

*Bulgarian Kindergartens on the Way to Change*

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Abstract

Described is a model of cooperation between a team of scientists, publishing house and a nonprofit organization, taking into account the specific conditions in Bulgaria. The existing system for preschool education of the publisher is upgraded through contemporary technologies integration and interactive way of work. The product developed is approved and implemented in real practice.

**Keywords:** Technologies integrated teaching and learning, ICT in Kindergarten, Interactive way of work, Educational resources

Technologies in education are quite modern and still very important thematic. New digital generation requires new environment, new methods of work and this leads to serious challenge in front of the contemporary pedagogy. From the other hand publishing houses, committed with educational process need to expand their traditional paper-based work with development of e-books, educational software and variety of e-resources for students and teachers.

Following the main goal – more motivating and effective learning process for 3 to 6 years old children – a cooperation between a team of scientists, publishing house and a nonprofit organization was realized.

The publishing house “Izkustva” is one of the leading publishers in Bulgaria in the field of preschool education and its system of work is one of the most popular in the country. The fundamental principles of the system are:

- An integrated approach to knowledge building (Bulgarian language and literature, mathematics, natural and social studies, art and music are thought in unity);
- Complete system for child’s knowledge and skills diagnostics;
- A rich set of didactic exercises and teachers’ resources such as worksheets for individual work, portfolio of the child, posters, music CDs, holiday calendars and more.

The nongovernment organization Education and Technologies Assoc. works in the field of education in direction of contemporary technologies integration and qualification of teachers on national level. The team of the organization is constantly looking for and offering technology solutions tailored to the real budget options in the country.

The Bulgarian system of preschool education has 130 years of history. Nowadays, the kindergarten is obligatory for all 5 years old children. There are two preparatory classes for 5 and 6 years old children – third and fourth grade in national Bulgarian Kindergarten system. Going to kindergarten in the first three grades is not compulsory – it is a question of parents’ decision and choice. The two compulsory grades aim in to ensure that all children will have an even start at the beginning of the first grade at school. In Bulgaria there are people from different ethnic groups, speaking different languages and having different cultural traditions.

We could outline the problem caused by discrepancy between parents’ expectations and real conditions at Bulgarian kindergartens. On one hand there is the new generation of parents and their children, expecting technologies-rich environment and an interactive approach of work. On the other hand we have a quite conservative and unchanging system in the kindergartens – old facilities, lack of interactive games, unwillingness in teachers and principals to introduce new technologies, lack of budget funds for major investments in modern equipment, low digital skills level, and routine way of work.

Taking into account the specific conditions in Bulgaria – from economic and traditional point of view – an educational product was developed by the authors. It is

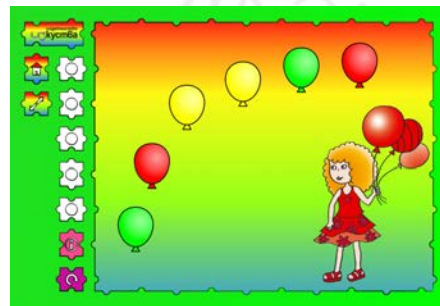
implemented into practice in partnership with the organizations mentioned above. The product is an educational package provided with necessary software, hardware and methodological guidelines for application.

The educational software upgrades the existing methodological system of work, developed and imposed into practice. It includes:

- Educational computer games;
- Multimedia situations on selected topics;
- Extensive collection of interesting interactive exercises;
- Detailed methodological guidelines for the educator.

The leading principles are:

- Interdisciplinary approach;
- Systematic work for developing critical and creative thinking in children;
- Developing skills for knowledge transfer;
- Balanced use of technology and matched by work with variety of teaching materials on paper, didactic games, and creative activities.



*Figure 1. Game “Balloons” – a color game for 3 to 5 years old children*

The computer games are in consistent with the educational content and are developed in an attractive way. The only skill required by the children is to click, using mouse or an interactive pen. On Figure 1 a print screen of the game “Balloons” is presented. The child has to click on the balloon with the same color as the girl’s balloons. It is a color game for 3 to 5 years old kids. Some medals, sound indication and applauses motivate the children to keep playing. On Figure 2 a screen of “Who is living here?” game is presented. Children have to identify which of the animals belongs to the given environment.



Figure 2. Game “Who is living here?”

Multimedia learning situations include animations, sounds, videos and variety of teaching and learning resources with high visibility and attractive design for the young pupils. On Figure 3 four print-screens from different learning activities are presented: natural life, mathematics, social life and Bulgarian language.



Figure 3. Examples from four multimedia situations

Essentially new level of interactivity could be obtained by including work with interactive whiteboard into teaching and learning process. The hardware solution proposed by the NGO’s team is based on the use of mobile interactive whiteboard – configuration of mobile devices and free license software that transforms an ordinary surface into an interactive one. Concerning technologies equipment, in the best case, one Bulgarian kindergarten would have a laptop and a projector for the learning activities. Kindergartens with modern equipment are an exception and the investment funds in general are very limited.

Interactive learning situation based on the usage of the whiteboard are developed. Children work with interactive IR pen. They use the most common instruments to draw on the board or to move some object in accordance the task given. On Figure 4 some examples are presented. The first task for the children is to identify the view point of each of the cats. The second assignment is to find out the route between the

ant and its home, and the third task before the children is to circle the cars, parked in left in accordance with the boy's point of view. The main skills required by the kids are to move different object on the board and to use the marker and the pen for drawing.



Figure 4. Examples from some interactive situations

A new extension to the model is the development of a methodological system for integrating programmable toys in school activities. The Interactive whiteboard offers an interactive frontal work with children, while the programmable toys provide rich opportunities for team working and put the children in an active position. Working with programmable toys leads to formation of algorithmic thinking in children in early age. On Figure 5 children play with Bee Bot toys, solving mathematics problems concerning spatial orientation in a grid. The toys allow variety of tasks, and could be used in creative way by the teacher. The children like this kind of toys very much, as the Bee bot react to their acts by sound and lights.





*Figure 5. Children playing with Bee Bot within Math work*

The model described here is good to present practice from Bulgaria, as in the country there is no final and complete educational politics, concerning ICT. There is only a strategy for ICT integration into the teaching and learning process, which is not realized and not applicable in full. Through the cooperation between science and business a new working environment in more than 100 kindergartens in Bulgaria was created. More than 500 preschool teachers are covered by teacher trainings conducted by NGO's team aiming in developing higher digital literacy and methodology competency for technologies based teaching and learning. Upgraded version of the educational software after correction and extension is developed.

