

## eLearning in Primary School: Student Voices

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**Abstract:** *In Romania, at primary school level, electronic models may be tools that can develop creativity, can stimulate shy or introvert students, can improve the retention of new information by iconic representations, animations etc.*

*This paper is a summary of an extensive research on primary school students' attitude towards new technologies. Passing over the barrier of the scarce availability of software, our preliminary conclusion is that the valences and values added by the electronic tools tested by primary school students are needed in the near future both in Romania and in the Balkans area.*

**Key words:** *eLearning in primary school, spreadsheet, new technologies*

### Context

We live during the digital era: more than one million books are digitally published; the circulation of the printed newspapers and magazines has decreased, while the number of the on-line readers has grown; the Google Books scanner can turn into digital format one thousand pages an hour; sites such as MySpace, YouTube, Facebook, which did not exist six years ago, count together over 250 million visitors. In education, as well as in other major fields (business, health etc.), the computer must become a reliable partner for each person. The opportunities offered by technology nowadays can be exploited to get a better collaboration, higher performance, the cancellation of geographical borders or of the religious ones in education.

### eLearning in primary school

Professor Richard Mattessich from Berkeley University can be considered the starting leader to have implemented the *spreadsheets* (*tableur* in French) within the *Fortran IV* program (1961). Later, in 1987 the new programs with spreadsheets, such as *Excel* and *Corel Quattro Pro*, were marketed, having also the capacity to draw diagrams corresponding to the processed data. In 1995, after IBM bought *Lotus*, *Excel* became the leader on the spreadsheets market, being able to contain from 1 to 255 spreadsheets; after 2000 numerous software companies developed programmes which had the *spreadsheets* principle at their basis.

On the international level, the spreadsheets and the presentation sheets are supported and even applied in primary education because:

- they facilitate the transition from the numeric/verbal model to the symbolic one;
- the transition from specific/particular to general;
- the transition from concrete to abstract;
- the transition from the application of intuitive methods (non algebraic) to the application of rigorous school methods (algebraic) (Rojano, apud Haspekian);
- the spreadsheet power is so big that "using the spreadsheet, we can transform the routine of solving an arithmetic problem into a challenging maths inquiry in primary teaching" (Abramovich și Cho, 2008: 1-19);
- "the spreadsheets build an ideal bridge between arithmetic and algebra (...). The spreadsheets have become an important part for the differentiated curriculum of various levels of education" (Özgün-Koca, 2000: 3-4);
- in the teaching-learning process in England, "although they were not conceived as an educational instrument, they were used in maths lessons as soon as they became available" (Jones, 2005: 30).

The research results

This paper presents only<sup>1</sup> the attitude of the learning actors (pupils) in Romania toward several instruments, electronic models (as Jonassen calls them), which are considered to be necessary in primary teaching. We support the idea that the tested models can significantly transform the didactic activity to the level of collaboration and co-operation learning, of performance in learning.

The research basis has involved a pre-testing and investigation sample made up of 158 pupils distributed as follows: 58 – in the 2<sup>nd</sup> form (rural and urban), 56 – in the 3<sup>rd</sup> form, 44 – in the 4<sup>th</sup> form and 50 parents with children at primary school. Therefore, the answers of the questioned pupils can be summed up as follows:

- after the participation in maths classes which used such electronic models (spreadsheet and presentation sheet) the pupils:

- consider these lessons are much more attractive and interesting;
- want to have these models applied with other subjects in the syllabus;
- say that these models help them remember the new information more easily;
- want to have colours, sound, animation involved in the different moments of the lesson
- want to have their answers completed and automatically to be virtually rewarded;

- both the pupils and the parents consider, in majority, that it is useful and modern to implement such electronic models.

Taking into account the participative observations and the focus-groups that were formed, there were outlined the advantages generated by the utilization of the eLearning models. We will group these advantages on categories of beneficiaries:

▸ advantages of the eLearning models for the pupils:

- the pupil has the possibility to check himself/herself with the favourable or unfavourable answer of the computer;
- the pupil is visually and auditorily captured;
- the eLearning models encourage individual work;
- the pupils can revise the previously taught examples;
- they do not miss the explanations while copying from the blackboard in their notebooks (a very long time, because writing is slower during primary school)
- the pupils are much more motivated after having solved an exercise correctly or after having correctly answered to a question and the computer's immediately rewarding them;
- the heroes of their universe, present in the lesson, motivate, challenge, reward them;
- the time of perception, of understanding, of learning a phenomenon can be shorter;

▸ advantages of the eLearning models for the primary school teachers:

- it takes a big enough effort to write multiple examples on the blackboard, therefore the eLearning models reduce the solicitation of the eyes, of the hand;
- a single lesson can include several explanations;
- the teacher can be a trainer, a conductor of learning, being more concentrated on the process, not on the content of what must be taught;
- the children's enthusiasm and attention paid to the teaching-learning process motivate the teachers, too;
- the teacher can faster and better explain certain natural phenomena, abstract expressions or problems through microfilms.

▸ advantages of the eLearning models for the teaching-learning process:

<sup>1</sup> The paper is included in a research which questions the pupils, the parents but also the schoolmasters, teachers, principals, inspectors.

- the conceptual maps made for the complex lessons help both the teacher to teach and the pupil to learn new items of knowledge, to strengthen, to systematize them;
- there is no wastage of time (which happens during the classic lessons), everything unfolds in a rhythm which stimulates the pupils;
- the multitude of the helping examples, experiments, key words, microfilms are some of the important factors of the electronic lesson;
- there is a double guiding of the lesson: by the pupils and by the teacher/schoolmaster;
- one can revise certain less understood fragments;
- the development of the *problem-solving* process (one can change the numbers in the existent examples to get others which lead to better understanding).

### Conclusions

The sites containing teaching information and aids (such as the spreadsheets) are so unknown by the schoolmasters and even less applied in Romanian teaching. Beyond the issues of the computers endowment we can say that the popularity of the electronic instruments is at the lowest level and their almost absent utilization, while in other countries they use from the electronically personalized micro-sheets to the numerous types of games useful in the educational process. The maximization of the value of the electronic aids takes place only when the conductor of the class knows about their existence, how to use a browser and how to personalize them. That is why our research (theoretical and applicable) has reached the conclusion that such electronic models which are used in countries on the European, Asian and American continents are needed in primary schools.

We can say that the spreadsheet and the presentation sheet can also be of significant help to maths teachers in secondary schools, to teaching institutions managers, to children with learning deficiencies, to higher education teachers within the continual formation departments.

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**Докладът е рецензиран.**