 3.4 and *beginner* 1.6%. From an educational point of view, most teachers have a Bachelor's Degree (44.3%), many of them also have a Master's degree (31.7%), several of them graduated from post-university courses (19.5%) and have PhDs (2.9%). From the point of view of the subject taught, there are more teachers who teach technical subjects (25.9%), followed by Math teachers (25.3%), Physics teachers (16,6%), Informatics teachers (15%), Chemistry teachers (7.9%) and Biology teachers (7.7%).

1. Teachers' access to new technologies

Most of the teachers included in the studies claim they have constant access to a computer (95.5%). 79.7% of them use it on a daily basis and 7.1% use it 4-5 times/week. (See Figure 1)

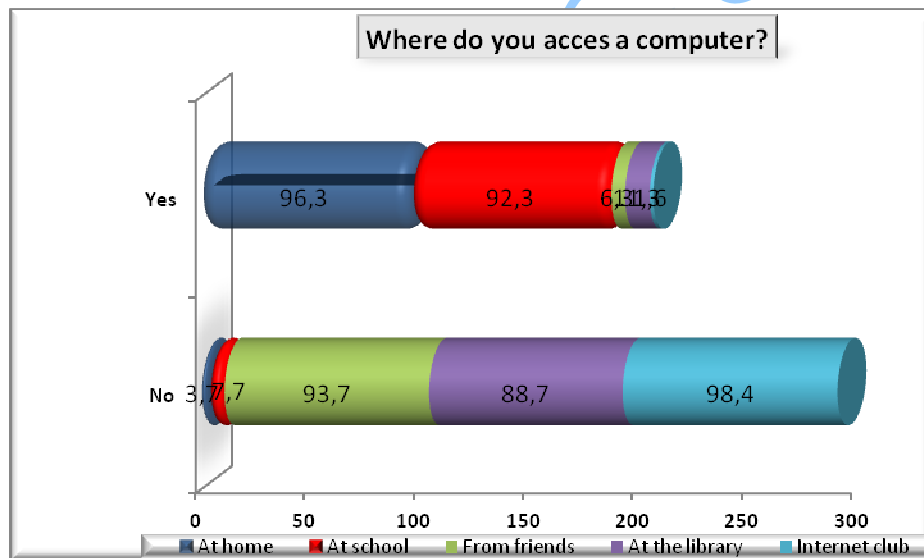


Figure 1

7.7% of the teachers use the computer 2 or 3 times/week, the lowest frequency for its use being once a week or a few times a month, with 1.6% of teachers at this rate. Most teachers use a computer from home (96.3%) or from school (92.3%).

2. Teachers' competencies in using a computer

More than half of the respondents claim they have good and excellent abilities in using a computer. The teachers who consider themselves with the most excellent abilities in using a computer are the Informatics teachers (68.4%), followed by those who teach technical subjects (39.8%) and then the Physics teachers (28.6%). At the opposite end of the spectrum we find Chemistry teachers (6.7%) and Biology teachers (3.4%).

Areas of competency with the highest scores are the following:

- Surfing the Internet, where 60.2 % of the respondents consider themselves having excellent skills and 27.2% consider themselves having good competencies,
- Using and filing folders, where 57.8% of the interviewees believe have excellent competencies and 23% think they have good competencies,
- Writing Word documents, 64.4% for those who believe have excellent competencies and 21.6% for those with good competencies;
- Creating and giving a presentation 37.7% - excellent competencies and 26.4% - good competencies.

