

THE USE OF GAMES AND ICT IN EDUCATION OF CHILDREN WITH SPECIAL NEEDS

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Abstract: One of the most adapted tools of inclusive education is game, it facilitates the integration of a child with special needs into the community of normal children, at the same time it helps children to interact with peers who have developmental problems.

The Pedagogic Potential of Game includes some game resources: socializing, developmental, diagnostic, didactic, psychotherapeutic, recreational and other resources. The use of games in inclusive education improves social competence and communication skills of children with special needs. In game playing, these children have more opportunities for social interaction with their healthy peers.

Solving the problems of inclusive education at some Russian schools teachers use the following computer game programs: *World Outside Your Window*, *Games for Tigra*, *Sunny Castle* logopaedic simulator *Delfa-142*.

The use of computer gaming technology in the educational process of the inclusive school facilitates the assimilation of children with special needs educational content subjects.

Keywords: *game, Pedagogic Potential of Game, computer game programs, child with special needs, inclusive education.*

INTRODUCTION

Education as a kind of entertainment can be an effective way of learning about the world in a game model, because by means of entertainment an impression and an idea about some object is made. Moreover, an emotional connection of pupil/subject is accomplished (Popov, 2006, p. 71).

The education process of children with special needs can be accompanied with some difficulties

suppressing their development, social adaptation and academic success. Education by means of entertainment can afford a model of reality and "to change it" in the conditions of a game situation. Game can provide a moment of entertainment to an education process which is very important while children with special needs are educated. Game application transforms a very difficult educational task into an attractive and interesting game goal which makes an adaptive environment and

situation of success for children of such a category. The process of education itself becomes an absolute entertainment. Games are accompanied by fascinating plots, display a kind of so-called preparation of children with special needs for future responsibilities, future life conditions full of sense and joy.

It should be mentioned that edutainment of children with special needs can be observed as a special type of education, being not only as an entertainment in the narrow sense, but as a primary entertainment leading to the following profound and stable acquisition. At the same time, edutainment is only a subsidiary means and entertainment is only the first step of edutainment usage. The final goal of the education process is forming a stable interest towards the education and learning process.

The analysis of modern researches of Russian teachers displayed that there is no common idea about the "edutainment" phenomenon. This concept is characterized by Olga Gnatuk as a "digital content" (Gnatuk, 2010), by Anton Popov as "gameducation" (Popov, 2006, p. 71), by Maria Zinovkina as a "creative education" (Zinovkina, 2007), by Igor Feklistov as an "informal education" (Feklistov, 2002), by Olga Zheleznyakova and Olga Djakonova as a "special type of education" (Zheleznyakova, Djakonova, 2013).

Foreign researches of the "edutainment" phenomenon describe it as "education by means of entertainment", filling it with a different sense. According to the idea of Yan Wang, "edutainment" - is a presentation of experience and entertainment through the process of creation (Wang, 2007), Sharon De Vary considers it as "an effective balance between information, multimedia, psychological approaches and modern technologies" (De Vary Sh., 2008). Rob Donovan understands this concept as "a connection of social order with an entertainment mechanism" (Donovan, Henley, 2010).

The analysis of underlined approaches displays a changeable description of the "edutainment"

concept as a special type of education; reveals its functional potential such as entertainment, attention appealing and enthusiasm. By and large not in Russian nor in foreign researches is there no characteristic of edutainment potential in the inclusive environment of education. However, in Russian pedagogic theory and practice there are enough ideas concerned with the basis and realization of pedagogic potential (resources) of game in education. We would like to discuss their characteristics more profoundly.

PEDAGOGIC POTENTIAL OF GAME (GAME RESOURCES) IN INCLUSIVE EDUCATION OF CHILDREN WITH SPECIAL NEEDS

A very rich pedagogic potential is enclosed in the process of solving educational tasks, especially in the case of children with special needs education. Game and game activities have a very big potential for socializing, developing, diagnostic, didactic, psychiatric and therapeutic recreation resources.

Socializing resources of game - let a child understand itself as a member of a society, learn rules, norms and traditions of social life. Taking part in different entertainment games a child with special needs acquires abilities how to interact in society in a small group. Game lets him to choose his role and way to act, orients him to search more complex forms of communication in society. A very attractive plot and character of game evokes a desire to enlarge the view of human life, stimulates fantasy and provokes the desire to make up a new game.

Developing resources of game - activating and actualising natural features and abilities of children, improves their intellect, will, emotions. Games attract by their easy way to act and make a strategy of a child's possible development, forcing it to reveal some hidden abilities. Activation of mental processes by making a child busy with game provokes desire to learn new information and applying it in some game situations.

