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## **Project: Heuristic-Functional Animated Movie *The Boy's Dream* (Number of the First Tenner)**

### **Generation „Z” and MENSA**

The project of this heuristic-functional animated movie named *The Boy's Dream* (**first ten numbers**), will be adjusted with the needs and abilities of the Generation „Z” and demands of MENSA (Serbia) which involve imperative that learning must stimulate cognitive capacities of children. That is, to stimulate synapses at the right time which are directly responsible for mental functions (functional-logical, associative, and convergent-divergent) that should be used as early as at the preschool age. On the other hand, the experience of the kindergarten teachers who use an interactive e-black board or tablets claim that they noticed better results and higher level of motivation at children who learned mathematics in comparison to the use of classical manipulative methods [Hilčenko 2015a; 2015b; 2015c; 2014: 52–52, 101].

J. Piaget and B. Inhelder theory [1978], written 50 years ago that said children were capable of managing complex and abstract thinking only when a child is 10 years old, according to Rajović does not have steady grounds because „A child today and a child 50 years ago is not the same child!”. The author of Nikola Tesla Center (NTC) – learning system, the president of MENSA department for gifted children and UNICEF associate at the project of early stimulation of intellectual development of children stresses that the NTC program is based upon scientific research in the areas of neurophysiology. These researches state that up to the age of 7 even 75% of neuron links or synapses are already created and these are directly responsible for the intellectual abilities of children. NTC-learning system is a kind of learning based upon theoretical grounds of neurology, neuropsychology, pedagogy and other sciences such as didactics and etc. That system of learning represents an operationalization of plenty of theoretical knowledge which makes a good example of how to relate theory with educational practice. This new approach is all about cognitive activities of children that are developing within application of this system. This system is well tested, applicable within the family, kindergartens and classwork in elementary schools [Rajović 2009].

According to V. Kuleto, „sociologists warn for years to the fact that traditional methods of teaching are not compatible with new generations of the young, born in the digital era. A blackboard and chalk are obsolete means at classwork with the Generation «Z» because the young use tablet computers,

interact on-line and use social networks on a daily basis. Before anything we should alter the approach to the teaching and change teaching means and rise up the level of interactivity. In contrary we will lose completely the focus of the coming generations”.

The studies have proved the fact that the young today differ a lot comparing to the older ones. The environment of the Generation „Z” is graphically rich web technologies, HD screens of high resolution and overall satiety of information. The result of these is the perceptive abilities of children who easily accept visual forms and learn more effectively. The teachers must accept these trends and adjust their lectures with the needs of these generations. It is required to direct their attention towards problem solving and critical thinking and not direct it at remembering and reproduction of information. Simultaneously, the classwork has to be altered in order to fit their abilities and needs [<http://www.valentinkuleto.com>].

### **Project of the animated movie *The Boy's Dream***

The realization of the movie will represent a conceptual product for the preschool teachers and preschool children in the country and foreign market, as well. It will appear in a multimedia, interactive and animated DVD edition that is applicable for internet learning. The platform of the application is Adobe Flash CS4, whilst the sound effects will be developed in Sound Forge™ Pro 10, at the „Čardač” studio in Sombor.

This didactic e-means will comprise:

1. Animated movie with 16 scenes (*intro; the beginning of fable – the boy's dream; going in adventure; 10 scenes of questions and riddles; the scene of solving the last problem task – completing the sequel of first 10 numbers; final scene – awakening; ending scene*). The estimated length of movie is 12 minutes,
2. An interactive quiz (*12 functional and logical mathematical tasks*) and
3. Didactic and methodic guidebook for the teachers.

The realization phases of the project are:

1. Blueprinting of the project,
2. Forming an instructional team (*an expert for each area*),
3. Writing of scenario and book of filming (*the illustration done by the author*),
4. Realization of every part of animated movie (*intro → ending scene*),
5. Projecting and development of the interactive quiz,
6. Programming,
7. Composing and synchronizing the sound and the picture,
8. Writing of didactic and methodic guide book,
9. Testing, correction and application optimization and
10. Implementation i the practice.

The estimated time frame if two years (beginning with 1<sup>st</sup> Sept. 2015 to 1<sup>st</sup> Sept. 2017). Application (movie and quiz) will be developed in the resolution of

1680 x 1050 pixel), that is the HD screen for every output units of table and mobile devices (laptops, LCD monitors, tablets), TV and smart electronic boards.

**Table:** the boy dreamt, in which he rides a small bike, and brings with him a wooden sword and teddy bear, and he went in a great adventure (Fig. 1).



**Fig. 1. The first scene – a boy dreams**

The boy's preparation for the journey (Fig. 2).