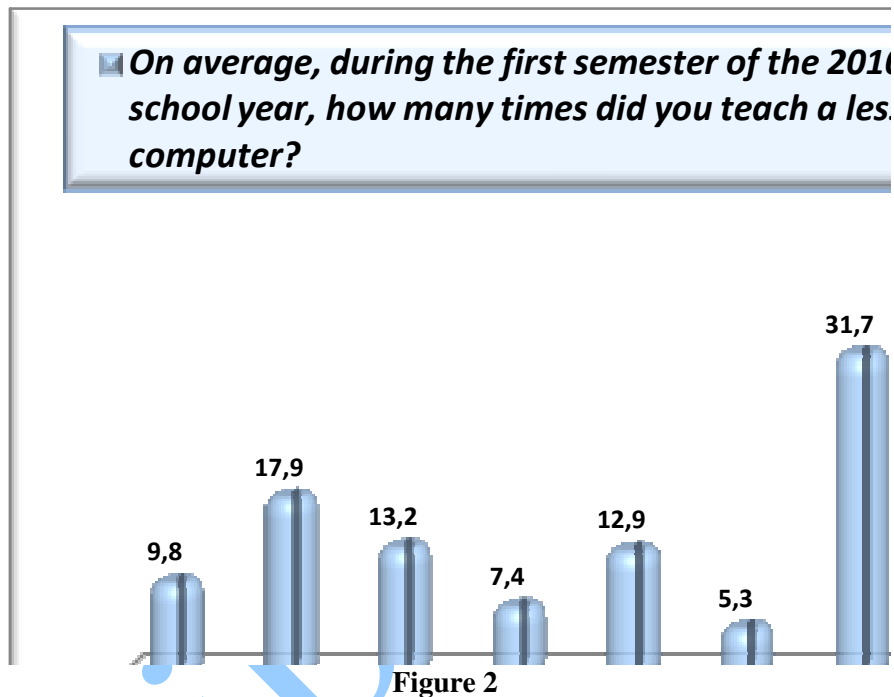
At the opposite end of the scale are the teachers who considered they do not possess the personal ability to create a web site, where more than half of the respondents consider they have minimal competencies in this area, in using SmartBoard, presenting graphs on Word and Excel, making lessons and tests in a particular form.

3. Using a computer in the teaching process

In almost all the schools included in the study, there are Informatics laboratories available and the computer is used in the teaching process. As we can notice in the graph below, the highest score is for the teachers who have used the computer in developing lessons more than 16 times during one semester (31.7%). The immediately following score (17.9%) is for the teachers who use the computer only 1 to 3 times during a semester. Almost 10% of the teachers claimed they have never used a computer in developing lessons. (See Figure 2)

During the last semester, the ones who taught most of their lessons using a computer were the Informatics teachers (89%), followed by those of other technical subjects (36.7%). The great difference in scores between

these two categories can be explained based on the specifics of the Informatics subject, for which the use of a computer is inherent. Teachers who used the computer the least in developing lessons (1 to 3 times/semester) were Math teachers (28.2%), followed by Chemistry teachers (20%) and Physics teachers (19%).



Also, the most teachers who have never used a computer in developing lessons are the Math teachers (24%), followed by Chemistry and Biology teachers (about 10% for each of these categories).

Most times, the lessons are taught in a common classroom, with a computer and a video projector (58.6%) or in the CES (Computerized Education System), with AeL (51.2%). A third of the teachers said they teach in a laboratory that is equipped with computers, where AeL is not installed (training system assisted by a computer).

The computers in schools are usually used by teachers, in order to create worksheets for students, informational materials, tables, assessment papers and for research to develop lessons. At the opposite end, there are the teaching-learning activities in CES (Computerized Education System), testing students and using educational resources (encyclopedias, image libraries, dictionaries, etc.).

The main difficulties in using a computer are the following: the Informatics laboratory is overloaded; there are not enough computers, there is insufficient educational software, and insufficient time to develop lessons or tests, and there are also difficulties in creating them.

4. Training needs in IT area

The spheres of interest in case of participating in an IT training program for the teachers included in the study are the following: for 84.2% of the respondents – developing lessons and tests in a particular format (using SmartBoard), creating a website (69.4%), graphics and image processing (69.9%), developing multimedia applications (63.9%), Geogebra – a dynamic software for learning (55.9%), class management and computer implementation in the classroom (55.4%), office automation (MsOffice: Word, Excel, PowerPoint), esthetics of multimedia products (29.8%), Internet research (22.2%).

Conclusions

In conclusion, we can say that for the two mentioned developing regions, teachers are quite interested in using multimedia techniques in the educational process. Most schools have laboratories that allow developing lessons using a computer, but unfortunately, there are too many teachers that don't use the facilities for teaching activities. A better training for teachers in this area, but also a wider interest in using multimedia techniques in teaching activities, would lead to better quality education and to an increase of appeal for classroom lessons.

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