Diagnostic resources of game - lets us foresee the dynamics of intellectual, motor and emotional development of a child. The dynamics of such

is usually brightly presented in games played by a child with special needs. The application of different games is a means in order to reveal the level of intellectual, motor and emotional state which makes this process adaptive to a child's abilities, moreover, a child himself can fix its achievements, comparing them with previous results at different game stages.

Didactic resources of game – makes learning time easy and welcomes the child to the world of friendly science and knowledge. The didactic goal of a lesson is given as a game task; the conditions of learning activities and rules are modified into suitable ones; learning material is used as game means; study process gets a new element – competition (mostly this is the way to transform a didactic task into a game task); the success of task completing is connected with the game result; emotions of pupils are very important. The complex of such approaches provides the achievement of the didactic goal, getting the feature of didactic game.

Psychotherapeutic resources of game – contribute to an overcoming of psychological and social difficulties which block personal and emotional development of school children with special needs. When playing games a child can be itself, behaving naturally, reacting spontaneously to a game plot, responding to actions of other players, mastering new ways of communication which are difficult to acquire in real life. Game lets a child with special needs get a chance to learn the basis of social contacts, development of social skills and their further improvement and implementation in real life.

Recreational resources – lets game to be used as a means of modern leisure organization for different groups of children (with special needs as well), each player can play the game tasks according to its needs and abilities. In the game process children with special needs have more opportunities to try out their skills of social interaction with other children who do not have any problems and become models of social and communicative competence particular for their age (Reprintceva, 2011).

GAMING METHODS OF EUROPEAN TEACHERS AND PSYCHOLOGISTS WHICH ARE USED FOR CHILDREN WITH SPECIAL NEEDS TEACHING

Nowadays in some Russian schools foreign methods of teaching children with special needs are widely accepted by teachers and psychologists. Teachers in kindergartens and schools use Montessori method based on fun games and serious work, strict discipline and organized freedom (Montessori, 2000).

George Cuisenaire's game complexes (teacher of mathematics, Belgium) make mathematics lessons into amazing games, which a child in play forms some mathematic associations and an idea of the subject (Komarova, 2010).

Zoltan Dienes's special game sets (teacher, psychologist, Hungary) stimulate development of logical thinking, cognitive process (memory, attention, perception and imagination), thinking operations (comparative thinking, analysis, classification, summary) (Logicheskie bloky Denesha, 2014).

Marianne Frostig's psychological game sets (US educational therapist) are very popular, the conception of it is aimed at gaming collaboration of a psychologist and a child who develops its creativity being busy with some game tasks (Perminova, 2014).

Such gaming methods are used quite often in team and individual work during the lessons and after classes among groups of children with special needs and learning disabilities.

UNIQUE METHODS OF RUSSIAN TEACHERS AND PSYCHOLOGISTS USED FOR TEACHING CHILDREN WITH SPECIAL NEEDS

Russian teachers using the experience of foreign colleagues, have developed their own game methods, easing the acquisition of writing, counting, reading for children with special needs, transforming serious study into fun games.

Among them the most effective are:

- *Nikolay Zaytcev's special cubes* for teaching reading. Nikolay Zaytcev's method helps to teach writing and reading at a very early

age, influencing the child's memory through different channels of perception – tactile (cubes are different in size and weight), visual (there are five colours, and they are easy to remember), audial (the filling of cubes is also different, which provides different noises) (Zaytcev, 2000).

- *Evgeniy Chaplygin's dynamic cubes* have an idea based on the principle of teaching reading syllable-by-syllable recommended by Lev Tolstoy and mastered by teacher and inventor Evgeniy Chaplygin. Teaching a child reading runs through the game with wooden cubes with alphabets on their sides (Chaplygin, 2008).
- *Boris and Elena Nikitins' game complexes for developing the skills of construction and logical thinking* are oriented towards a child's independence in the conditions of accomplishing a gaming task. A very important thing in potential characteristics is the rehabilitation possibility. Children with special needs learn to find the way out and to succeed in different problematic situations – when there is a task but the possible ways out are not obvious (Nikitin, 2000).
- *Elena Danilova's toys* are made of different materials (plain, rough, fluffy fabrics), in different bright colors, they have different fillings such as bells, grains, soft fiber. For toy combination Velcro tape is used to let children combine different parts. All these features of toys help to develop experience, feelings and perception which is very important for children with special needs. With each collection of developing toys the author provides a total description, game method being oriented on different age of players and personal particularities (Danilova, 2015).
- *Valeriy Rudenko's brain-crackers* are special training tasks for child's intellect. Being a kind of entertainment they can evoke interest to study, develop logical abilities, attention, and creative thinking. The most important thing is that such games teach children to take decisions

independently thinking about task considering different points and ideas (Rudenko, 2006).