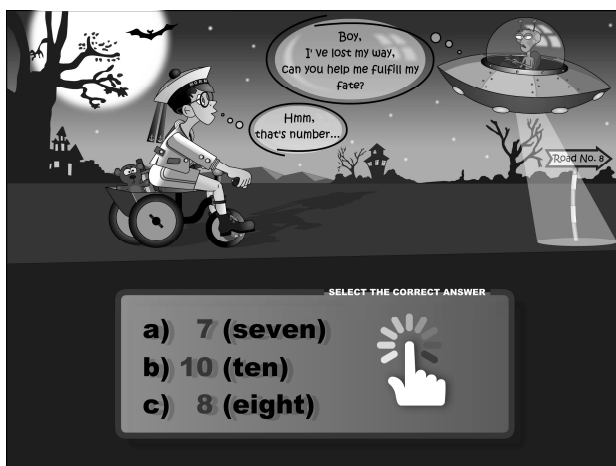
**Fig. 2. The second scene – the boy on a small bike „armed” with a wooden sword and a teddy bear goes into adventure**

Riding his bike the boy meets characters who ask him different questions he has to provide a correct answer. On the journey the numbers are not in the order:

1. an owl (the mysterious number is 2),
2. a bet (the mysterious number is 5),

3. the Moon (the mysterious number is 3),
4. a firefly (the mysterious number is 9),
5. a cat (the mysterious number is 4),
6. a railroad man (the mysterious number is 6),
7. a bogy (the mysterious number is 1),
8. a Martian in UFO (the mysterious number is 8)
9. a night butterfly (the mysterious number is 10) i
10. a mouse (the misterious number is 7).

Each of 10 scenes (length  $\approx$  60 sec.) of the encounter of the boy and a new character stops at the end. This enables the individual advance of individual pupils and leaves enough time for children to ask questions during the pause and teacher to provide additional explanation. In the case of correct answer (*mysterious number, see in the brackets behind each character*) boy proceeds further, (*choosing between three answers*) or in contrary, returns a step back (Fig. 3).

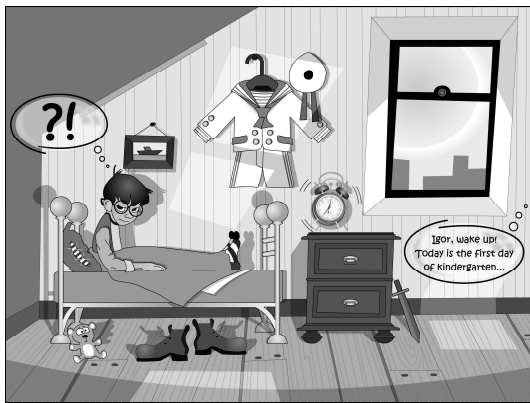


**Fig. 3. The 10<sup>th</sup> scene – the boy meets the Martian, who asks a mysterious question**

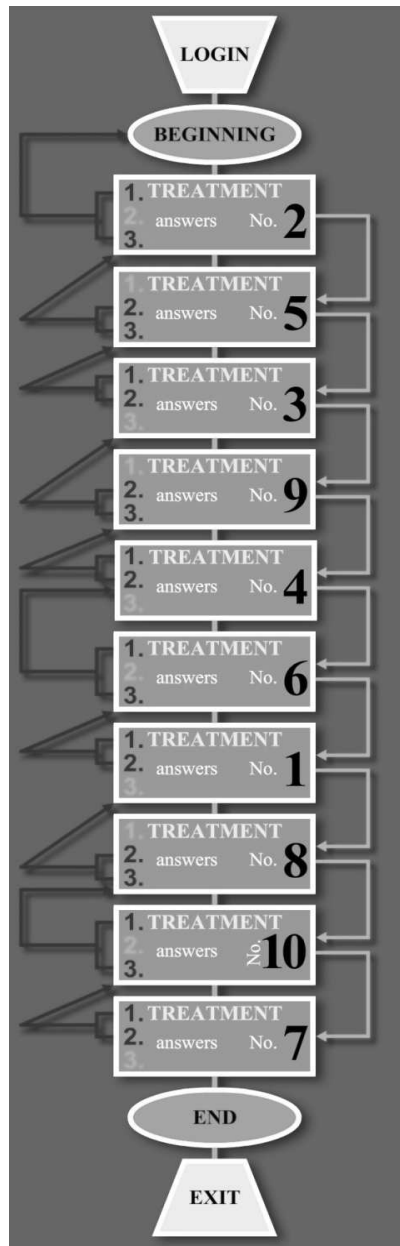
Here is the example of a riddle (that rhymes), which solution is the number 5:

„One to another they stand upright and help children to count. On the hand they are in even numbers, think about what that number is \_\_\_” (poet, Mira Morić).

When he reaches the end of road the boy have the task to order the numbers in the right sequence from 1 to 10. After successfully done the whole tasks there is the scene when an alarm clock rings and mother says: „Igor, wake up! Today is the first day of the kindergarten...” (Fig. 4).



**Fig. 4. The 14<sup>th</sup> scene – the boy wakes up, alarm clock is ringing, the first day of the kindergarten!**



**Chart 1. The algorithm scheme for the solving of the heuristic and branched animated movie**

In the chart 1 the algorithm scheme is presented for the solving of the heuristic and branched animated movie.

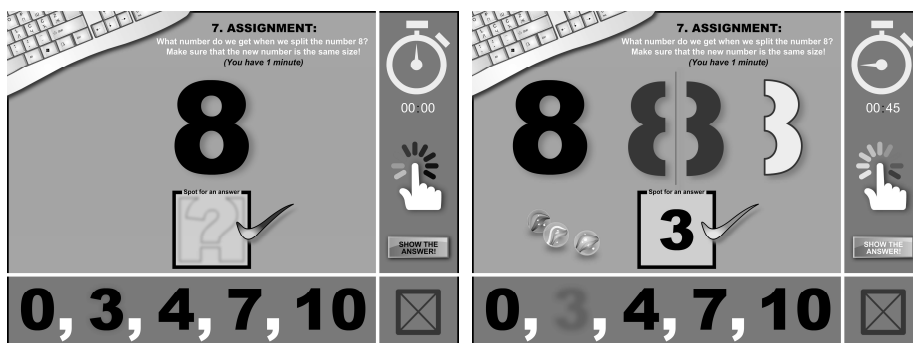
## Quiz

The quiz represents the upgrade and operationalization of the content. There are 12 tasks adjusted to the age group of children that should improve functional and logical capacities. These tasks can be solved by the method of trial and error, by direct manipulation of animated objects. Solving of the tasks is time limited. Children actively search for the answers by solving the tasks and by mathematical operations (+, -, =, ≠, <, >).

The presented task number 7: „Which number do we get when we divide 8 in half? The new numbers must remain the same!”. The appearance and the solution of the task is presented in the pictures n. 1 and n. 2. **Solving the task:** children choose between five answers that are provided (numbers: 0, 3, 4, 7 and 10) and has to set it on the right square with the interrogation mark (?). If the child answers correctly the red sign (✓) changes into green and appears the identical number for marbles as the illustration of the number and there it ends the animation of the solved task – number 3. Pupils have 1 minute to solve a task (Picture 2).

The rest of the tasks will have the content such as (*every further task will be more difficult*):

- 👉 Using provided answers create an agglomeration of the first *n* numbers.
- 👉 Which are even and which one are uneven numbers?
- 👉 Order numbers from the smallest to the biggest one!
- 👉 Guess which number is for 3 bigger than 5, and for 2 smaller than 10?
- 👉 Guess which number is for 4 smaller than number 10, and for 5 bigger than number 1?
- 👉 Which two numbers are written the same and read differently?
- 👉 Which number is the half of 8?
- 👉 Solve the task
- 👉 Solve the task
- 👉 Solve the task
- 👉 Solve the task
- 👉 Solve the task



Picture 1 and 2. The 7<sup>th</sup> functional and logical task with the solution

After the answer was provided the pupil can get to know whether he/she did it right or wrong and depending on that can get his/her points. In the case of wrong answer a pupil gets to know the correct answer (green button). After the quiz has been finished every pupil gets to know the time of task solving the number of points scored and gets the prize (a diploma).

The quiz will offer the teachers in preschools the possibility of following the results of the children participating in the quiz. The software will assess the understanding of the children and report on their advance and results (*the average grade and the group grade and the percent of the correct answers*). This will aid the preschool teachers in the sense of getting data on exact levels of knowledge for this area and problematic sites in the process of acquiring knowledge.

### **Didactic and methodic guidebook**

The guidebook provides the model of classroom activities for realizing this unit besides additional general hints and explanations related to presented animated form as the educational means and its influence on learning process, technical characteristics of the applications and the way quiz should be solved. The guidebook relates to organization, methodic, correlation of other kinds, articulation of activities, forms and manners of classwork, aims and results of this teaching process... The guidebook will have approximately 20 pages.

### **Conclusion**

What we have to do in the following period is to realize the whole project and widely implement this animated movie within classwork in the educational institutions in the Republic of Serbia so as to receive the valid information about its quality and applicability.

„Indeed, ...our aim is to simultaneously provide the variety of didactic ways and means in the daily routines of the preschool teachers. The aim is to educate them for the application and use of contemporary classroom methods regarding the imperative of contemporary times and to provide the present day children with an interactive means appropriate to their needs and to create environment that will stimulate their cognitive capacities above all heuristic-functional and logical thinking”.

### **Literature**

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## **Abstract**

Animated movie *The Boy’s Dream (number of the first tenner)*, is the latest project of our instructional team that complies with the latest international requirements in order to develop a e-tutoring platform. In addition, especially in accordance to the needs and possibilities of Generations „Z”, and on the other hand the concept of heuristic algorithms stimulates intuition and common sense in children. Furthermore, the targeted group – children of preschool institutions engaged in monitoring and resolving application, the platform requires and develops their functional-logical potential. The project includes an interactive quiz with 12-manipulation tasks, like upgrading animated themes (and on the other hand, generates a report on the performance and their abilities (*average scores of the individual, the group and the percentage of correct answers on questions*) which will help teachers to better recognize the level of knowledge on this area and problematic places of learning) as well as the methodological manual. The aim of the paper is to present the project for its full implementation we suggest a period of 2 years.

**Keywords:** animated movie, heuristic-branched model of e-learning, manipulation animation, motivation, Generation „Z” and MENSA, functional and logical thinking.