- *Viktor Kaie's (an inventor) games* let children construct and make experiments with different materials developing kinesthetics, training brains (mostly parts referred to speech ability). Kaie's games help children with special needs to acquire information more effectively. In the process of a game, players communicate, help each other, take part in competitions on making the best construction (Kaie, 2015).
- *Vyacheslav Voskobovich's special didactic game sets* develop spatial thinking, attention, memory, imagination, creative thinking, fine motor skills, skills to compare, analyse and compound. There are more complex games, which teach children to make up and model some parts of the whole thing. (Voskobovich, 2013).

All the discussed methods are easy to adapt not only in the process of education but also in leisure activities of children with special needs. The methods can be applied in team-work as well as individual, changing the atmosphere of education into entertainment. Game complex used as an inclusion in the education process of class/school make study easy and help children with special needs to improve the results and achievements.

GAMING COMPUTER PROGRAMS FOR EDUCATION

Nowadays for inclusion implementation, gaming computer programs are widely used in Russian schools. The first Russian program of such kind is *World Behind your Window* is aimed at elder pre-school children with different kinds of learning disabilities. It has been awarded a State Prize, its authors are Elena Goncharova, Tatiana Korolevskaya, Olga Kukushkina - the teachers of the Institute of Correction Pedagogy of Russian Academy of Education (Kukushkina, Korolevskaja, & Goncharova, 1996).

The program *World Behind your Window* contains the materials traditional for primary

education for children with special needs. The topics of it are: seasons, weather, clothes, tales about seasons, calendar. Each part has its own tasks in the sphere of development and education.

The same authors created a gaming computer program *The Reel of Times*. The main idea of it is development of the ability to think and analyse the world around us. The program is oriented towards pre-school children and primary school children.

Children with special needs mostly have dysphasia, for them has been designed logopaedic computer game *Games for Tigr* (Larisa Lizunova). The game is aimed at dysphasia correction among children of pre-school and primary school. It gives them an opportunity to work effectively and master their speech and pronunciation (Lizunova, 2011).

Computer game *Sunny Castle* (Olga Khodchenkova) is used for phonemic speech correction based on visual, auditory, kinesthetic perception. It is used for work with pre-school children with special needs (age from 3 to 6) (Khodchenkova, 2010).

Logopaedic training apparatus (Olga Gribova) is aimed to improve speech of pre-school children: breathing and voice correction, pronunciation, and the ability to change voice force, verbal and logical stresses, phonemic perception forming, logical speech forming, grammar teaching, reading skill forming and correction. Solving game tasks by using computer technology helps to develop psychological processes like thinking, attention, behaviour (Gribova, 2007).

The given examples of computer programs according to the characteristics are alike with the "Edutainment" phenomenon because at the beginning of training each program is used by the teacher, psychologist or speech therapist whose orientation at first is entertaining function realization and cognitive function intensification as second. All these methods serve bringing in children with special needs to learning and finding new information, given while game plot is displayed.

A child with special needs collaborating with other children and tutors in a system of corrective and entertaining work gradually adopts new ways of cognition, learns a lot about the world around and applies new knowledge in practice.

It is important to mention that computer games and programs used in a process of teaching in inclusive environment are strictly regulated by sanitary standards of the Russian Ministry of Public Health and Russian Ministry of Education.

Games using inclusive education are very well combined with traditional teaching methods. Game itself lets a child with special needs feel satisfaction and pleasure while playing, elaborating good and favorable attention towards study.

So, it goes without saying that the act of game in the process of education causes a special interest in a child with special needs, also this act causes different feelings, combination of which creates a child's emotional and sensitive experience.

CONCLUSION

Applying games in a process of inclusive education of children with special needs is very specific because game itself, gaming methods and gaming situations can activate a child's attention to the lesson, evoking interest and motivating him to take part in the study process – in other words in such situations the entertaining function of game is fulfilled.

In the process of education for children with special needs game organization can become a cause of child's study satisfaction. It also can make children busy, drawing their attention away from strange thoughts, disturbance, activating some other game function concerned players collaboration and interaction.

Game situations in a process of education can help students with special needs feel free and be interested in study, to estimate themselves correctly and adequately, comparing their own results with results of other students. Game

can captivate with a plot, forming some life competences, considered to be very important in real life, which proves the fact of activation of entertaining game function in education.

It is possible that in inclusive education edutainment based on entertainment and being a way of evoking interest towards study

subject, causing satisfaction and pleasure of the education process evoking interest to study, can soon take a respectable place in Russian schools as a special way of teaching children with special needs.

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